RMT

# Letter of Transmittal


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**Date:** 2/11/09

**Project No.:** 7201.09

**Subject:** Kewaunee Marsh - 2008 Sampling Report

**Prepared By:** Carol Ridderbusch for Bob Stanforth

Please find enclosed the Kewaunee Marsh Arsenic Bioreduction Field Trial 2008 Sampling Report for your use.

Please call Bob, at (608) 662-5310, with any questions.

Thank you.

cc: Jim Killian – Wisconsin DNR

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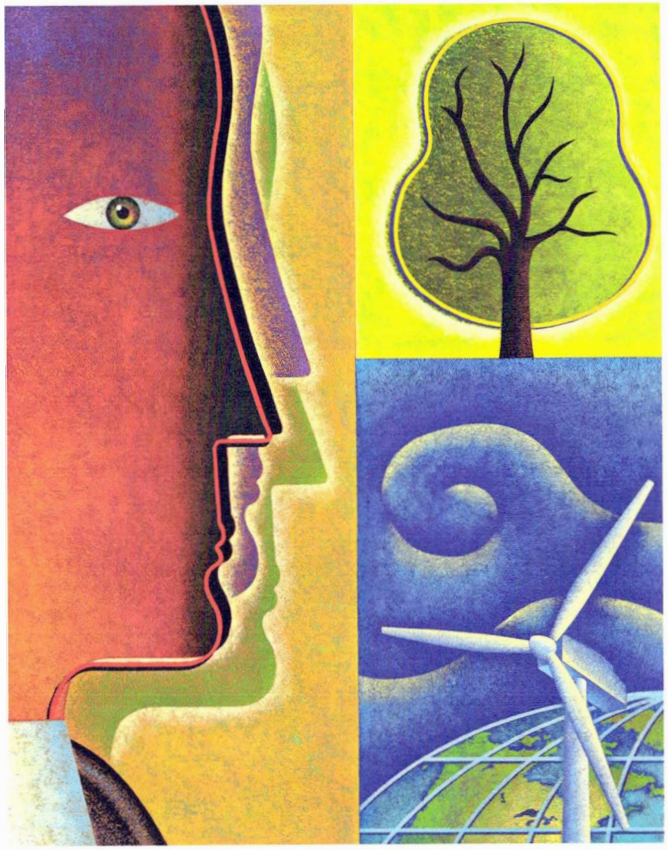
# Kewanee Marsh
# Arsenic Bioreduction Field Trial
# 2008 Sampling Report

**February 2009**



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# Kewanee Marsh
# Arsenic Bioreduction Field Trial
# 2008 Sampling Report

**February 2009**

*Prepared For*
*Wisconsin Department of Natural Resources*


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# Section 1
# Introduction

A portion of the CD Besadny Wildlife Area in Kewaunee, Wisconsin, is contaminated with arsenic due to a railroad spill that occurred a number of decades ago. Field trials to evaluate bioreduction of the arsenic were started during the summer of 2008, as described in the RMT report to the Wisconsin Department of Natural Resources entitled *Bioreduction Field Trials Test Plot Construction Report, July 2008.* The field trials involved developing a number of test plots testing several permutations of the treatment approach, including mechanical versus chemical control of the cattails, type of biostimulant, and frequency of biostimulant application. Maps showing the location of the area of concern within the marsh and of the test plots within the area of concern are provided in Appendix A.

As part of the field trials, soil samples were taken from the test plots monthly from July through October, 2008. This report presents the results of the monthly sampling of the test plots during 2008.

The different test plots are as follows:

- Test Plot 1 Control
- Test Plot 2 Mechanical control of cattails, no biostimulant
- Test Plot 3 Mechanical control of cattails, single application of ethanol
- Test Plot 4 Mechanical control of cattails, single application of sucrose
- Test Plot 5 Mechanical control of cattails, monthly application of sucrose
- Test Plot 6 Chemical control of cattails, no biostimulant
- Test Plot 7 Chemical control of cattails, single application of sucrose

Five samples were collected from each test plot during each visit, with the samples being collected near the four corners and in the center of each test plot (sampling locations within the test plot are shown in Appendix A). Each sample was analyzed individually, and the results were averaged to provide an arsenic concentration for the test plot. Using five replicates allowed for an analysis of the variability within each test plot.

In addition, gas sampling devices were set up in Test Plots 2 through 7, and gas samples were collected when gas had been generated.

# Section 2
# Sampling Methods

The test plots were set up during the week of June 16 through 20, 2008. Samples were collected on the following dates:

- July 29, 2008
- August 26, 2008
- September 30, 2008
- October 28, 2008

## 2.1 Soil Sampling

During each visit, five soil samples were collected from each test plot according to the Soil/Sediment Sampling Procedures (June 2008 Workplan). Soil samples were collected from the upper 1 foot of soil using a soil probe. The probe consists of a 2 ¾-inch hollow metal cylinder that was driven 1 foot into the soil column. The tube was then removed and the soil was extracted. The soil was placed in a labeled Zip-Lock® plastic bag, and identified with the test plot number, date, and time of sample collection. The samples were shipped, on ice, to Pace Laboratories in Green Bay for total arsenic analysis.

## 2.2 Gas Sampling

Gas samples were collected using methods described in the June 2008 workplan (Appendix C of the June 2008 Workplan), in which a gas impermeable device driven into the ground channeled gas to a central collection tube. A Tedlar® gas collection bag was used to store gas collected through this device. During each sampling trip, the gas production volume was checked at each test plot. If gas production was noted, the Tedlar® collection bag was removed and brought back to the RMT Applied Chemistry laboratory for sample preparation.

Arsine gas analysis was performed by capturing arsine gas onto a solid sorbent tube according to NIOSH Method 6001. Gas was drawn from the Tedlar® collection bag through the sorbent tube at a calibrated rate of 0.100 liters/minute (L/min). The volume of gas collected was determined by measuring the time required to empty the bag at a flow rate of 0.100 L/min. The sorbent tubes were then sealed and sent to the Wisconsin Occupational Health Laboratory for arsenic analysis.

# Section 3
# Results and Discussion

## 3.1 Mechanical vs. Chemical Removal of Vegetation

One of the variables in the test plots is the means used to remove the cattails: mechanical versus chemical control. Mechanical control was used for Test Plots 2 through 5, while chemical control (herbicides) was applied to kill the cattails for Test Plots 6 and 7. Photographs of the two sets of test plots throughout the summer are shown in Photographic Logs 1 and 2, respectively. Mechanical removal was effective in the initial killing of most of the cattails (Photographic Log 1). A few cattails in each test plot were observed by August, along with some grasses on the dry soil. The herbicide was effective in killing the cattails, but the dry plants were left still standing. The purpose in killing the cattails was to stop the introduction of oxygen into the submerged soil. Since oxygen transport is passive through the air passages in the cattail stems, leaving the stalks in place allows for oxygen to enter the submerged soil by diffusion through the dead cattail stalks, and does not provide as good a method for generating anaerobic conditions in the saturated soil as mechanical removal does.

## 3.2 Soil Arsenic Analysis

The monthly compositional arsenic results are presented in Tables 1 through 5, for the June through October samples, respectively. The June samples were collected during the test plot installation prior to the initial application of bioreductants, and represent the baseline samples. Laboratory data sheets from Pace Laboratories for the July through October samples are provided in Appendix B. (Laboratory sheets for the June samples are provided in the Test Plot Construction Report.) Table 6 presents a summary of the mean arsenic concentrations in each test plot for each date, while Figure 1 presents the mean arsenic concentrations graphically. The results for each test plot are presented by test plot number, while the sampling sequence is indicated by 0.1 increments (i.e., for Test Plot 1, the soil arsenic concentration plotted at point 1.0 is the baseline sampling, 1.1 is the July sample results, 1.2 the August sample results, etc.). Also shown on the plot are the standard deviation ranges for each sampling event (as the mean concentration +/- standard deviation [$\sigma$]).

There is considerable variability in the arsenic concentrations during each sampling event measured in each test plot. The variability in the sample results from each test plot make it difficult to draw any firm conclusions regarding the success of the treatment over the 4-month period. The mean standard deviation for the samples was 28.6 percent for all of the samples from the five sampling events, and the mean standard deviation for each sampling event

seemed to increase as the summer progressed. The monthly means for the standard deviations are as follows:

- June 23.4%
- July 22.9%
- August 31.5%
- September 32.0%
- October 33.4%

Evaluation of bioreduction effectiveness would be facilitated if the variability in the test plot arsenic concentrations could be reduced. Several ideas as to the source of the variability were evaluated. One reason for the high variability may be the abundance of plant material in the marsh, which makes uniform distribution of the arsenic in the subsample aliquots used for compositional analysis difficult. If this hypothesis is correct, then homogenizing a larger sample should provide a more representative subsample for the compositional analysis. This hypothesis was tested by taking the five samples from two tests plots (Test Plots 1 and 4) for the October sampling, drying and grinding each sample, and then submitting the dry, ground powder to the laboratory for analysis. The results are presented in Table 7. The dry, ground samples show almost as much variability as the original samples, so the observed variability is not due simply to heterogeneity within each sample. Also, the dried samples showed the same trends in arsenic concentration within each test plot as the as-is samples (i.e., the highest arsenic concentration was found in the samples from the same location within each test plot, whether the samples were analyzed as-is or after drying and grinding). This indicates that the variability is due to differences in the arsenic concentrations within the different sections of each test plot, and not to analytical variability.

Also possible is that the organic content of each sample varies considerably, which gives rise to the variability in the arsenic concentrations, since the arsenic is primarily associated with the inorganic fraction in the samples. This hypothesis was tested by ashing the same samples used for the drying and grinding experiment, and then measuring the arsenic content of the ash. The results are presented in Table 7. Note that the arsenic concentrations in the ash are considerably higher than in the soil, since the organic matter had been removed in the ashed samples. Ashing did little to decrease the variability of the samples. The arsenic content of the marsh material appears to be highly variable even within the area of one test plot (approximately 8 feet by 8 feet). Thus, the source of the variability seems to be the heterogeneity of the soil within the test plots, not the small-scale heterogeneity within each sample.

However, the thought process for evaluating the variability of the marsh material did highlight some conceptual difficulties with monitoring the arsenic removal using compositional analysis.

The soil in the marsh consists predominantly of plant material, with a moderate percentage of inorganic material. During the year, the amount of organic material in the marsh is not constant. At the end of each growing season, the cattails and other vegetation in the marsh fall to the ground and create a new layer of marsh material. This layer can be seen in the pictures of the marsh as the fallen cattails. During the winter, this material remains dormant in the marsh. With the return of spring, however, the material in the marsh soil starts to decay and is converted to carbon dioxide ($CO_2$) releasing the inorganic constituents tied up in the plants. This decay is much more rapid under aerobic conditions than it is under anaerobic conditions, and during the warm months of the year than it is during the winter. The bulk of the material formed during the year is decomposed within the next year or two (otherwise the marsh would be increasing in depth very rapidly). Given a constant mass of arsenic in a section of the marsh, the concentrations would vary throughout the year, depending on the stage of plant material decomposition, going up during the summer as the plant material decomposes, and down in the winter as the new plant material is added to the soil. This may be the cause of the apparent increase in arsenic concentrations in the control plot (Test Plot 1) throughout the 5 months. In order to effectively monitor the arsenic concentration over time, samples would have to be taken at the same stage in the yearly cycle.

A second problem that was encountered was that the water level in the marsh dropped during the summer. When the test plots were first installed in June, the water table was at the marsh soil surface, so that the whole soil column was submerged. As the summer progressed, though, the water level dropped by over a foot (as shown by the gas samplers drying up, as discussed below). The surface soil from which the samples were collected was no longer saturated. The strongly anaerobic conditions under which methane (and arsine) is generated in the marsh likely require saturated conditions, which means that the bioreduction of arsenic to arsine gas was no longer occurring in the surface soil. The arsenic levels in the soil need to be monitored during the period when the soil is saturated and methane is being generated (i.e., April through July), rather than during the drier months later in the summer.

## 3.3 Gas Analysis

Gas sampling devices were set up in each of the test plots (except the control plot), and the devices were checked for any generated gas during each sampling trip. Gas samples were collected from the test devices in July and August, and were analyzed for arsine gas. The results are given in Table 8, along with the gas volumes collected. The two samples with the larger volumes had measurable, albeit low, concentrations of arsine. Two other samples had measurable gas volumes, but no arsine. (The gas collection devices were broken on the other two test plots. The tubes had loosened during installation, but had not been noticed.) The results demonstrate that arsine gas generation does occur in the marsh, although the results are not sufficient to indicate a loss in mass over time.

However, in August and thereafter, gas generated was not observed. This was ascribed to the bottom of the gas sampling tube being above the water table. Since collection of the gas samples requires that the bottoms of the sampling tubes be below the groundwater table (to ensure a seal against gas loss to the atmosphere), and since the water tables had fallen to below the bottom of the sampling tubes, the lack of gas was due to the fact that the tubes were no longer sealed. While methane generation should stop once the soil becomes unsaturated, $CO_2$ production (and hence gas) should still continue. New tubes were installed with the bottoms below the groundwater table; however no gas was collected in September or October. The new tubes had a smaller diameter (4 inches vs. 8 inches), and the lack of gas may have been due to a much smaller volume of marsh soil being monitored. The smaller volume of gas collected was too small to measure on the gas sampling equipment.

cubic foot
organic bugs consume
weight of soil decreases
inorganic weight stays same
concentration increases

# Section 4
# Conclusions and Recommendations

## 4.1 Conclusions

The results of the first year's sampling have demonstrated several features:

- Mechanical removal is more effective than herbicide application for disrupting oxygen transport to the subsurface by the cattails.
- Arsine gas generation does occur in the marsh, indicating that the bioreduction of arsenic to arsine is occurring.
- Compositional analysis for arsenic provided inconclusive results as to whether there was significant loss of arsenic from the marsh. The standard deviations for the five samples within each test plot were quite high. In addition, for many test plots, there was no clear trend in direction for the arsenic concentrations. Some test plots (e.g., Test Plot 3) showed a considerable drop in arsenic concentrations, while others (Test Plots 2, 4, 6, and 7) showed no trends, and two (Test Plots 1 and 5) showed an increase in arsenic concentrations over time. The lack of clear trends and the wide variability make it difficult to draw any conclusions as to whether the bioreduction process is remediating the marsh.
- Bioreduction is complicated by the fluctuating water tables in the marsh. Bioreduction requires highly anaerobic (methane-generating) conditions, which presumably only occur when the soil is saturated. Thus, bioreduction is going to occur in the top foot of soil when the water table is high, typically during the spring and early summer, and taper off during the late summer and autumn when the water table falls.
- Monitoring the loss of arsenic from the marsh by measuring soil concentrations is complicated by the annual cycle of organic matter formation and destruction as the marsh vegetation grows, dies, and is decomposed. Since the marsh soil is predominantly organic, the total mass of soil in the surface layer of the marsh varies throughout the year, altering the measured values of compositional arsenic. It is important, therefore, that the measurements be made at the same time during the annual cycle.

## 4.2 Recommendations

Given these findings, RMT recommends that sampling continue through 2009. Sampling should be conducted in April (during which time the test plots will be repaired if necessary) and then in June and July, 2009, with a final sampling trip in October. This will provide an opportunity to repair the test plots, and to compare results at a the same points in the annual cycle (June, July, and October). Both soil samples and gas samples should be collected and analyzed for arsenic. Since the problem with the gas samplers was that the groundwater

dropped below the bottom of the collection devices after July, the existing setups should be appropriate for the wetter months.

We also recommend that one additional test area be installed to eliminate some of the variables encountered during 2008 in evaluating the effectiveness of bioreduction at removing arsenic from the marsh, and in determining arsine gas concentrations in the generated gas. A large sample of contaminated soil will be collected and homogenized, and then placed in sample containers below the groundwater surface. The homogenized soil will be sampled during the sampling events for the other test plots. One sample container will be attached to a gas sampling device. The additional test area will facilitate an evaluation of the effectiveness of bioreduction at removing arsenic from the marsh soil using a more homogenized and characterized soil under more uniform and conducive conditions for bioreduction.

2x2 plot

## Table 1
## June Results (Baseline)

| PLOT # | PLOT REPLICATE | BASELINE ARSENIC CONCENTRATION (mg/kg) DRY WEIGHT | MEAN ARSENIC CONCENTRATION PER PLOT (mg/kg) | STANDARD DEVIATION |
|---|---|---|---|---|
| 1 | 1-1 | 456 | 469.8 | 14.8% |
| | 1-2 | 544 | | |
| | 1-3 | 461 | | |
| | 1-4 | 366 | | |
| | 1-5 | 522 | | |
| 2 | 2-1 | 630 | 798 | 23.7% |
| | 2-2 | 1090 | | |
| | 2-3 | 629 | | |
| | 2-4 | 818 | | |
| | 2-5 | 823 | | |
| 3 | 3-1 | 1330 | 1016.4 | 27.5% |
| | 3-2 | 636 | | |
| | 3-3 | 1200 | | |
| | 3-4 | 1080 | | |
| | 3-5 | 836 | | |
| 4 | 4-1 | 1070 | 780 | 31.4% |
| | 4-2 | 1010 | | |
| | 4-3 | 577 | | |
| | 4-4 | 697 | | |
| | 4-5 | 546 | | |
| 5 | 5-1 | 608 | 517.8 | 20.9% |
| | 5-2 | 457 | | |
| | 5-3 | 641 | | |
| | 5-4 | 506 | | |
| | 5-5 | 377 | | |
| 6 | 6-1 | 898 | 780.2 | 17.5% |
| | 6-2 | 570 | | |
| | 6-3 | 717 | | |
| | 6-4 | 840 | | |
| | 6-5 | 876 | | |
| 7 | 7-1 | 594 | 651.4 | 27.7% |
| | 7-2 | 473 | | |
| | 7-3 | 853 | | |
| | 7-4 | 832 | | |
| | 7-5 | 505 | | |

**Table 2**
**July Results**

| PLOT # | PLOT REPLICATE | COMPOSITIONAL ARSENIC CONCENTRATION (mg/kg) | | |
|---|---|---|---|---|
| | | INDIVIDUAL | MEAN | Σ |
| 1 | 1-1 | 240 | 398 | 105<br>26.4% |
| | 1-2 | 509 | | |
| | 1-3 | 444 | | |
| | 1-4 | 350 | | |
| | 1-5 | 449 | | |
| 2 | 2-1 | 780 | 721 | 77<br>10.7% |
| | 2-2 | 632 | | |
| | 2-3 | 695 | | |
| | 2-4 | 677 | | |
| | 2-5 | 820 | | |
| 3 | 3-1 | 1080 | 863 | 274<br>31.7% |
| | 3-2 | 799 | | |
| | 3-3 | 766 | | |
| | 3-4 | 1180 | | |
| | 3-5 | 490 | | |
| 4 | 4-1 | 741 | 801 | 176<br>22.0% |
| | 4-2 | 1060 | | |
| | 4-3 | 576 | | |
| | 4-4 | 845 | | |
| | 4-5 | 781 | | |
| 5 | 5-1 | 907 | 757 | 225<br>29.7% |
| | 5-2 | 653 | | |
| | 5-3 | 518 | | |
| | 5-4 | 1070 | | |
| | 5-5 | 637 | | |
| 6 | 6-1 | 646 | 700 | 48<br>6.8% |
| | 6-2 | 736 | | |
| | 6-3 | 731 | | |
| | 6-4 | 650 | | |
| | 6-5 | 739 | | |
| 7 | 7-1 | 826 | 590 | 195<br>33.1% |
| | 7-2 | 546 | | |
| | 7-3 | 761 | | |
| | 7-4 | 412 | | |
| | 7-5 | 405 | | |

## Table 3
## August Results

| PLOT # | PLOT REPLICATE | COMPOSITIONAL ARSENIC CONCENTRATION (mg/kg) | | |
|---|---|---|---|---|
| | | INDIVIDUAL | MEAN | Σ |
| 1 | 1-1 | 713 | 594 | 304<br>51.3% |
| | 1-2 | 946 | | |
| | 1-3 | 293 | | |
| | 1-4 | 256 | | |
| | 1-5 | 760 | | |
| 2 | 2-1 | 783 | 707 | 108<br>15.2% |
| | 2-2 | 711 | | |
| | 2-3 | 807 | | |
| | 2-4 | 532 | | |
| | 2-5 | 704 | | |
| 3 | 3-1 | 904 | 901 | 235<br>26.0% |
| | 3-2 | 824 | | |
| | 3-3 | 1200 | | |
| | 3-4 | 1010 | | |
| | 3-5 | 565 | | |
| 4 | 4-1 | 564 | 578 | 170<br>29.4% |
| | 4-2 | 493 | | |
| | 4-3 | 645 | | |
| | 4-4 | 822 | | |
| | 4-5 | 368 | | |
| 5 | 5-1 | 460 | 626 | 233<br>37.2% |
| | 5-2 | 317 | | |
| | 5-3 | 698 | | |
| | 5-4 | 892 | | |
| | 5-5 | 761 | | |
| 6 | 6-1 | 745 | 719 | 213<br>29.6% |
| | 6-2 | 739 | | |
| | 6-3 | 920 | | |
| | 6-4 | 362 | | |
| | 6-5 | 829 | | |
| 7 | 7-1 | 353 | 684 | 217<br>31.7% |
| | 7-2 | 650 | | |
| | 7-3 | 711 | | |
| | 7-4 | 753 | | |
| | 7-5 | 952 | | |

## Table 4
## September Results

| PLOT # | PLOT REPLICATE | COMPOSITIONAL ARSENIC CONCENTRATION (mg/kg) | | |
|---|---|---|---|---|
| | | INDIVIDUAL | MEAN | Σ |
| 1 | 1-1 | 588 | 613 | 227<br>37.1% |
| | 1-2 | 1010 | | |
| | 1-3 | 516 | | |
| | 1-4 | 447 | | |
| | 1-5 | 506 | | |
| 2 | 2-1 | 375 | 723 | 233<br>32.2% |
| | 2-2 | 969 | | |
| | 2-3 | 891 | | |
| | 2-4 | 738 | | |
| | 2-5 | 642 | | |
| 3 | 3-1 | 864 | 800 | 229<br>28.6% |
| | 3-2 | 749 | | |
| | 3-3 | 703 | | |
| | 3-4 | 1150 | | |
| | 3-5 | 533 | | |
| 4 | 4-1 | 636 | 761 | 220<br>29.0% |
| | 4-2 | 764 | | |
| | 4-3 | 747 | | |
| | 4-4 | 1120 | | |
| | 4-5 | 538 | | |
| 5 | 5-1 | 513 | 611 | 184<br>30.1% |
| | 5-2 | 444 | | |
| | 5-3 | 478 | | |
| | 5-4 | 834 | | |
| | 5-5 | 785 | | |
| 6 | 6-1 | 1240 | 823 | 288<br>35.0% |
| | 6-2 | 564 | | |
| | 6-3 | 948 | | |
| | 6-4 | 549 | | |
| | 6-5 | 816 | | |
| 7 | 7-1 | 498 | 655 | 210<br>32.1% |
| | 7-2 | 556 | | |
| | 7-3 | 916 | | |
| | 7-4 | 461 | | |
| | 7-5 | 844 | | |

## Table 5
## October Results

| PLOT # | PLOT REPLICATE | COMPOSITIONAL ARSENIC CONCENTRATION (mg/kg) | | |
|---|---|---|---|---|
| | | INDIVIDUAL | MEAN | Σ |
| 1 | 1-1 | 406 | 609 | 265 |
| | 1-2 | 1050 | | |
| | 1-3 | 415 | | |
| | 1-4 | 529 | | 43.5% |
| | 1-5 | 646 | | |
| 2 | 2-1 | 736 | 745 | 109 |
| | 2-2 | 625 | | |
| | 2-3 | 921 | | |
| | 2-4 | 745 | | 14.6% |
| | 2-5 | 700 | | |
| 3 | 3-1 | 740 | 674 | 159 |
| | 3-2 | 519 | | |
| | 3-3 | 730 | | |
| | 3-4 | 876 | | 23.6% |
| | 3-5 | 505 | | |
| 4 | 4-1 | 507 | 746 | 419 |
| | 4-2 | 1410 | | |
| | 4-3 | 366 | | |
| | 4-4 | 554 | | 56.1% |
| | 4-5 | 894 | | |
| 5 | 5-1 | 791 | 829 | 178 |
| | 5-2 | 830 | | |
| | 5-3 | 635 | | |
| | 5-4 | 1120 | | 21.5% |
| | 5-5 | 770 | | |
| 6 | 6-1 | 574 | 873 | 296 |
| | 6-2 | 904 | | |
| | 6-3 | 1320 | | |
| | 6-4 | 930 | | 33.9% |
| | 6-5 | 636 | | |
| 7 | 7-1 | 331 | 607 | 248 |
| | 7-2 | 693 | | |
| | 7-3 | 360 | | |
| | 7-4 | 769 | | 40.8% |
| | 7-5 | 880 | | |

## Table 6
## Summary of Mean Arsenic Concentrations in Each Test Plot by Month

| TEST PLOT | ARSENIC CONCENTRATION (mg/kg) | | | | |
|---|---|---|---|---|---|
| | JUNE | JULY | AUGUST | SEPTEMBER | OCTOBER |
| 1 | 470 | 398 | 594 | 613 | 609 |
| 2 | 798 | 721 | 707 | 723 | 745 |
| 3 | 1016 | 863 | 901 | 800 | 674 |
| 4 | 780 | 801 | 578 | 761 | 746 |
| 5 | 518 | 757 | 626 | 611 | 829 |
| 6 | 780 | 700 | 719 | 823 | 873 |
| 7 | 651 | 590 | 684 | 655 | 607 |

## Table 7
## Comparison of Three Methods for Preparing Soil Samples for Arsenic Analysis

| SAMPLE | | ARSENIC CONTENT (mg/kg) (DRY) | | | | |
|---|---|---|---|---|---|---|
| | | | | ASHED | | |
| TEST PLOT | SAMPLE | AS-IS | DRIED, GROUND | ASH CONTENT (%) | AS IN ASH, (mg/kg) | AS IN SOIL (mg/kg) |
| 1 | 1-1 | 406 | 434 | 39 | 980 | 378 |
| | 1-2 | 1050 | 971 | 42 | 2100 | 875 |
| | 1-3 | 415 | 335 | 42 | 840 | 351 |
| | 1-4 | 529 | 508 | 32 | 1400 | 454 |
| | 1-5 | 646 | 639 | 31 | 2100 | 658 |
| | Mean | 609 +/- 265 | 577 +/- 246 | 37.2 +/- 5.4 | 1480 +/- 599 | 543 +/- 221 |
| 4 | 4-1 | 507 | 547 | 33 | 1400 | 463 |
| | 4-2 | 1410 | 990 | 32 | 2700 | 871 |
| | 4-3 | 366 | 404 | 21 | 1500 | 317 |
| | 4-4 | 554 | 599 | 30 | 1800 | 549 |
| | 4-5 | 894 | 744 | 37 | 1700 | 622 |
| | Mean | 746 +/- 419 | 657 +/- 222 | 30.6 +/- 5.9 | 1820 +/- 517 | 564 +/- 206 |

## Table 8
## Kewaunee Gas Sampling Results

| PLOT NO | JULY (1)* | | | JULY (2) | | |
|---|---|---|---|---|---|---|
| | VOL (L) | As | | VOL (L) | As | |
| | | AMOUNT (µg) | CONCENTRATION ($mg/m_3$) | | AMOUNT (µg) | CONCENTRATION ($mg/m_3$) |
| 2 | | | | 0.708 | 0.0082 | 0.012 |
| 3 | | | | 0.324 | <0.0060 | <0.019 |
| 4 | | | | 0.223 | <0.0060 | <0.027 |
| 5 | 0.307 | <0.0060 | | | | |
| 6 | | | | | | |
| 7 | | | | 0.452 | 0.0063 | 0.014 |

* Sample was collected by Ms. Annette Weissbach, WDNR.

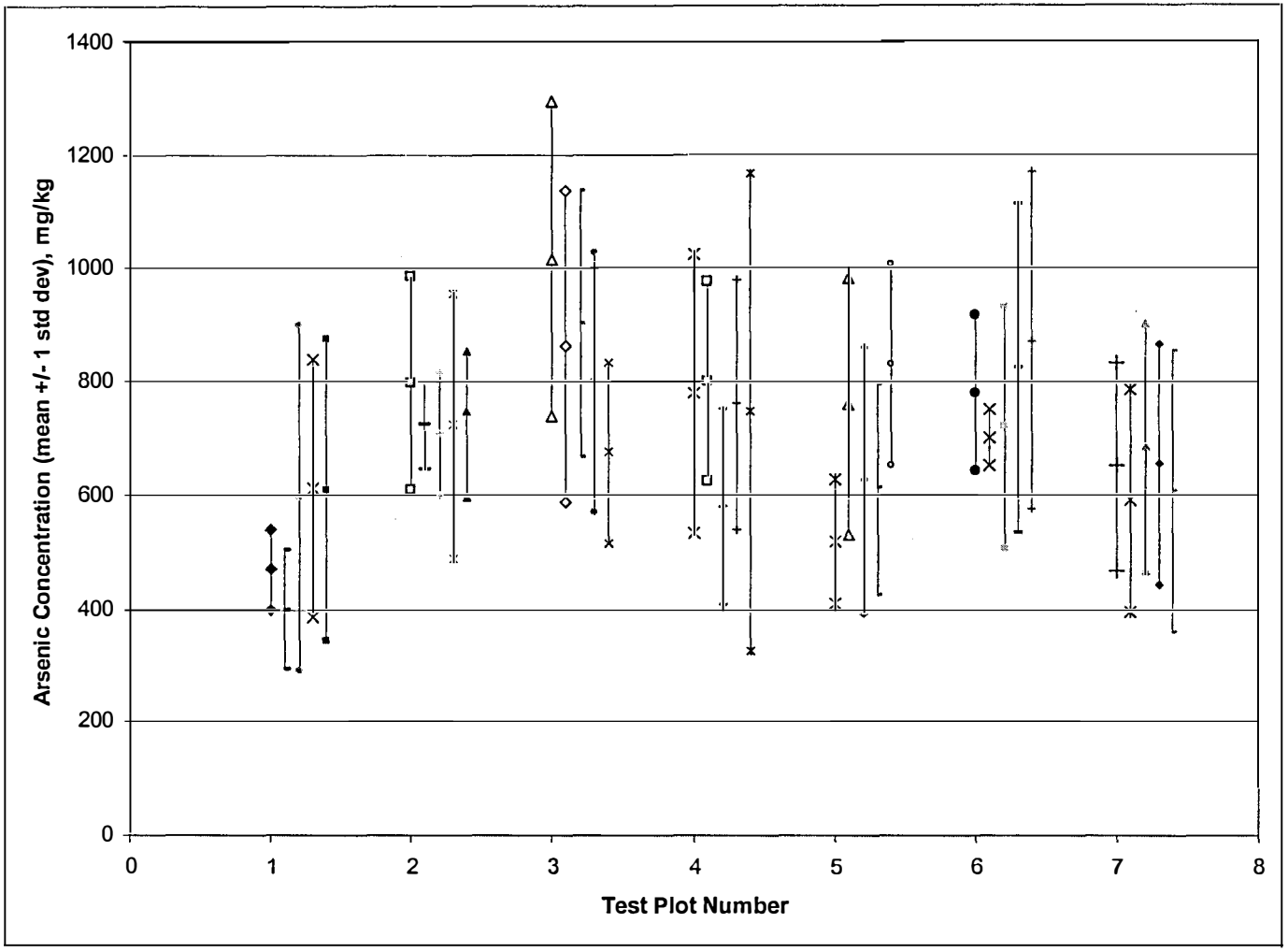



**Figure 1**
**Arsenic Concentration in Kewaunee Test Plots in June Through October 2008**

# Appendix A
# Maps of Marsh and Test Plot Area

2616000 2616500 2617000 2617500 2618000

245000 244500 244000 243500

KEWAUNEE RIVER

## LEGEND

SOIL ARSENIC CONCENTRATIONS (1994 - 2006)
(MG/KG)

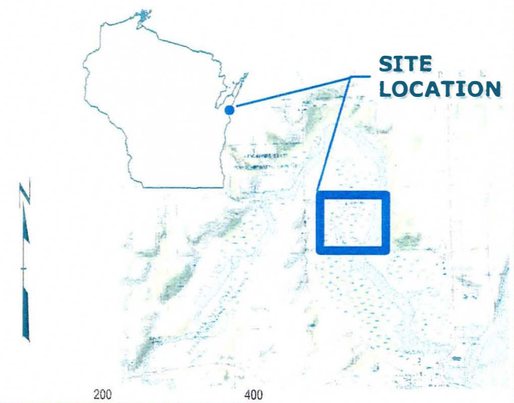
- < 200
- 200 - 1,000
- > 1,000

FENCE

CAPPED AREA

## NOTES

1. ARSENIC CONCENTRATIONS AND SAMPLE LOCATIONS FOR SAMPLES FROM STS CONSULTANTS AND RMT.




0 200 400
FEET

1 " EQUALS 200 '
1:2,400

PROJECT: WISCONSIN DEPARTMENT OF NATURAL RESOURCES KEWAUNEE MARSH

SHEET TITLE: SITE MAP WITH ARSENIC DISTRIBUTION IN SOIL

| | | | | | |
|---|---|---|---|---|---|
| DRAWN BY: | HANKLEY C | SCALE: | | PROJ. NO. | 00-07201.07 |
| CHECKED BY: | SELLWOOD A | | AS NOTED | FILE NO. | 72010701.mxd |
| APPROVED BY: | STANFORTH B | DATE PRINTED: | | FIGURE 1 | |
| DATE: | MAY 2008 | | 5/27/2008 | | |

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

D:\07201\07\72010701.mxd 5/27/2008 15:48:38

TP3-1
TP3-2
TP3-3
TP3-4
TP3-5

SAMPLING CONFIGURATION
FOR PERFORMANCE MONITORING
(TO BE APPLIED TO EACH TEST PLOT)

1 2 3 4 5 6 7

CONTROL

MECHANICAL REMOVAL

HERBICIDE REMOVAL

TEST PLOT AREA
SHOWN IN MAIN MAP

## LEGEND

SOIL ARSENIC CONCENTRATIONS (1994 - 2006)
(MG/KG)

- < 200
- 200 - 1,000
- > 1,000

FENCE

CAPPED AREA

FORMER RAILROAD LOCATION

TP3-1 PROPOSED SAMPLE LOCATIONS

3 8' X 8' TEST PLOT (LOCATION APPROXIMATE)

## NOTES

1. ARSENIC CONCENTRATIONS AND SAMPLE LOCATIONS FOR SAMPLES FROM STS CONSULTANTS AND RMT.
2. TEST PLOT NUMBER CORRESPONDS TO CONDITIONS DESCRIBED IN THE APPROACH SECTION OF THE WORKPLAN.

SITE LOCATION

0 30 60 FEET

1 " EQUALS 30 '
1:360

PROJECT: WISCONSIN DEPARTMENT OF NATURAL RESOURCES
KEWAUNEE MARSH

SHEET TITLE: BIOREDUCTION FIELD TRIAL LAYOUT

| | | | |
|---|---|---|---|
| DRAWN BY: | HANKLEY C | SCALE: | PROJ. NO. 00-07201.07 |
| CHECKED BY: | SELLWOOD A | AS NOTED | FILE NO. 72010702.mxd |
| APPROVED BY: | STANFORTH B | DATE PRINTED: | FIGURE 2 |
| DATE: | MAY 2008 | 5/19/2008 | |

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

D:\07201\07\72010702.mxd 5/19/2008 14:31:26

# Appendix B
# Laboratory Data Sheets, Pace Laboratories

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1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

August 08, 2008

Dick Fish
RMT MADISON
744 HEARTLAND TRAIL
Madison, WI 53717

RE: Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

Dear Dick Fish:
Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

tod.noltemeyer@pacelabs.com
Project Manager

Enclosures





1/124

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1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## CERTIFICATIONS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Green Bay Certification IDs**
Florida (NELAP) Certification #: E87948
Illinois Certification #: 200050
New York Certification #: 11888
North Dakota Certification #: R-150
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 82
Louisiana Certification #: 04168

**Green Bay Volatiles Certification IDs**
Florida (NELAP) Certification #: E87951
Illinois Certification #: 200051
New York Certification #: 11887
North Dakota Certification #: R-200
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 83
Louisiana Certification #: 04169





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## SAMPLE SUMMARY

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 407143001 | PLOT 1-1 | Solid | 07/29/08 11:45 | 07/31/08 15:30 |
| 407143002 | PLOT 1-2 | Solid | 07/29/08 11:46 | 07/31/08 15:30 |
| 407143003 | PLOT 1-3 | Solid | 07/29/08 11:47 | 07/31/08 15:30 |
| 407143004 | PLOT 1-4 | Solid | 07/29/08 11:48 | 07/31/08 15:30 |
| 407143005 | PLOT 1-5 | Solid | 07/29/08 11:49 | 07/31/08 15:30 |
| 407143006 | PLOT 2-1 | Solid | 07/29/08 13:20 | 07/31/08 15:30 |
| 407143007 | PLOT 2-2 | Solid | 07/29/08 13:22 | 07/31/08 15:30 |
| 407143008 | PLOT 2-3 | Solid | 07/29/08 13:24 | 07/31/08 15:30 |
| 407143009 | PLOT 2-4 | Solid | 07/29/08 13:26 | 07/31/08 15:30 |
| 407143010 | PLOT 2-5 | Solid | 07/29/08 13:28 | 07/31/08 15:30 |
| 407143011 | PLOT 3-1 | Solid | 07/29/08 13:30 | 07/31/08 15:30 |
| 407143012 | PLOT 3-2 | Solid | 07/29/08 13:32 | 07/31/08 15:30 |
| 407143013 | PLOT 3-3 | Solid | 07/29/08 13:34 | 07/31/08 15:30 |
| 407143014 | PLOT 3-4 | Solid | 07/29/08 13:36 | 07/31/08 15:30 |
| 407143015 | PLOT 3-5 | Solid | 07/29/08 13:38 | 07/31/08 15:30 |
| 407143016 | PLOT 4-1 | Solid | 07/29/08 13:40 | 07/31/08 15:30 |
| 407143017 | PLOT 4-2 | Solid | 07/29/08 13:42 | 07/31/08 15:30 |
| 407143018 | PLOT 4-3 | Solid | 07/29/08 13:44 | 07/31/08 15:30 |
| 407143019 | PLOT 4-4 | Solid | 07/29/08 13:46 | 07/31/08 15:30 |
| 407143020 | PLOT 4-5 | Solid | 07/29/08 13:48 | 07/31/08 15:30 |
| 407143021 | PLOT 5-1 | Solid | 07/29/08 13:50 | 07/31/08 15:30 |
| 407143022 | PLOT 5-2 | Solid | 07/29/08 13:52 | 07/31/08 15:30 |
| 407143023 | PLOT 5-3 | Solid | 07/29/08 13:54 | 07/31/08 15:30 |
| 407143024 | PLOT 5-4 | Solid | 07/29/08 13:56 | 07/31/08 15:30 |
| 407143025 | PLOT 5-5 | Solid | 07/29/08 13:58 | 07/31/08 15:30 |
| 407143026 | PLOT 6-1 | Solid | 07/29/08 12:35 | 07/31/08 15:30 |
| 407143027 | PLOT 6-2 | Solid | 07/29/08 12:37 | 07/31/08 15:30 |
| 407143028 | PLOT 6-3 | Solid | 07/29/08 12:39 | 07/31/08 15:30 |
| 407143029 | PLOT 6-4 | Solid | 07/29/08 12:41 | 07/31/08 15:30 |
| 407143030 | PLOT 6-5 | Solid | 07/29/08 12:43 | 07/31/08 15:30 |
| 407143031 | PLOT 7-1 | Solid | 07/29/08 12:45 | 07/31/08 15:30 |
| 407143032 | PLOT 7-2 | Solid | 07/29/08 12:47 | 07/31/08 15:30 |
| 407143033 | PLOT 7-3 | Solid | 07/29/08 12:49 | 07/31/08 15:30 |
| 407143034 | PLOT 7-4 | Solid | 07/29/08 12:51 | 07/31/08 15:30 |
| 407143035 | PLOT 7-5 | Solid | 07/29/08 12:53 | 07/31/08 15:30 |





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## SAMPLE ANALYTE COUNT

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| 407143001 | PLOT 1-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143002 | PLOT 1-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143003 | PLOT 1-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143004 | PLOT 1-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143005 | PLOT 1-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143006 | PLOT 2-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143007 | PLOT 2-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143008 | PLOT 2-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143009 | PLOT 2-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143010 | PLOT 2-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143011 | PLOT 3-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143012 | PLOT 3-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143013 | PLOT 3-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143014 | PLOT 3-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143015 | PLOT 3-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143016 | PLOT 4-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143017 | PLOT 4-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143018 | PLOT 4-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143019 | PLOT 4-4 | ASTM D2974-87 | AG | 1 |

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## SAMPLE ANALYTE COUNT

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| | | EPA 6010 | DLB | 1 |
| 407143020 | PLOT 4-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143021 | PLOT 5-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143022 | PLOT 5-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143023 | PLOT 5-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143024 | PLOT 5-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143025 | PLOT 5-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143026 | PLOT 6-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143027 | PLOT 6-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143028 | PLOT 6-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143029 | PLOT 6-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143030 | PLOT 6-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143031 | PLOT 7-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143032 | PLOT 7-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143033 | PLOT 7-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143034 | PLOT 7-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 407143035 | PLOT 7-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |

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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 1-1** **Lab ID: 407143001** Collected: 07/29/08 11:45 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **240** | mg/kg | 5.0 | 0.29 | 1 | 08/04/08 15:12 | 08/04/08 23:49 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.9** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:39 | | |

**Sample: PLOT 1-2** **Lab ID: 407143002** Collected: 07/29/08 11:46 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **509** | mg/kg | 5.0 | 0.29 | 1 | 08/04/08 15:12 | 08/04/08 23:53 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.9** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:40 | | |

**Sample: PLOT 1-3** **Lab ID: 407143003** Collected: 07/29/08 11:47 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **444** | mg/kg | 5.0 | 0.30 | 1 | 08/04/08 15:12 | 08/04/08 23:57 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.0** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 1-4** **Lab ID: 407143004** Collected: 07/29/08 11:48 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **350** | mg/kg | 4.6 | 0.27 | 1 | 08/04/08 15:12 | 08/05/08 00:01 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.3** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |





nelac

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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 1-5** **Lab ID: 407143005** Collected: 07/29/08 11:49 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **449** | mg/kg | 5.6 | 0.33 | 1 | 08/04/08 15:12 | 08/05/08 00:05 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.2** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 2-1** **Lab ID: 407143006** Collected: 07/29/08 13:20 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **780** | mg/kg | 4.6 | 0.27 | 1 | 08/04/08 15:12 | 08/05/08 00:08 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.5** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 2-2** **Lab ID: 407143007** Collected: 07/29/08 13:22 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **632** | mg/kg | 5.3 | 0.31 | 1 | 08/04/08 15:12 | 08/05/08 00:12 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.0** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 2-3** **Lab ID: 407143008** Collected: 07/29/08 13:24 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **695** | mg/kg | 5.8 | 0.34 | 1 | 08/04/08 15:12 | 08/05/08 00:16 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.8** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 2-4** **Lab ID: 407143009** Collected: 07/29/08 13:26 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **677** | mg/kg | 5.3 | 0.31 | 1 | 08/04/08 15:12 | 08/05/08 00:28 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.1** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 2-5** **Lab ID: 407143010** Collected: 07/29/08 13:28 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **820** | mg/kg | 5.9 | 0.35 | 1 | 08/04/08 15:12 | 08/05/08 00:32 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **83.0** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 3-1** **Lab ID: 407143011** Collected: 07/29/08 13:30 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1080** | mg/kg | 5.8 | 0.34 | 1 | 08/04/08 15:12 | 08/05/08 00:36 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.7** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 3-2** **Lab ID: 407143012** Collected: 07/29/08 13:32 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **799** | mg/kg | 5.8 | 0.34 | 1 | 08/04/08 15:12 | 08/05/08 00:40 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.8** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 3-3** **Lab ID: 407143013** Collected: 07/29/08 13:34 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **766** | mg/kg | 5.5 | 0.32 | 1 | 08/04/08 15:12 | 08/05/08 00:44 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.7** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 3-4** **Lab ID: 407143014** Collected: 07/29/08 13:36 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1180** | mg/kg | 16.2 | 0.96 | 1 | 08/04/08 20:00 | 08/06/08 12:24 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **87.7** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 3-5** **Lab ID: 407143015** Collected: 07/29/08 13:38 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **490** | mg/kg | 11.0 | 0.65 | 1 | 08/04/08 20:00 | 08/06/08 12:28 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.9** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:41 | | |

**Sample: PLOT 4-1** **Lab ID: 407143016** Collected: 07/29/08 13:40 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **741** | mg/kg | 13.3 | 0.79 | 1 | 08/04/08 20:00 | 08/06/08 12:32 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **85.0** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:42 | | |

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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 4-2** **Lab ID: 407143017** Collected: 07/29/08 13:42 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1060** | mg/kg | 11.2 | 0.67 | 1 | 08/04/08 20:00 | 08/06/08 12:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.1** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:42 | | |

**Sample: PLOT 4-3** **Lab ID: 407143018** Collected: 07/29/08 13:44 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **576** | mg/kg | 11.7 | 0.69 | 1 | 08/04/08 20:00 | 08/06/08 12:47 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **83.0** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:42 | | |

**Sample: PLOT 4-4** **Lab ID: 407143019** Collected: 07/29/08 13:46 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **845** | mg/kg | 10.6 | 0.63 | 1 | 08/04/08 20:00 | 08/06/08 12:51 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.1** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:42 | | |

**Sample: PLOT 4-5** **Lab ID: 407143020** Collected: 07/29/08 13:48 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **781** | mg/kg | 11.3 | 0.67 | 1 | 08/04/08 20:00 | 08/06/08 12:55 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.2** | % | 0.10 | 0.10 | 1 | | 08/01/08 08:42 | | |

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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 5-1** **Lab ID: 407143021** Collected: 07/29/08 13:50 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **907** | mg/kg | 12.5 | 0.74 | 1 | 08/04/08 20:00 | 08/06/08 12:59 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **84.0** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |

**Sample: PLOT 5-2** **Lab ID: 407143022** Collected: 07/29/08 13:52 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **653** | mg/kg | 11.7 | 0.69 | 1 | 08/04/08 20:00 | 08/06/08 13:03 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.9** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |

**Sample: PLOT 5-3** **Lab ID: 407143023** Collected: 07/29/08 13:54 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **518** | mg/kg | 11.3 | 0.67 | 1 | 08/04/08 20:00 | 08/06/08 13:07 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.3** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |

**Sample: PLOT 5-4** **Lab ID: 407143024** Collected: 07/29/08 13:56 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1070** | mg/kg | 12.2 | 0.72 | 1 | 08/04/08 20:00 | 08/06/08 13:11 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **83.5** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 5-5** **Lab ID: 407143025** Collected: 07/29/08 13:58 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **637** | mg/kg | 11.9 | 0.70 | 1 | 08/04/08 20:00 | 08/06/08 13:15 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **83.2** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |

**Sample: PLOT 6-1** **Lab ID: 407143026** Collected: 07/29/08 12:35 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **646** | mg/kg | 11.9 | 0.71 | 1 | 08/04/08 20:00 | 08/06/08 13:19 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **83.2** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:09 | | |

**Sample: PLOT 6-2** **Lab ID: 407143027** Collected: 07/29/08 12:37 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **736** | mg/kg | 9.6 | 0.57 | 1 | 08/04/08 20:00 | 08/06/08 13:30 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

**Sample: PLOT 6-3** **Lab ID: 407143028** Collected: 07/29/08 12:39 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **731** | mg/kg | 9.6 | 0.57 | 1 | 08/04/08 20:00 | 08/06/08 13:34 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 6-4** **Lab ID: 407143029** Collected: 07/29/08 12:41 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **650** | mg/kg | 9.2 | 0.55 | 1 | 08/04/08 20:00 | 08/06/08 13:39 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.3** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

**Sample: PLOT 6-5** **Lab ID: 407143030** Collected: 07/29/08 12:43 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **739** | mg/kg | 10.4 | 0.62 | 1 | 08/04/08 20:00 | 08/06/08 13:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.8** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

**Sample: PLOT 7-1** **Lab ID: 407143031** Collected: 07/29/08 12:45 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **826** | mg/kg | 10.5 | 0.62 | 1 | 08/05/08 08:40 | 08/05/08 15:38 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.1** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

**Sample: PLOT 7-2** **Lab ID: 407143032** Collected: 07/29/08 12:47 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **546** | mg/kg | 9.7 | 0.57 | 1 | 08/05/08 08:40 | 08/05/08 15:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.3** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**Sample: PLOT 7-3** **Lab ID: 407143033** Collected: 07/29/08 12:49 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **761** | mg/kg | 10.6 | 0.63 | 1 | 08/05/08 08:40 | 08/05/08 15:47 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.1** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:10 | | |

**Sample: PLOT 7-4** **Lab ID: 407143034** Collected: 07/29/08 12:51 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **412** | mg/kg | 10.6 | 0.63 | 1 | 08/05/08 08:40 | 08/05/08 15:51 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.1** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:11 | | |

**Sample: PLOT 7-5** **Lab ID: 407143035** Collected: 07/29/08 12:53 Received: 07/31/08 15:30 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **405** | mg/kg | 9.1 | 0.54 | 1 | 08/05/08 08:40 | 08/05/08 16:02 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.1** | % | 0.10 | 0.10 | 1 | | 08/02/08 07:11 | | |

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## QUALITY CONTROL DATA

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

QC Batch: PMST/1645 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 407143001, 407143002, 407143003, 407143004, 407143005, 407143006, 407143007, 407143008, 407143009, 407143010, 407143011, 407143012, 407143013, 407143014, 407143015, 407143016, 407143017, 407143018, 407143019, 407143020

SAMPLE DUPLICATE: 59240

| Parameter | Units | 407143001 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 79.9 | 77.5 | 3 | 10 | |



REPORT OF LABORATORY ANALYSIS





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## QUALITY CONTROL DATA

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

QC Batch: PMST/1656 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 407143021, 407143022, 407143023, 407143024, 407143025, 407143026, 407143027, 407143028, 407143029, 407143030, 407143031, 407143032, 407143033, 407143034, 407143035

SAMPLE DUPLICATE: 59906

| Parameter | Units | 407143021 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 84.0 | 84.4 | .4 | 10 | |





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## QUALITY CONTROL DATA

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

QC Batch: MPRP/1590 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 407143001, 407143002, 407143003, 407143004, 407143005, 407143006, 407143007, 407143008, 407143009, 407143010, 407143011, 407143012, 407143013

METHOD BLANK: 60326

Associated Lab Samples: 407143001, 407143002, 407143003, 407143004, 407143005, 407143006, 407143007, 407143008, 407143009, 407143010, 407143011, 407143012, 407143013

| Parameter | Units | Blank Result | Reporting Limit | Qualifiers |
|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | |

LABORATORY CONTROL SAMPLE: 60327

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 22.9 | 91 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 60328 60329

| Parameter | Units | 407244002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 3.1 | 28.8 | 28.7 | 26.8 | 26.3 | 83 | 81 | 75-125 | 2 | 20 | |

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## QUALITY CONTROL DATA

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

QC Batch: MPRP/1593 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 407143014, 407143015, 407143016, 407143017, 407143018, 407143019, 407143020, 407143021, 407143022, 407143023, 407143024, 407143025, 407143026, 407143027, 407143028, 407143029, 407143030

METHOD BLANK: 60381
Associated Lab Samples: 407143014, 407143015, 407143016, 407143017, 407143018, 407143019, 407143020, 407143021, 407143022, 407143023, 407143024, 407143025, 407143026, 407143027, 407143028, 407143029, 407143030

| Parameter | Units | Blank Result | Reporting Limit | Qualifiers |
|---|---|---|---|---|
| Arsenic | mg/kg | <0.12 | 2.0 | |

LABORATORY CONTROL SAMPLE: 60382

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 25.0 | 100 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 60383 60384

| Parameter | Units | 1077892001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 3.2 | 30.4 | 30.4 | 25.0 | 25.6 | 72 | 74 | 75-125 | 2 | 20 | M0 |



REPORT OF LABORATORY ANALYSIS





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## QUALITY CONTROL DATA

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

QC Batch: MPRP/1594 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 407143031, 407143032, 407143033, 407143034, 407143035

METHOD BLANK: 60433
Associated Lab Samples: 407143031, 407143032, 407143033, 407143034, 407143035

| Parameter | Units | Blank Result | Reporting Limit | Qualifiers |
|---|---|---|---|---|
| Arsenic | mg/kg | <0.12 | 2.0 | |

LABORATORY CONTROL SAMPLE: 60434

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 49.0 | 196 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 60435 60436

| Parameter | Units | 407245004 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 3.7 | 29.2 | 29.2 | 60.7 | 60.3 | 195 | 194 | 75-125 | .6 | 20 | |



REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 7201.09 KEWAUNEE MARSH
Pace Project No.: 407143

**DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

**ANALYTE QUALIFIERS**

M0 Matrix spike recovery was outside laboratory control limits.





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# Sample Condition Upon Receipt

PaceAnalytical

Client Name: RMT Project # 407143

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other _____

Tracking #: _____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used NH Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature NOT Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: cc 7/31/08

Temp should be above freezing to 6°C Comments:

| | | | |
|---|---|---|---|
| Chain of Custody Present: | ☑Yes | ☐No | ☐N/A 1. |
| Chain of Custody Filled Out: | ☑Yes | ☐No | ☐N/A 2. |
| Chain of Custody Relinquished: | ☑Yes | ☐No | ☐N/A 3. |
| Sampler Name & Signature on COC: | ☑Yes | ☐No | ☐N/A 4. |
| Samples Arrived within Hold Time: | ☑Yes | ☐No | ☐N/A 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes | ☑No | ☐N/A 6. |
| **Rush Turn Around Time Requested:** | ☐Yes | ☑No | ☐N/A 7. |
| Sufficient Volume: | ☑Yes | ☐No | ☐N/A 8. |
| Correct Containers Used: | ☑Yes | ☐No | ☐N/A 9. |
| -Pace Containers Used: | ☑Yes | ☐No | ☐N/A |
| Containers Intact: | ☑Yes | ☐No | ☐N/A 10. |
| Filtered volume received for Dissolved tests | ☐Yes | ☐No | ☑N/A 11. |
| Sample Labels match COC: | ☑Yes | ☐No | ☐N/A 12. |
| -Includes date/time/ID/Analysis Matrix: S | | | |
| All containers needing preservation have been checked. | ☐Yes | ☐No | ☑N/A 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes | ☐No | ☑N/A |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes | ☐No | Initial when completed / Lot # of added preservative |
| Samples checked for dechlorination: | ☐Yes | ☐No | ☑N/A 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes | ☐No | ☑N/A 15. |
| Trip Blank Present: | ☐Yes | ☐No | ☑N/A 16. |
| Trip Blank Custody Seals Present | ☐Yes | ☐No | ☑N/A |
| Pace Trip Blank Lot # (if purchased): _____ | | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**Project Manager Review:** DH **Date:** 7/31/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

# CHAIN OF CUSTODY RECORD

№ 063553

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No: 7201.09 | Project/Client: WDNR - Kewaunee - March

Project Manager/Contact Person: Dick Fish / Bob Stanforth

| Lab No. | Yr 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As (Arsenic) | Filtered (Yes/No) | Preserved (Code) | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| 001 | 7/29 | 11:45 | Plot 1-1 | 1 | S | X | N | 4 | |
| 002 | " | 11:46 | " 1-2 | 1 | " | | | | |
| 003 | " | 11:47 | " 1-3 | 1 | " | | | | |
| 004 | " | 11:48 | " 1-4 | 1 | " | | | | |
| 005 | " | 11:49 | " 1-5 | 1 | " | | | | |
| 006 | " | 13:20 | " 2-1 | 1 | " | | | | |
| 007 | " | 13:22 | " 2-2 | 1 | " | | | | |
| 008 | " | 13:24 | " 2-3 | 1 | " | | | | |
| 009 | " | 13:26 | " 2-4 | 1 | " | | | | |
| 010 | " | 13:28 | " 2-5 | 1 | " | | | | |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS 407143

7/31/08 8:45 AM

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| [signature] | 7/31/08 | D. Fish | 7/31/08 0900 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D Fish | 7/31/08 1200 | J. Meeks | 7/31/08 12:05 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| J. Meeks | 7/31/08 15:30 | J. Meeks | 7/31/08 15:50 |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one) (Normal) Rush
Report Due _____

(For Lab Use Only)
Receipt Temp: _____ Receipt pH (Wet/Metals) _____
Temp Blank Y N _____

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

F-268 (R6/95)

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# CHAIN OF CUSTODY RECORD

№ 063551

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.092 | Project/Client: OWDNR Keewaunee Marsh

Project Manager/Contact Person: Dick Fisk / Bob Stanforth

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Filtered (Yes/No) | Preserved (Code) | Analyses Requested: Total As | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| 011 | 7/29 | 13:30 | Plot 3-1 | 1 | S | N | A | X | |
| 012 | " | 13:32 | 3-2 | " | " | " | " | " | |
| 013 | " | 13:34 | 3-3 | " | " | " | " | " | |
| 014 | " | 13:36 | 3-4 | " | " | " | " | " | |
| 015 | " | 13:38 | 3-5 | " | " | " | " | " | |
| 016 | " | 13:40 | 4-1 | " | " | " | " | " | |
| 017 | " | 13:42 | 4-2 | " | " | " | " | " | |
| 018 | " | 13:44 | 4-3 | " | " | " | " | " | |
| 019 | " | 13:46 | 4-4 | " | " | " | " | " | |
| 020 | " | 13:48 | 4-5 | " | " | " | " | " | |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS

407143

| | | |
|---|---|---|
| SAMPLER Relinquished by (Sig.) — Date/Time: 7/31/08 0:45 | Received by (Sig.) — Date/Time: 7/31/08 0900 | HAZARDS ASSOCIATED WITH SAMPLES: ☐ Flammable ☐ Corrosive ☐ Highly Toxic ☐ Other (list) _____ |
| Relinquished by (Sig.) — Date/Time: 7/31/08 12:07 | Received by (Sig.) — Date/Time: 7/31/08 12:05 | Turn Around (circle one): (Normal) Rush; Report Due _____ |
| Relinquished by (Sig.) — Date/Time: 7/31/08 15:30 | Received by (Sig.) — Date/Time: 7/31/08 15:30 | (For Lab Use Only) Receipt Temp: _____ Temp Blank Y N; Receipt pH (Wet/Metals) _____ |
| Custody Seal: Present/Absent Intact/Not Intact Seal #'s | | |

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

No. 063552

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09 | Project/Client: WDNR - Kewaunee Marsh

Project Manager/Contact Person: Dick Fisk / Bob Stanforth

Filtered (Yes/No): N | Preserved (Code): A

Analyses Requested: Total | As

PRESERVED CODES: A - NONE; B - $HNO_3$; C - $H_2SO_4$; D - NaOH; E - HCl; F - METHANOL; G - _____

| Lab No. | Yr. 2008 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Comments: |
|---|---|---|---|---|---|---|
| 021 | 7/29 | 13:50 | Plot 5-1 | 1 | S | |
| 022 | " | 13:52 | 5-2 | " | " | |
| 023 | " | 13:54 | 5-3 | " | " | |
| 024 | " | 13:56 | 5-4 | " | " | |
| 025 | " | 13:58 | 5-5 | " | " | |
| 026 | " | 12:35 | 6-1 | " | " | |
| 027 | " | 12:37 | 6-2 | " | " | |
| 028 | " | 12:39 | 6-3 | " | " | |
| 029 | " | 12:41 | 6-4 | " | " | |
| 030 | " | 12:43 | 6-5 | " | " | |

SPECIAL INSTRUCTIONS: 407143

| | | | |
|---|---|---|---|
| SAMPLER Relinquished by (Sig.) | Date/Time 7/31/08 8:45AM | Received by (Sig.) | Date/Time 7/31/08 0900 |
| Relinquished by (Sig.) | Date/Time 7/31/08 12:05 | Received by (Sig.) | Date/Time 7/31/08 12:05 |
| Relinquished by (Sig.) | Date/Time 7/31/08 13:30 | Received by (Sig.) | Date/Time 7/31/08 15:10 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one) (Normal) Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals) _____

Temp Blank Y N

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063554

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09

Project/Client: WDNR - Kewaunee Marsh

Project Manager/Contact Person: Dick Fish / Bob Stanforth

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Filtered (Yes/No) N | Preserved (Code) A | Analyses Requested: Total As | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| 031 | 7/29 | 12:45 | Plot 7-1 | 1 | S | | | | |
| 032 | " | 12:47 | 7-2 | 1 | " | | | | |
| 033 | " | 12:49 | 7-3 | 1 | " | | | | |
| 034 | " | 12:51 | 7-4 | 1 | " | | | | |
| 035 | " | 12:53 | 7-5 | 1 | " | | | | |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS

407143

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| | 7/31/08 8:05AM | D. Fish | 7/31/08 09:00 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D. Fish | 7/31/08 10:05 | D. Mello | 7/31/08 12:05 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D. Mello | 7/31/08 15:30 | A. Weber | 7/31/08 15:37 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one) Normal Rush

Report Due

(For Lab Use Only)

Receipt Temp: Receipt pH:

Temp Blank Y N (Wet/Metals)

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

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F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

September 08, 2008

Dick Fish
RMT MADISON
744 HEARTLAND TRAIL
Madison, WI 53717

RE: Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

Dear Dick Fish:
Enclosed are the analytical results for sample(s) received by the laboratory on August 29, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

for Tod N.

Tod Noltemeyer

tod.noltemeyer@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## CERTIFICATIONS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Green Bay Certification IDs**
Louisiana Certification #: 04168
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-150
New York Certification #: 11888
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87948

**Green Bay Volatiles Certification IDs**
Louisiana Certification #: 04169
Kentucky Certification #: 83
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-200
New York Certification #: 11887
Illinois Certification #: 200051
Florida (NELAP) Certification #: E87951

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## SAMPLE SUMMARY

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 408346001 | PLOT 1-1 | Solid | 08/26/08 15:30 | 08/29/08 08:35 |
| 408346002 | PLOT 1-2 | Solid | 08/26/08 15:35 | 08/29/08 08:35 |
| 408346003 | PLOT 1-3 | Solid | 08/26/08 15:40 | 08/29/08 08:35 |
| 408346004 | PLOT 1-4 | Solid | 08/26/08 15:45 | 08/29/08 08:35 |
| 408346005 | PLOT 1-5 | Solid | 08/26/08 15:50 | 08/29/08 08:35 |
| 408346006 | PLOT 2-1 | Solid | 08/26/08 13:45 | 08/29/08 08:35 |
| 408346007 | PLOT 2-2 | Solid | 08/26/08 13:50 | 08/29/08 08:35 |
| 408346008 | PLOT 2-3 | Solid | 08/26/08 13:55 | 08/29/08 08:35 |
| 408346009 | PLOT 2-4 | Solid | 08/26/08 14:00 | 08/29/08 08:35 |
| 408346010 | PLOT 2-5 | Solid | 08/26/08 14:05 | 08/29/08 08:35 |
| 408346011 | PLOT 3-1 | Solid | 08/26/08 13:10 | 08/29/08 08:35 |
| 408346012 | PLOT 3-2 | Solid | 08/26/08 13:15 | 08/29/08 08:35 |
| 408346013 | PLOT 3-3 | Solid | 08/26/08 13:20 | 08/29/08 08:35 |
| 408346014 | PLOT 3-4 | Solid | 08/26/08 13:25 | 08/29/08 08:35 |
| 408346015 | PLOT 3-5 | Solid | 08/26/08 13:30 | 08/29/08 08:35 |
| 408346016 | PLOT 4-1 | Solid | 08/26/08 12:00 | 08/29/08 08:35 |
| 408346017 | PLOT 4-2 | Solid | 08/26/08 12:05 | 08/29/08 08:35 |
| 408346018 | PLOT 4-3 | Solid | 08/26/08 12:10 | 08/29/08 08:35 |
| 408346019 | PLOT 4-4 | Solid | 08/26/08 12:15 | 08/29/08 08:35 |
| 408346020 | PLOT 4-5 | Solid | 08/26/08 12:20 | 08/29/08 08:35 |
| 408346021 | PLOT 5-1 | Solid | 08/26/08 11:30 | 08/29/08 08:35 |
| 408346022 | PLOT 5-2 | Solid | 08/26/08 11:33 | 08/29/08 08:35 |
| 408346023 | PLOT 5-3 | Solid | 08/26/08 11:36 | 08/29/08 08:35 |
| 408346024 | PLOT 5-4 | Solid | 08/26/08 11:39 | 08/29/08 08:35 |
| 408346025 | PLOT 5-5 | Solid | 08/26/08 11:45 | 08/29/08 08:35 |
| 408346026 | PLOT 6-1 | Solid | 08/26/08 14:55 | 08/29/08 08:35 |
| 408346027 | PLOT 6-2 | Solid | 08/26/08 15:00 | 08/29/08 08:35 |
| 408346028 | PLOT 6-3 | Solid | 08/26/08 15:05 | 08/29/08 08:35 |
| 408346029 | PLOT 6-4 | Solid | 08/26/08 15:10 | 08/29/08 08:35 |
| 408346030 | PLOT 6-5 | Solid | 08/26/08 15:15 | 08/29/08 08:35 |
| 408346031 | PLOT 7-1 | Solid | 08/26/08 14:20 | 08/29/08 08:35 |
| 408346032 | PLOT 7-2 | Solid | 08/26/08 14:25 | 08/29/08 08:35 |
| 408346033 | PLOT 7-3 | Solid | 08/26/08 14:30 | 08/29/08 08:35 |
| 408346034 | PLOT 7-4 | Solid | 08/26/08 14:35 | 08/29/08 08:35 |
| 408346035 | PLOT 7-5 | Solid | 08/26/08 14:40 | 08/29/08 08:35 |

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## SAMPLE ANALYTE COUNT

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| 408346001 | PLOT 1-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346002 | PLOT 1-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346003 | PLOT 1-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346004 | PLOT 1-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346005 | PLOT 1-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346006 | PLOT 2-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346007 | PLOT 2-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346008 | PLOT 2-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346009 | PLOT 2-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346010 | PLOT 2-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346011 | PLOT 3-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346012 | PLOT 3-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346013 | PLOT 3-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346014 | PLOT 3-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346015 | PLOT 3-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346016 | PLOT 4-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346017 | PLOT 4-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346018 | PLOT 4-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346019 | PLOT 4-4 | ASTM D2974-87 | GWS | 1 |





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## SAMPLE ANALYTE COUNT

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| | | EPA 6010 | DLB | 1 |
| 408346020 | PLOT 4-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346021 | PLOT 5-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346022 | PLOT 5-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346023 | PLOT 5-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346024 | PLOT 5-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346025 | PLOT 5-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346026 | PLOT 6-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346027 | PLOT 6-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346028 | PLOT 6-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346029 | PLOT 6-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346030 | PLOT 6-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346031 | PLOT 7-1 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346032 | PLOT 7-2 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346033 | PLOT 7-3 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346034 | PLOT 7-4 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |
| 408346035 | PLOT 7-5 | ASTM D2974-87 | GWS | 1 |
| | | EPA 6010 | DLB | 1 |

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Green Bay, WI 54302
(920)469-2436

## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 1-1** **Lab ID: 408346001** Collected: 08/26/08 15:30 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **713** | mg/kg | 4.3 | 0.25 | 1 | 09/02/08 14:23 | 09/03/08 16:44 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.6** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:48 | | |

**Sample: PLOT 1-2** **Lab ID: 408346002** Collected: 08/26/08 15:35 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **946** | mg/kg | 4.5 | 0.26 | 1 | 09/02/08 14:23 | 09/03/08 16:48 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.6** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:48 | | |

**Sample: PLOT 1-3** **Lab ID: 408346003** Collected: 08/26/08 15:40 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **293** | mg/kg | 4.2 | 0.25 | 1 | 09/02/08 14:23 | 09/03/08 16:52 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.0** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:48 | | |

**Sample: PLOT 1-4** **Lab ID: 408346004** Collected: 08/26/08 15:45 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **256** | mg/kg | 4.0 | 0.24 | 1 | 09/02/08 14:23 | 09/03/08 17:04 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **75.0** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:48 | | |

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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 1-5** **Lab ID: 408346005** Collected: 08/26/08 15:50 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **760** | mg/kg | 4.9 | 0.29 | 1 | 09/09/08 09:55 | 09/04/08 13:52 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.8** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:49 | | |

**Sample: PLOT 2-1** **Lab ID: 408346006** Collected: 08/26/08 13:45 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **783** | mg/kg | 3.7 | 0.22 | 1 | 09/09/08 09:55 | 09/04/08 13:56 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **72.9** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:49 | | |

**Sample: PLOT 2-2** **Lab ID: 408346007** Collected: 08/26/08 13:50 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **711** | mg/kg | 5.2 | 0.31 | 1 | 09/09/08 09:55 | 09/04/08 14:00 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:49 | | |

**Sample: PLOT 2-3** **Lab ID: 408346008** Collected: 08/26/08 13:55 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **807** | mg/kg | 5.2 | 0.31 | 1 | 09/09/08 09:55 | 09/04/08 14:04 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.6** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:49 | | |

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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 2-4** **Lab ID: 408346009** Collected: 08/26/08 14:00 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **532** | mg/kg | 4.7 | 0.28 | 1 | 09/09/08 09:55 | 09/04/08 14:08 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.8** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:49 | | |

**Sample: PLOT 2-5** **Lab ID: 408346010** Collected: 08/26/08 14:05 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **704** | mg/kg | 4.9 | 0.29 | 1 | 09/09/08 09:55 | 09/04/08 14:23 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.5** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 3-1** **Lab ID: 408346011** Collected: 08/26/08 13:10 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **904** | mg/kg | 4.8 | 0.29 | 1 | 09/09/08 09:55 | 09/04/08 14:27 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.3** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 3-2** **Lab ID: 408346012** Collected: 08/26/08 13:15 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **824** | mg/kg | 4.7 | 0.28 | 1 | 09/09/08 09:55 | 09/04/08 14:31 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.9** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |





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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 3-3** **Lab ID: 408346013** Collected: 08/26/08 13:20 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1200** | mg/kg | 4.6 | 0.27 | 1 | 09/09/08 09:55 | 09/04/08 14:35 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.2** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 3-4** **Lab ID: 408346014** Collected: 08/26/08 13:25 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1010** | mg/kg | 4.8 | 0.28 | 1 | 09/09/08 09:55 | 09/04/08 14:39 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.0** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 3-5** **Lab ID: 408346015** Collected: 08/26/08 13:30 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **565** | mg/kg | 5.0 | 0.30 | 1 | 09/09/08 09:55 | 09/04/08 14:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.1** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 4-1** **Lab ID: 408346016** Collected: 08/26/08 12:00 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **564** | mg/kg | 4.9 | 0.29 | 1 | 09/09/08 09:55 | 09/04/08 14:46 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.5** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |



**REPORT OF LABORATORY ANALYSIS**





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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 4-2** **Lab ID: 408346017** Collected: 08/26/08 12:05 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **493** | mg/kg | 4.8 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 20:51 | 7440-38-2 | P6 |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.1** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 4-3** **Lab ID: 408346018** Collected: 08/26/08 12:10 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **645** | mg/kg | 4.7 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 21:10 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.9** | % | 0.10 | 0.10 | 1 | | 08/30/08 08:50 | | |

**Sample: PLOT 4-4** **Lab ID: 408346019** Collected: 08/26/08 12:15 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **822** | mg/kg | 5.5 | 0.33 | 1 | 09/03/08 12:36 | 09/03/08 21:14 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.8** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:41 | | |

**Sample: PLOT 4-5** **Lab ID: 408346020** Collected: 08/26/08 12:20 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **368** | mg/kg | 4.6 | 0.27 | 1 | 09/03/08 12:36 | 09/03/08 21:18 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.5** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:41 | | |

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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 5-1** **Lab ID: 408346021** Collected: 08/26/08 11:30 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **460** | mg/kg | 4.9 | 0.29 | 1 | 09/03/08 12:36 | 09/03/08 21:22 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.7** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 5-2** **Lab ID: 408346022** Collected: 08/26/08 11:33 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **317** | mg/kg | 3.5 | 0.21 | 1 | 09/03/08 12:36 | 09/03/08 21:26 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **71.5** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 5-3** **Lab ID: 408346023** Collected: 08/26/08 11:36 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **698** | mg/kg | 4.6 | 0.27 | 1 | 09/03/08 12:36 | 09/03/08 21:30 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.3** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 5-4** **Lab ID: 408346024** Collected: 08/26/08 11:39 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **892** | mg/kg | 5.2 | 0.31 | 1 | 09/03/08 12:36 | 09/03/08 21:33 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 5-5** **Lab ID: 408346025** Collected: 08/26/08 11:45 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **761** | mg/kg | 5.3 | 0.32 | 1 | 09/03/08 12:36 | 09/03/08 21:37 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.3** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 6-1** **Lab ID: 408346026** Collected: 08/26/08 14:55 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **745** | mg/kg | 4.7 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 21:49 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.6** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 6-2** **Lab ID: 408346027** Collected: 08/26/08 15:00 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **739** | mg/kg | 4.7 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 21:53 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.6** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 6-3** **Lab ID: 408346028** Collected: 08/26/08 15:05 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **920** | mg/kg | 4.8 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 21:57 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |





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## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 6-4** **Lab ID: 408346029** Collected: 08/26/08 15:10 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **362** | mg/kg | 4.3 | 0.25 | 1 | 09/03/08 12:36 | 09/03/08 22:01 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.6** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 6-5** **Lab ID: 408346030** Collected: 08/26/08 15:15 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **829** | mg/kg | 5.1 | 0.30 | 1 | 09/03/08 12:36 | 09/03/08 22:05 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.4** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:42 | | |

**Sample: PLOT 7-1** **Lab ID: 408346031** Collected: 08/26/08 14:20 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **353** | mg/kg | 4.7 | 0.28 | 1 | 09/03/08 12:36 | 09/03/08 22:09 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.6** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:43 | | |

**Sample: PLOT 7-2** **Lab ID: 408346032** Collected: 08/26/08 14:25 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **650** | mg/kg | 5.0 | 0.30 | 1 | 09/03/08 12:36 | 09/03/08 22:13 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.2** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:43 | | |



**REPORT OF LABORATORY ANALYSIS**





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## ANALYTICAL RESULTS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**Sample: PLOT 7-3** **Lab ID: 408346033** Collected: 08/26/08 14:30 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **711** | mg/kg | 4.8 | 0.29 | 1 | 09/03/08 12:36 | 09/03/08 22:16 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.3** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:43 | | |

**Sample: PLOT 7-4** **Lab ID: 408346034** Collected: 08/26/08 14:35 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **753** | mg/kg | 3.9 | 0.23 | 1 | 09/03/08 12:36 | 09/03/08 22:20 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **74.5** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:43 | | |

**Sample: PLOT 7-5** **Lab ID: 408346035** Collected: 08/26/08 14:40 Received: 08/29/08 08:35 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **952** | mg/kg | 6.9 | 0.41 | 1 | 09/03/08 12:36 | 09/03/08 22:24 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **85.6** | % | 0.10 | 0.10 | 1 | | 09/03/08 07:43 | | |





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(920)469-2436

## QUALITY CONTROL DATA

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

QC Batch: PMST/1784 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 408346001, 408346002, 408346003, 408346004, 408346005, 408346006, 408346007, 408346008, 408346009, 408346010, 408346011, 408346012, 408346013, 408346014, 408346015, 408346016, 408346017, 408346018

SAMPLE DUPLICATE: 71381

| Parameter | Units | 408371049 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 18.3 | 18.2 | .2 | 10 | |



REPORT OF LABORATORY ANALYSIS





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Pace Analytical Services, Inc.
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(920)469-2436

## QUALITY CONTROL DATA

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

QC Batch: PMST/1785
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 408346019, 408346020, 408346021, 408346022, 408346023, 408346024, 408346025, 408346026, 408346027, 408346028, 408346029, 408346030, 408346031, 408346032, 408346033, 408346034, 408346035

SAMPLE DUPLICATE: 71445

| Parameter | Units | 408346019 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 81.8 | 82.5 | .8 | 10 | |

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## QUALITY CONTROL DATA

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

QC Batch: MPRP/1704 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 408346001, 408346002, 408346003, 408346004

METHOD BLANK: 71654 Matrix: Solid
Associated Lab Samples: 408346001, 408346002, 408346003, 408346004

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 09/03/08 14:48 | |

LABORATORY CONTROL SAMPLE: 71655

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 25.5 | 102 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 71656 71657

| Parameter | Units | 1079558002 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 5.9 | 25 | 25 | 31.4 | 32.0 | 91 | 94 | 75-125 | 2 | 20 | |





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(920)469-2436

## QUALITY CONTROL DATA

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

QC Batch: MPRP/1705 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 408346005, 408346006, 408346007, 408346008, 408346009, 408346010, 408346011, 408346012, 408346013, 408346014, 408346015, 408346016

METHOD BLANK: 71822 Matrix: Solid
Associated Lab Samples: 408346005, 408346006, 408346007, 408346008, 408346009, 408346010, 408346011, 408346012, 408346013, 408346014, 408346015, 408346016

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 09/04/08 12:55 | |

LABORATORY CONTROL SAMPLE: 71823

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 24.7 | 99 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 71824 71825

| Parameter | Units | 408404007 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 4.3 | 29.3 | 29.3 | 33.4 | 38.2 | 99 | 116 | 75-125 | 13 | 20 | |





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Green Bay, WI 54302
(920)469-2436

## QUALITY CONTROL DATA

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

QC Batch: MPRP/1706 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 408346017, 408346018, 408346019, 408346020, 408346021, 408346022, 408346023, 408346024, 408346025, 408346026, 408346027, 408346028, 408346029, 408346030, 408346031, 408346032, 408346033, 408346034, 408346035

METHOD BLANK: 71849 Matrix: Solid
Associated Lab Samples: 408346017, 408346018, 408346019, 408346020, 408346021, 408346022, 408346023, 408346024, 408346025, 408346026, 408346027, 408346028, 408346029, 408346030, 408346031, 408346032, 408346033, 408346034, 408346035

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 09/03/08 20:43 | |

LABORATORY CONTROL SAMPLE: 71850

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 24.3 | 97 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 71851 71852

| Parameter | Units | 408346017 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 493 | 119 | 119 | 874 | 784 | 318 | 243 | 75-125 | 11 | 20 | P6 |



REPORT OF LABORATORY ANALYSIS





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## QUALIFIERS

Project: WDNR KEWAUNEE 8/26/08
Pace Project No.: 408346

**DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

**ANALYTE QUALIFIERS**

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.





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# Sample Condition Upon Receipt

Pace Analytical

Client Name: RMT  Project # 408346

**Courier:** ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other _____

**Tracking #:** _____

Optional: Proj. Due Date: Proj. Name:

**Custody Seal on Cooler/Box Present:** ☐ yes ☑ no  Seals intact: ☐ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

**Thermometer Used** NA  **Type of Ice:** (Wet) Blue None  ☐ Samples on ice, cooling process has begun

**Cooler Temperature** R01  **Biological Tissue Is Frozen:** Yes No

Temp should be above freezing to 6°C

**Comments:**

**Date and Initials of person examining contents:** 4 3/29/08

| | | |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: | ☑Yes ☐No ☐N/A | 12. |
| -Includes date/time/ID/Analysis Matrix: S | | |
| All containers needing preservation have been checked. | ☐Yes ☐No ☑N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes ☐No ☐N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes ☐No | Initial when completed / Lot # of added preservative |
| Samples checked for dechlorination: | ☐Yes ☐No ☑N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☑No ☐N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☐N/A | |
| Pace Trip Blank Lot # (if purchased): _____ | | |

**Client Notification/ Resolution:**  Field Data Required? Y / N

Person Contacted: _____  Date/Time: _____

Comments/ Resolution: _____

**Project Manager Review:** DLH  **Date:** 8/29/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

# CHAIN OF CUSTODY RECORD

№ 063565

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09 | Project/Client: WDNR Kewaunee 8/26/08

Project Manager/Contact Person: Dick Fish / Bob Stanforth

| Lab No. | Yr 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Tc-99 | Filtered (Yes/No) N | Preserved (Code) A | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 001 | 8/26 | 3:30PM | Plot 1-1 | 1 | S | | | | 2 plastic |
| 002 | | 3:35 | 1-2 | 1 | | | | | |
| 003 | | 3:40 | 1-3 | 1 | | | | | |
| 004 | | 3:45 | 1-4 | 1 | | | | | |
| 005 | | 3:50 | 1-5 | 1 | | | | | |
| 006 | | 1:45PM | 2-1 | 1 | | | | | |
| 007 | | 1:50 | 2-2 | 1 | | | | | |
| 008 | | 1:55 | 2-3 | 1 | | | | | |
| 009 | | 2:00 | 2-4 | 1 | | | | | |
| 010 | V | 2:05 | 2-5 | 1 | V | V | | | V |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G _____

SPECIAL INSTRUCTIONS 408346

SAMPLER Relinquished by (Sig.) Kent McCord — Date/Time 8/28/08 7:00AM

Received by (Sig.) D Fanning — Date/Time 8/28/08 1510

Relinquished by (Sig.) D Fanning — Date/Time 1700

Received by (Sig.) — Date/Time

Relinquished by (Sig.) WACCO — Date/Time 8/29/08 8:35

Received by (Sig.) — Date/Time 8/29/08 8:35

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one) (Normal) Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: 3°

Temp Blank Y N

Receipt pH

(Wet/Metals)

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063566

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No: 72010 9 | Project/Client: WDNR Kewaunee 8/26/08

Project Manager/Contact Person: Dick Fish / Bob Stanforth

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As | Comments |
|---|---|---|---|---|---|---|---|
| | | | Filtered (Yes/No) | | | N | |
| | | | Preserved (Code) | | | A | |
| 011 | 8/26 | 1:10PM | Plot 3-1 | 1 | S | | 1-2 block |
| 012 | | 1:15PM | 3-2 | | | | |
| 013 | | 1:20PM | 3-3 | | | | |
| 014 | | 1:25PM | 3-4 | | | | |
| 015 | | 1:30PM | 3-5 | | | | |
| 016 | | 12:00PM | 4-1 | | | | |
| 017 | | 12:05 | 4-2 | | | | |
| 018 | | 12:10 | 4-3 | | | | |
| 019 | | 12:15 | 4-4 | | | | |
| 020 | V | 12:20 | 4-5 | V | V | V | V |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS

408346

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| Kent McCord | 8/25/08 7:00AM | D Fanning | 8/26/08 1500 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D Fanning | 8/26/08 1700 | | |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| WACCO | 8/26/08 835 | | 8/26/08 835 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one) Normal Rush
Report Due _____

(For Lab Use Only)
Receipt Temp: 2°
Temp Blank Y N
Receipt pH (Wet/Metals)

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

F-268 (R6/95)

# CHAIN OF CUSTODY RECORD

№ 063567

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09 | Project/Client: WDNR Kewaunee S/C 658

Project Manager/Contact Person: Dick Fisk / Bob Stanforth

| Lab No. | Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Total As | Comments |
|---|---|---|---|---|---|---|---|
| 021 | 5/26 | 11:30 AM | Plot 5-1 | 1 | S | 1 | 1 - Ziplock |
| 022 | | 11:33 | 5-2 | 1 | 1 | 1 | |
| 023 | | 11:36 | 5-3 | 1 | 1 | 1 | |
| 024 | | 11:39 | 5-4 | 1 | 1 | 1 | |
| 025 | | 11:45 | 5-5 | 1 | 1 | 1 | |
| 026 | | 2:55 PM | 6-1 | 1 | 1 | 1 | |
| 027 | | 3:00 | 6-2 | 1 | 1 | 1 | |
| 028 | | 3:05 | 6-3 | 1 | 1 | 1 | |
| 029 | | 3:10 | 6-4 | 1 | 1 | 1 | |
| 030 | V | 3:15 | 6-5 | V | V | V | V |

Filtered (Yes/No)

Preserved (Code)

Analyses Requested

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS

4108346

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| Kent McCord | 5/25/08 7:00AM | D. Fowle | 1510 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D. Fowle | 1300 | | |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| UPS | 5/28/08 835 | | 5/29/08 835 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one) Normal Rush

Report Due

(For Lab Use Only)

Receipt Temp: 2°

Temp Blank Y N

Receipt pH (Wet/Metals)

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063568

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 720109 | Project/Client: WDNR Kewaunee 8/26/08

Project Manager/Contact Person: Dick Fish / Rob Stanfourth

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total HgS | Comments: |
|---|---|---|---|---|---|---|---|
| 031 | 8/26 | 2:20PM | Plot 7-1 | 1 | S | ✓ | 1 Ziplock |
| 032 | " | 2:25 | 7-2 | " | " | " | " |
| 033 | " | 2:30 | 7-3 | " | " | " | " |
| 034 | " | 2:35 | 7-4 | " | " | " | " |
| 035 | ✓ | 2:40 | 7-5 | ✓ | ✓ | ✓ | ✓ |

Filtered (Yes/No): N

Preserved (Code): A

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS

408346

| | | |
|---|---|---|
| SAMPLER Relinquished by (Sig.) Kent McCord — Date/Time 8/26/08 7:00AM | Received by (Sig.) — Date/Time 8/26/08 1510 | HAZARDS ASSOCIATED WITH SAMPLES: ☐ Flammable ☐ Corrosive ☐ Highly Toxic ☐ Other (list) |
| Relinquished by (Sig.) — Date/Time 1700 | Received by (Sig.) — Date/Time | Turn Around (circle one) Normal Rush; Report Due |
| Relinquished by (Sig.) — Date/Time 8/26/08 1735 | Received by (Sig.) — Date/Time 8/26/08 1735 | (For Lab Use Only) Receipt Temp: 2° Temp Blank Y N; Receipt pH (Wet/Metals) |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

October 15, 2008

Dick Fish
RMT MADISON
744 HEARTLAND TRAIL
Madison, WI 53717

RE: Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

Dear Dick Fish:
Enclosed are the analytical results for sample(s) received by the laboratory on October 03, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

tod.noltemeyer@pacelabs.com
Project Manager

Enclosures





nelac

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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## CERTIFICATIONS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Green Bay Certification IDs**

Louisiana Certification #: 04169
Louisiana Certification #: 04168
Kentucky Certification #: 83
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Carolina Certification #: 503
North Dakota Certification #: R-200
North Dakota Certification #: R-150
New York Certification #: 11888
New York Certification #: 11887
Illinois Certification #: 200051
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87951
Florida (NELAP) Certification #: E87948

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(920)469-2436

## SAMPLE SUMMARY

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 409835001 | PLOT 7-1 | Solid | 09/30/08 15:25 | 10/03/08 08:55 |
| 409835002 | PLOT 7-2 | Solid | 09/30/08 15:30 | 10/03/08 08:55 |
| 409835003 | PLOT 7-3 | Solid | 09/30/08 15:35 | 10/03/08 08:55 |
| 409835004 | PLOT 7-4 | Solid | 09/30/08 15:40 | 10/03/08 08:55 |
| 409835005 | PLOT 7-5 | Solid | 09/30/08 15:45 | 10/03/08 08:55 |
| 409835006 | PLOT 5-1 | Solid | 09/30/08 14:00 | 10/03/08 08:55 |
| 409835007 | PLOT 5-2 | Solid | 09/30/08 14:05 | 10/03/08 08:55 |
| 409835008 | PLOT 5-3 | Solid | 09/30/08 14:10 | 10/03/08 08:55 |
| 409835009 | PLOT 5-4 | Solid | 09/30/08 14:15 | 10/03/08 08:55 |
| 409835010 | PLOT 5-5 | Solid | 09/30/08 14:20 | 10/03/08 08:55 |
| 409835011 | PLOT 6-1 | Solid | 09/30/08 15:00 | 10/03/08 08:55 |
| 409835012 | PLOT 6-2 | Solid | 09/30/08 15:05 | 10/03/08 08:55 |
| 409835013 | PLOT 6-3 | Solid | 09/30/08 15:10 | 10/03/08 08:55 |
| 409835014 | PLOT 6-4 | Solid | 09/30/08 15:15 | 10/03/08 08:55 |
| 409835015 | PLOT 6-5 | Solid | 09/30/08 15:20 | 10/03/08 08:55 |
| 409835016 | PLOT 3-1 | Solid | 09/30/08 12:45 | 10/03/08 08:55 |
| 409835017 | PLOT 3-2 | Solid | 09/30/08 12:50 | 10/03/08 08:55 |
| 409835018 | PLOT 3-3 | Solid | 09/30/08 12:55 | 10/03/08 08:55 |
| 409835019 | PLOT 3-4 | Solid | 09/30/08 13:00 | 10/03/08 08:55 |
| 409835020 | PLOT 3-5 | Solid | 09/30/08 13:05 | 10/03/08 08:55 |
| 409835021 | PLOT 4-1 | Solid | 09/30/08 13:30 | 10/03/08 08:55 |
| 409835022 | PLOT 4-2 | Solid | 09/30/08 13:35 | 10/03/08 08:55 |
| 409835023 | PLOT 4-3 | Solid | 09/30/08 13:40 | 10/03/08 08:55 |
| 409835024 | PLOT 4-4 | Solid | 09/30/08 13:45 | 10/03/08 08:55 |
| 409835025 | PLOT 4-5 | Solid | 09/30/08 13:50 | 10/03/08 08:55 |
| 409835026 | PLOT 1-1 | Solid | 09/30/08 11:30 | 10/03/08 08:55 |
| 409835027 | PLOT 1-2 | Solid | 09/30/08 11:35 | 10/03/08 08:55 |
| 409835028 | PLOT 1-3 | Solid | 09/30/08 11:40 | 10/03/08 08:55 |
| 409835029 | PLOT 1-4 | Solid | 09/30/08 11:45 | 10/03/08 08:55 |
| 409835030 | PLOT 1-5 | Solid | 09/30/08 11:50 | 10/03/08 08:55 |
| 409835031 | PLOT 2-1 | Solid | 09/30/08 12:00 | 10/03/08 08:55 |
| 409835032 | PLOT 2-2 | Solid | 09/30/08 12:05 | 10/03/08 08:55 |
| 409835033 | PLOT 2-3 | Solid | 09/30/08 12:10 | 10/03/08 08:55 |
| 409835034 | PLOT 2-4 | Solid | 09/30/08 12:15 | 10/03/08 08:55 |
| 409835035 | PLOT 2-5 | Solid | 09/30/08 12:20 | 10/03/08 08:55 |





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## SAMPLE ANALYTE COUNT

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| 409835001 | PLOT 7-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835002 | PLOT 7-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835003 | PLOT 7-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835004 | PLOT 7-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835005 | PLOT 7-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835006 | PLOT 5-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835007 | PLOT 5-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835008 | PLOT 5-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835009 | PLOT 5-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835010 | PLOT 5-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835011 | PLOT 6-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835012 | PLOT 6-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835013 | PLOT 6-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835014 | PLOT 6-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835015 | PLOT 6-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835016 | PLOT 3-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835017 | PLOT 3-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835018 | PLOT 3-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835019 | PLOT 3-4 | ASTM D2974-87 | AG | 1 |





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## SAMPLE ANALYTE COUNT

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| | | EPA 6010 | DLB | 1 |
| 409835020 | PLOT 3-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835021 | PLOT 4-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835022 | PLOT 4-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835023 | PLOT 4-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835024 | PLOT 4-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835025 | PLOT 4-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835026 | PLOT 1-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835027 | PLOT 1-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835028 | PLOT 1-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835029 | PLOT 1-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835030 | PLOT 1-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835031 | PLOT 2-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835032 | PLOT 2-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835033 | PLOT 2-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835034 | PLOT 2-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 409835035 | PLOT 2-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |

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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 7-1** **Lab ID: 409835001** Collected: 09/30/08 15:25 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **498** | mg/kg | 4.6 | 0.27 | 1 | 10/07/08 15:20 | 10/08/08 17:23 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.2** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |

**Sample: PLOT 7-2** **Lab ID: 409835002** Collected: 09/30/08 15:30 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **556** | mg/kg | 4.2 | 0.25 | 1 | 10/07/08 15:20 | 10/08/08 17:27 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.3** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |

**Sample: PLOT 7-3** **Lab ID: 409835003** Collected: 09/30/08 15:35 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **916** | mg/kg | 4.3 | 0.25 | 1 | 10/07/08 15:20 | 10/08/08 17:31 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |

**Sample: PLOT 7-4** **Lab ID: 409835004** Collected: 09/30/08 15:40 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **461** | mg/kg | 4.8 | 0.28 | 1 | 10/07/08 15:20 | 10/08/08 17:35 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 7-5** **Lab ID: 409835005** Collected: 09/30/08 15:45 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **844** | mg/kg | 4.0 | 0.24 | 1 | 10/07/08 15:20 | 10/08/08 17:39 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **75.3** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |

**Sample: PLOT 5-1** **Lab ID: 409835006** Collected: 09/30/08 14:00 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **513** | mg/kg | 5.1 | 0.30 | 1 | 10/07/08 15:20 | 10/08/08 17:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.5** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:46 | | |

**Sample: PLOT 5-2** **Lab ID: 409835007** Collected: 09/30/08 14:05 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **444** | mg/kg | 5.4 | 0.32 | 1 | 10/07/08 15:20 | 10/08/08 17:47 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.5** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:47 | | |

**Sample: PLOT 5-3** **Lab ID: 409835008** Collected: 09/30/08 14:10 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **478** | mg/kg | 4.6 | 0.27 | 1 | 10/07/08 15:20 | 10/08/08 17:51 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.3** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:47 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 5-4** **Lab ID: 409835009** Collected: 09/30/08 14:15 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **834** | mg/kg | 4.5 | 0.27 | 1 | 10/07/08 15:20 | 10/08/08 17:55 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.7** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:47 | | |

**Sample: PLOT 5-5** **Lab ID: 409835010** Collected: 09/30/08 14:20 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **785** | mg/kg | 4.5 | 0.26 | 1 | 10/07/08 15:20 | 10/08/08 18:07 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:47 | | |

**Sample: PLOT 6-1** **Lab ID: 409835011** Collected: 09/30/08 15:00 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1240** | mg/kg | 4.7 | 0.28 | 1 | 10/07/08 15:20 | 10/08/08 18:11 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.9** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:47 | | |

**Sample: PLOT 6-2** **Lab ID: 409835012** Collected: 09/30/08 15:05 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **564** | mg/kg | 4.5 | 0.26 | 1 | 10/07/08 15:20 | 10/08/08 18:15 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:35 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 6-3** **Lab ID: 409835013** Collected: 09/30/08 15:10 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **948** | mg/kg | 4.3 | 0.25 | 1 | 10/07/08 15:20 | 10/08/08 18:19 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.9** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:35 | | |

**Sample: PLOT 6-4** **Lab ID: 409835014** Collected: 09/30/08 15:15 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **549** | mg/kg | 4.2 | 0.25 | 1 | 10/07/08 15:20 | 10/08/08 18:23 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.4** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |

**Sample: PLOT 6-5** **Lab ID: 409835015** Collected: 09/30/08 15:20 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **816** | mg/kg | 4.1 | 0.24 | 1 | 10/09/08 09:00 | 10/10/08 13:46 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **75.4** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |

**Sample: PLOT 3-1** **Lab ID: 409835016** Collected: 09/30/08 12:45 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **864** | mg/kg | 5.0 | 0.30 | 1 | 10/09/08 15:55 | 10/10/08 14:09 | 7440-38-2 | P6 |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.2** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 3-2** **Lab ID: 409835017** Collected: 09/30/08 12:50 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **749** | mg/kg | 4.7 | 0.28 | 1 | 10/09/08 15:55 | 10/10/08 14:21 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |

**Sample: PLOT 3-3** **Lab ID: 409835018** Collected: 09/30/08 12:55 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **703** | mg/kg | 4.5 | 0.26 | 1 | 10/09/08 15:55 | 10/10/08 14:25 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.7** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |

**Sample: PLOT 3-4** **Lab ID: 409835019** Collected: 09/30/08 13:00 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1150** | mg/kg | 5.0 | 0.30 | 1 | 10/09/08 15:55 | 10/10/08 14:29 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.1** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |

**Sample: PLOT 3-5** **Lab ID: 409835020** Collected: 09/30/08 13:05 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **533** | mg/kg | 4.8 | 0.28 | 1 | 10/09/08 15:55 | 10/10/08 14:33 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:36 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 4-1** **Lab ID: 409835021** Collected: 09/30/08 13:30 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **636** | mg/kg | 4.7 | 0.28 | 1 | 10/09/08 15:55 | 10/10/08 14:37 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.8** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 4-2** **Lab ID: 409835022** Collected: 09/30/08 13:35 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **764** | mg/kg | 5.2 | 0.31 | 1 | 10/09/08 15:55 | 10/10/08 14:41 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 4-3** **Lab ID: 409835023** Collected: 09/30/08 13:40 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **747** | mg/kg | 4.9 | 0.29 | 1 | 10/09/08 15:55 | 10/10/08 14:45 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.5** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 4-4** **Lab ID: 409835024** Collected: 09/30/08 13:45 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1120** | mg/kg | 5.2 | 0.31 | 1 | 10/09/08 15:55 | 10/10/08 14:57 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.7** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 4-5** **Lab ID: 409835025** Collected: 09/30/08 13:50 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **538** | mg/kg | 5.0 | 0.30 | 1 | 10/09/08 15:55 | 10/10/08 15:01 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.2** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 1-1** **Lab ID: 409835026** Collected: 09/30/08 11:30 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **588** | mg/kg | 4.0 | 0.23 | 1 | 10/09/08 15:55 | 10/10/08 15:05 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **74.8** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 1-2** **Lab ID: 409835027** Collected: 09/30/08 11:35 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1010** | mg/kg | 4.5 | 0.26 | 1 | 10/09/08 15:55 | 10/10/08 15:09 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:37 | | |

**Sample: PLOT 1-3** **Lab ID: 409835028** Collected: 09/30/08 11:40 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **516** | mg/kg | 4.0 | 0.24 | 1 | 10/09/08 15:55 | 10/10/08 15:13 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **75.0** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:38 | | |



**REPORT OF LABORATORY ANALYSIS**

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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 1-4** **Lab ID: 409835029** Collected: 09/30/08 11:45 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **447** | mg/kg | 4.6 | 0.27 | 1 | 10/09/08 15:55 | 10/10/08 15:17 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.5** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:38 | | |

**Sample: PLOT 1-5** **Lab ID: 409835030** Collected: 09/30/08 11:50 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **506** | mg/kg | 5.1 | 0.30 | 1 | 10/09/08 15:55 | 10/10/08 15:21 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.4** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:38 | | |

**Sample: PLOT 2-1** **Lab ID: 409835031** Collected: 09/30/08 12:00 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **375** | mg/kg | 4.7 | 0.28 | 1 | 10/09/08 15:55 | 10/10/08 15:25 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.9** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:38 | | |

**Sample: PLOT 2-2** **Lab ID: 409835032** Collected: 09/30/08 12:05 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **969** | mg/kg | 4.7 | 0.28 | 1 | 10/09/08 15:55 | 10/10/08 15:29 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.6** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:34 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

**Sample: PLOT 2-3** **Lab ID: 409835033** Collected: 09/30/08 12:10 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **891** | mg/kg | 4.9 | 0.29 | 1 | 10/09/08 15:55 | 10/10/08 15:33 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.8** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:34 | | |

**Sample: PLOT 2-4** **Lab ID: 409835034** Collected: 09/30/08 12:15 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **738** | mg/kg | 5.1 | 0.30 | 1 | 10/09/08 15:55 | 10/10/08 17:57 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.3** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:34 | | |

**Sample: PLOT 2-5** **Lab ID: 409835035** Collected: 09/30/08 12:20 Received: 10/03/08 08:55 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **642** | mg/kg | 4.8 | 0.29 | 1 | 10/09/08 15:55 | 10/10/08 18:01 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.4** | % | 0.10 | 0.10 | 1 | | 10/06/08 09:34 | | |





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: PMST/1898 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 409835001, 409835002, 409835003, 409835004, 409835005, 409835006, 409835007, 409835008, 409835009, 409835010, 409835011

SAMPLE DUPLICATE: 85099

| Parameter | Units | 409790022 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 5.7 | 3.9 | 37 | 10 | |



REPORT OF LABORATORY ANALYSIS





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: PMST/1899 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 409835012, 409835013, 409835014, 409835015, 409835016, 409835017, 409835018, 409835019, 409835020, 409835021, 409835022, 409835023, 409835024, 409835025, 409835026, 409835027, 409835028, 409835029, 409835030, 409835031

SAMPLE DUPLICATE: 85100

| Parameter | Units | 409835012 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 77.6 | 76.7 | 1 | 10 | |



REPORT OF LABORATORY ANALYSIS





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: PMST/1900 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 409835032, 409835033, 409835034, 409835035

SAMPLE DUPLICATE: 85101

| Parameter | Units | 409835032 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 78.6 | 77.9 | .9 | 10 | |





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: MPRP/1816 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 409835001, 409835002, 409835003, 409835004, 409835005, 409835006, 409835007, 409835008, 409835009, 409835010, 409835011, 409835012, 409835013, 409835014

METHOD BLANK: 86123 Matrix: Solid
Associated Lab Samples: 409835001, 409835002, 409835003, 409835004, 409835005, 409835006, 409835007, 409835008, 409835009, 409835010, 409835011, 409835012, 409835013, 409835014

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 10/08/08 16:32 | |

LABORATORY CONTROL SAMPLE: 86124

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 24.5 | 98 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 86125 86126

| Parameter | Units | 409631001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 6.6 | 25.5 | 25.5 | 29.5 | 32.4 | 90 | 101 | 75-125 | 9 | 20 | |



REPORT OF LABORATORY ANALYSIS





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: MPRP/1823
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 409835015

METHOD BLANK: 86883 Matrix: Solid
Associated Lab Samples: 409835015

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 10/10/08 10:38 | |

LABORATORY CONTROL SAMPLE: 86884

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 24.0 | 96 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 86885 86886

| Parameter | Units | 409734001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 8.0 | 29.8 | 29.7 | 35.3 | 33.5 | 91 | 86 | 75-125 | 5 | 20 | |





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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

QC Batch: MPRP/1826 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 409835016, 409835017, 409835018, 409835019, 409835020, 409835021, 409835022, 409835023, 409835024, 409835025, 409835026, 409835027, 409835028, 409835029, 409835030, 409835031, 409835032, 409835033, 409835034, 409835035

METHOD BLANK: 87303 Matrix: Solid
Associated Lab Samples: 409835016, 409835017, 409835018, 409835019, 409835020, 409835021, 409835022, 409835023, 409835024, 409835025, 409835026, 409835027, 409835028, 409835029, 409835030, 409835031, 409835032, 409835033, 409835034, 409835035

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 10/10/08 13:54 | |

LABORATORY CONTROL SAMPLE: 87304

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 23.6 | 94 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 87305 87306

| Parameter | Units | 409835016 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 864 | 126 | 126 | 1210 | 1210 | 273 | 271 | 75-125 | .2 | 20 | P6 |



REPORT OF LABORATORY ANALYSIS





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## QUALIFIERS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 409835

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

### ANALYTE QUALIFIERS

| | |
|---|---|
| P6 | Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level. |





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# Sample Condition Upon Receipt

Pace Analytical

Client Name: MMI Project # _____

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Commercial ☐ Pace Other _____

Optional: Proj. Due Date: Proj. Name:

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used: DA Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature: 10.1 Biological Tissue Is Frozen: Yes No

Date and Initials of person examining contents: 10/3/08

Temp should be above freezing to 6°C

Comments:

| | | | |
|---|---|---|---|
| Chain of Custody Present: | ☒Yes | ☐No | ☐N/A 1. |
| Chain of Custody Filled Out: | ☒Yes | ☐No | ☐N/A 2. |
| Chain of Custody Relinquished: | ☒Yes | ☐No | ☐N/A 3. |
| Sampler Name & Signature on COC: | ☒Yes | ☐No | ☐N/A 4. |
| Samples Arrived within Hold Time: | ☐Yes | ☒No | ☐N/A 5. |
| Short Hold Time Analysis (<72hr): | ☐Yes | ☒No | ☐N/A 6. |
| Rush Turn Around Time Requested: | ☐Yes | ☒No | ☐N/A 7. |
| Sufficient Volume: | ☒Yes | ☐No | ☐N/A 8. |
| Correct Containers Used: | ☒Yes | ☐No | ☐N/A 9. |
| -Pace Containers Used: | ☒Yes | ☐No | ☐N/A |
| Containers Intact: | ☒Yes | ☐No | ☐N/A 10. |
| Filtered volume received for Dissolved tests | ☐Yes | ☐No | ☒N/A 11. |
| Sample Labels match COC: | ☒Yes | ☐No | ☐N/A 12. |
| -Includes date/time/ID/Analysis Matrix: S | | | |
| All containers needing preservation have been checked. | ☐Yes | ☐No | ☒N/A 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes | ☐No | ☒N/A |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes | ☐No | Initial when completed / Lot # of added preservative |
| Samples checked for dechlorination: | ☐Yes | ☐No | ☒N/A 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes | ☐No | ☒N/A 15. |
| Trip Blank Present: | ☐Yes | ☐No | ☒N/A 16. |
| Trip Blank Custody Seals Present | ☐Yes | ☐No | ☒N/A |
| Pace Trip Blank Lot # (if purchased): _____ | | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

**Project Manager Review:** DAL **Date:** 10/3/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

# CHAIN OF CUSTODY RECORD

№ 063577

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No.: 720109 | Project/Client: WDNR Kewaunee 9/30/08

Project Manager/Contact Person: Dick Fisk

| Lab No. | Yr: 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As | Comments: |
|---|---|---|---|---|---|---|---|
| 001 | 9/30 | 3:25 | Plot 7-1 | 1 | Soil | | 1-2 plugs |
| 002 | " | 3:30 | Plot 7-2 | " | " | | " |
| 003 | " | 3:35 | Plot 7-3 | " | " | | " |
| 004 | " | 3:40 | Plot 7-4 | " | " | | " |
| 005 | " | 3:45 | Plot 7-5 | " | " | | " |

Filtered (Yes/No): N
Preserved (Code): A

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS: 409835

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| [signature] | 10/02/08 7:30AM | D. Fennell | 10/2/08 0740 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| D. Fennell | 10/2/08 1200 | Wallace | |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| Wallace | 10/3/08 1:55 | [signature] | 10/3/08 1:55 |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one): (Normal) Rush

Report Due: _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals): _____

Temp Blank: Y N

NOT

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063576

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09 | Project/Client: WDNR Kewaunee 9/30/08

Project Manager/Contact Person: Dick Fish

Filtered (Yes/No): N

Preserved (Code): A

Analyses Requested: Total As

PRESERVED CODES: A - NONE; B - $HNO_3$; C - $H_2SO_4$; D - NaOH; E - HCl; F - METHANOL; G - _____

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Comments: |
|---|---|---|---|---|---|---|
| 006 | 9/30 | 2:00 | Plot 5-1 | 1 | Soil | Filtered |
| 007 | " | 2:05 | plot 5-2 | " | " | " |
| 008 | " | 2:10 | plot 5-3 | " | " | " |
| 009 | " | 2:15 | Plot 5-4 | " | " | " |
| 010 | " | 2:20 | plot 5-5 | " | " | " |
| 011 | " | 3:00 | plot 6-1 | " | " | " |
| 012 | " | 3:05 | plot 6-2 | " | " | " |
| 013 | " | 3:10 | plot 6-3 | " | " | " |
| 014 | " | 3:15 | Plot 6-4 | " | " | " |
| 015 | " | 3:20 | Plot 6-5 | " | " | " |

SPECIAL INSTRUCTIONS: 4M9835

| | | | |
|---|---|---|---|
| SAMPLER Relinquished by (Sig.) | Date/Time 10/02/08 7:30 AM | Received by (Sig.) | Date/Time 10/2/08 0940 |
| Relinquished by (Sig.) | Date/Time 10/2/08 1700 | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) | Date/Time 10/3/08 8:55 | Received by (Sig.) | Date/Time 10/3/08 8:55 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one): (Normal) Rush

Report Due: _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals) _____

Temp Blank: Y N

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063575

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No.: 7201.09

Project/Client: WDNR Kewaunee 9-30-08

Project Manager/Contact Person: Dick Fish

| Lab No: | Yr 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As | Filtered (Yes/No) N | Preserved (Code) A | Comments |
|---|---|---|---|---|---|---|---|---|---|
| 016 | 9/30 | 12:45 | Plot 3-1 | 1 | S:1 | ✓ | | | 1-2 L Cool |
| 017 | \| | 12:50 | Plot 3-2 | \| | \| | ✓ | | | \| |
| 018 | \| | 2:55 | Plot 3-3 | \| | \| | ✓ | | | \| |
| 019 | \| | 2:00 | Plot 3-4 | \| | \| | ✓ | | | \| |
| 020 | \| | 1:05 | Plot 3-5 | \| | \| | ✓ | | | \| |
| 021 | \| | 1:30 | Plot 4-1 | \| | \| | ✓ | | | \| |
| 022 | \| | 1:35 | Plot 4-2 | \| | \| | ✓ | | | \| |
| 023 | \| | 1:40 | Plot 4-3 | \| | \| | ✓ | | | \| |
| 024 | \| | 1:45 | Plot 4-4 | \| | \| | ✓ | | | \| |
| 025 | ✓ | 1:50 | Plot 4-5 | ✓ | ✓ | ✓ | | | ✓ |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS: 409835

| | | |
|---|---|---|
| SAMPLER Relinquished by (Sig.) [signature] Date/Time 10/02/08 7:30 AM | Received by (Sig.) D. Fennimore Date/Time 10/2/08 0940 | HAZARDS ASSOCIATED WITH SAMPLES: ☐ Flammable ☐ Corrosive ☐ Highly Toxic ☐ Other (list) _____ |
| Relinquished by (Sig.) D. Fennimore Date/Time 10/2/08 1700 | Received by (Sig.) Wallace Date/Time | |
| Relinquished by (Sig.) Wallace 10/3/08 8:55 | Received by (Sig.) [signature] Date/Time 10/3 9:15 | |
| Custody Seal: Present/Absent Intact/Not Intact Seal #'s | | |

Turn Around (circle one): (Normal) Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals) _____

Temp Blank: Y N

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

No 063574

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

| Project No. | Project/Client |
|---|---|
| 7201.09 | WDNR Kewaunee 9-30-08 |

Project Manager/Contact Person: Dick Fish

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total Arsenic | Filtered (Yes/No) | Preserved (Code) | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| 026 | 9/30 | 11:30 | Plot 1-1 | 1 | Soil | X | N | A | 1-2 ounce |
| 027 | " | 11:35 | Plot 1-2 | " | " | " | " | " | " |
| 028 | " | 11:40 | Plot 1-3 | " | " | " | " | " | " |
| 029 | " | 1:45 | Plot 1-4 | " | " | " | " | " | " |
| 030 | " | 11:50 | Plot 1-5 | " | " | " | " | " | " |
| 031 | " | 12:00 | Plot 2-1 | " | " | " | " | " | " |
| 032 | " | 12:05 | Plot 2-2 | " | " | " | " | " | " |
| 033 | " | 12:10 | Plot 2-3 | " | " | " | " | " | " |
| 034 | " | 12:15 | Plot 2-4 | " | " | " | " | " | " |
| 035 | " | 12:20 | Plot 2-5 | " | " | " | " | " | " |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS

4A9835

| | | |
|---|---|---|
| SAMPLER Relinquished by (Sig.) [signature] Date/Time 10/2/08 7:30AM | Received by (Sig.) [signature] Date/Time 10/2/08 0940 | HAZARDS ASSOCIATED WITH SAMPLES: ☐ Flammable ☐ Corrosive ☐ Highly Toxic ☐ Other (list) _____ |
| Relinquished by (Sig.) [signature] Date/Time 10/2/08 1700 | Received by (Sig.) Date/Time | Turn Around (circle one) (Normal) Rush<br>Report Due _____ |
| Relinquished by (Sig.) [signature] Date/Time 10/3/08 1:55 | Received by (Sig.) [signature] Date/Time 10/3/08 1:55 | (For Lab Use Only)<br>Receipt Temp: _____ Temp Blank Y N<br>Receipt pH (Wet/Metals) _____ |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

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Green Bay, WI 54302
(920)469-2436

November 12, 2008

Dick Fish
RMT MADISON
744 HEARTLAND TRAIL
Madison, WI 53717

RE: Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

Dear Dick Fish:
Enclosed are the analytical results for sample(s) received by the laboratory on October 30, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Marge Allen-Trunkner for T. Noltemeyer

Tod Noltemeyer

tod.noltemeyer@pacelabs.com
Project Manager

Enclosures





nelac

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Green Bay, WI 54302
(920)469-2436

## CERTIFICATIONS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

**Green Bay Certification IDs**

Louisiana Certification #: 04169
Louisiana Certification #: 04168
Kentucky Certification #: 83
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Carolina Certification #: 503
North Dakota Certification #: R-200
North Dakota Certification #: R-150
New York Certification #: 11888
New York Certification #: 11887
Illinois Certification #: 200051
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87951
Florida (NELAP) Certification #: E87948





nelac

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## SAMPLE SUMMARY

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 4010895001 | PLOT 1-1 | Solid | 10/28/08 10:10 | 10/30/08 09:00 |
| 4010895002 | PLOT 1-2 | Solid | 10/28/08 10:15 | 10/30/08 09:00 |
| 4010895003 | PLOT 1-3 | Solid | 10/28/08 10:20 | 10/30/08 09:00 |
| 4010895004 | PLOT 1-4 | Solid | 10/28/08 10:25 | 10/30/08 09:00 |
| 4010895005 | PLOT 1-5 | Solid | 10/28/08 10:30 | 10/30/08 09:00 |
| 4010895006 | PLOT 2-1 | Solid | 10/28/08 11:20 | 10/30/08 09:00 |
| 4010895007 | PLOT 2-2 | Solid | 10/28/08 11:25 | 10/30/08 09:00 |
| 4010895008 | PLOT 2-3 | Solid | 10/28/08 11:30 | 10/30/08 09:00 |
| 4010895009 | PLOT 2-4 | Solid | 10/28/08 11:35 | 10/30/08 09:00 |
| 4010895010 | PLOT 2-5 | Solid | 10/28/08 11:40 | 10/30/08 09:00 |
| 4010895011 | PLOT 3-1 | Solid | 10/28/08 11:45 | 10/30/08 09:00 |
| 4010895012 | PLOT 3-2 | Solid | 10/28/08 11:50 | 10/30/08 09:00 |
| 4010895013 | PLOT 3-3 | Solid | 10/28/08 11:55 | 10/30/08 09:00 |
| 4010895014 | PLOT 3-4 | Solid | 10/28/08 12:00 | 10/30/08 09:00 |
| 4010895015 | PLOT 3-5 | Solid | 10/28/08 12:05 | 10/30/08 09:00 |
| 4010895016 | PLOT 4-1 | Solid | 10/28/08 12:10 | 10/30/08 09:00 |
| 4010895017 | PLOT4-2 | Solid | 10/28/08 12:15 | 10/30/08 09:00 |
| 4010895018 | PLOT 4-3 | Solid | 10/28/08 12:20 | 10/30/08 09:00 |
| 4010895019 | PLOT 4-4 | Solid | 10/28/08 12:25 | 10/30/08 09:00 |
| 4010895020 | PLOT4-5 | Solid | 10/28/08 12:30 | 10/30/08 09:00 |
| 4010895021 | PLOT 5-1 | Solid | 10/28/08 12:35 | 10/30/08 09:00 |
| 4010895022 | PLOT 5-2 | Solid | 10/28/08 12:40 | 10/30/08 09:00 |
| 4010895023 | PLOT 5-3 | Solid | 10/28/08 12:45 | 10/30/08 09:00 |
| 4010895024 | PLOT 5-4 | Solid | 10/28/08 12:50 | 10/30/08 09:00 |
| 4010895025 | PLOT 5-5 | Solid | 10/28/08 12:55 | 10/30/08 09:00 |
| 4010895026 | PLOT 6-1 | Solid | 10/28/08 10:30 | 10/30/08 09:00 |
| 4010895027 | PLOT 6-2 | Solid | 10/28/08 10:35 | 10/30/08 09:00 |
| 4010895028 | PLOT 6-3 | Solid | 10/28/08 10:40 | 10/30/08 09:00 |
| 4010895029 | PLOT 6-4 | Solid | 10/28/08 10:45 | 10/30/08 09:00 |
| 4010895030 | PLOT 6-5 | Solid | 10/28/08 10:50 | 10/30/08 09:00 |
| 4010895031 | PLOT 7-1 | Solid | 10/28/08 10:45 | 10/30/08 09:00 |
| 4010895032 | PLOT 7-2 | Solid | 10/28/08 10:50 | 10/30/08 09:00 |
| 4010895033 | PLOT 7-3 | Solid | 10/28/08 10:55 | 10/30/08 09:00 |
| 4010895034 | PLOT 7-4 | Solid | 10/28/08 11:00 | 10/30/08 09:00 |
| 4010895035 | PLOT 7-5 | Solid | 10/28/08 11:05 | 10/30/08 09:00 |
| 4010895036 | TP2 UNDERPAIL 1 | Solid | 10/28/08 12:00 | 10/30/08 09:00 |
| 4010895037 | TP2 UNDERPAIL 2 | Solid | 10/28/08 12:00 | 10/30/08 09:00 |





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## SAMPLE SUMMARY

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| 4010895038 | TP4 UNDERPAIL 1 | Solid | 10/28/08 12:00 | 10/30/08 09:00 |
| 4010895039 | TP4 UNDERPAIL 2 | Solid | 10/28/08 12:00 | 10/30/08 09:00 |

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## SAMPLE ANALYTE COUNT

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| 4010895001 | PLOT 1-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895002 | PLOT 1-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895003 | PLOT 1-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895004 | PLOT 1-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895005 | PLOT 1-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895006 | PLOT 2-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895007 | PLOT 2-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895008 | PLOT 2-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895009 | PLOT 2-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895010 | PLOT 2-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895011 | PLOT 3-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895012 | PLOT 3-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895013 | PLOT 3-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895014 | PLOT 3-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895015 | PLOT 3-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895016 | PLOT 4-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895017 | PLOT 4-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895018 | PLOT 4-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895019 | PLOT 4-4 | ASTM D2974-87 | AG | 1 |





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## SAMPLE ANALYTE COUNT

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| | | EPA 6010 | DLB | 1 |
| 4010895020 | PLOT 4-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895021 | PLOT 5-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895022 | PLOT 5-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895023 | PLOT 5-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895024 | PLOT 5-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895025 | PLOT 5-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895026 | PLOT 6-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895027 | PLOT 6-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895028 | PLOT 6-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895029 | PLOT 6-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895030 | PLOT 6-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895031 | PLOT 7-1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895032 | PLOT 7-2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895033 | PLOT 7-3 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895034 | PLOT 7-4 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895035 | PLOT 7-5 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895036 | TP2 UNDERPAIL 1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895037 | TP2 UNDERPAIL 2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |

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## SAMPLE ANALYTE COUNT

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

| Lab ID | Sample ID | Method | Analysts | Analytes Reported |
|---|---|---|---|---|
| 4010895038 | TP4 UNDERPAIL 1 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |
| 4010895039 | TP4 UNDERPAIL 2 | ASTM D2974-87 | AG | 1 |
| | | EPA 6010 | DLB | 1 |

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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

**Sample: PLOT 1-1** **Lab ID: 4010895001** Collected: 10/28/08 10:10 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **406** | mg/kg | 4.5 | 0.27 | 1 | 11/03/08 11:52 | 11/03/08 21:16 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:48 | | |

**Sample: PLOT 1-2** **Lab ID: 4010895002** Collected: 10/28/08 10:15 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1050** | mg/kg | 5.2 | 0.31 | 1 | 11/03/08 11:52 | 11/03/08 21:28 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 1-3** **Lab ID: 4010895003** Collected: 10/28/08 10:20 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **415** | mg/kg | 4.4 | 0.26 | 1 | 11/03/08 11:52 | 11/03/08 21:32 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.3** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 1-4** **Lab ID: 4010895004** Collected: 10/28/08 10:25 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **529** | mg/kg | 4.6 | 0.27 | 1 | 11/03/08 11:52 | 11/03/08 21:36 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.2** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |





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## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

**Sample: PLOT 1-5** **Lab ID: 4010895005** Collected: 10/28/08 10:30 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **646** | mg/kg | 5.0 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 21:40 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.2** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 2-1** **Lab ID: 4010895006** Collected: 10/28/08 11:20 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **736** | mg/kg | 5.1 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 21:44 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 2-2** **Lab ID: 4010895007** Collected: 10/28/08 11:25 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **625** | mg/kg | 4.7 | 0.28 | 1 | 11/03/08 11:52 | 11/03/08 21:48 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.7** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 2-3** **Lab ID: 4010895008** Collected: 10/28/08 11:30 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **921** | mg/kg | 4.9 | 0.29 | 1 | 11/03/08 11:52 | 11/03/08 21:52 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

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## ANALYTICAL RESULTS

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**Sample: PLOT 2-4** **Lab ID: 4010895009** Collected: 10/28/08 11:35 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **745** | mg/kg | 5.1 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 22:04 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.3** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 2-5** **Lab ID: 4010895010** Collected: 10/28/08 11:40 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **700** | mg/kg | 5.1 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 22:08 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:49 | | |

**Sample: PLOT 3-1** **Lab ID: 4010895011** Collected: 10/28/08 11:45 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **740** | mg/kg | 5.2 | 0.31 | 1 | 11/03/08 11:52 | 11/03/08 22:12 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.8** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:51 | | |

**Sample: PLOT 3-2** **Lab ID: 4010895012** Collected: 10/28/08 11:50 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **519** | mg/kg | 5.1 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 22:16 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.4** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:51 | | |





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## ANALYTICAL RESULTS

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**Sample: PLOT 3-3** **Lab ID: 4010895013** Collected: 10/28/08 11:55 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **730** | mg/kg | 5.2 | 0.31 | 1 | 11/03/08 11:52 | 11/03/08 22:20 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:51 | | |

**Sample: PLOT 3-4** **Lab ID: 4010895014** Collected: 10/28/08 12:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **876** | mg/kg | 4.9 | 0.29 | 1 | 11/03/08 11:52 | 11/03/08 22:24 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.8** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 3-5** **Lab ID: 4010895015** Collected: 10/28/08 12:05 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **505** | mg/kg | 4.4 | 0.26 | 1 | 11/03/08 11:52 | 11/03/08 22:28 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 4-1** **Lab ID: 4010895016** Collected: 10/28/08 12:10 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **507** | mg/kg | 5.0 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 22:32 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.1** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

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## ANALYTICAL RESULTS

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**Sample: PLOT 4-2** **Lab ID: 4010895017** Collected: 10/28/08 12:15 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1410** | mg/kg | 5.2 | 0.31 | 1 | 11/03/08 11:52 | 11/03/08 22:36 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.7** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 4-3** **Lab ID: 4010895018** Collected: 10/28/08 12:20 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **366** | mg/kg | 5.5 | 0.33 | 1 | 11/03/08 11:52 | 11/03/08 22:40 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 4-4** **Lab ID: 4010895019** Collected: 10/28/08 12:25 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **554** | mg/kg | 5.0 | 0.30 | 1 | 11/03/08 11:52 | 11/03/08 22:52 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.0** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 4-5** **Lab ID: 4010895020** Collected: 10/28/08 12:30 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **894** | mg/kg | 5.4 | 0.32 | 1 | 11/03/08 11:52 | 11/03/08 22:56 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.4** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |





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## ANALYTICAL RESULTS

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**Sample: PLOT 5-1** **Lab ID: 4010895021** Collected: 10/28/08 12:35 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **791** | mg/kg | 5.2 | 0.31 | 1 | 11/03/00 14:30 | 11/06/08 17:11 | 7440-38-2 | P6 |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.8** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 5-2** **Lab ID: 4010895022** Collected: 10/28/08 12:40 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **830** | mg/kg | 5.0 | 0.30 | 1 | 11/03/00 14:30 | 11/06/08 17:23 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.0** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 5-3** **Lab ID: 4010895023** Collected: 10/28/08 12:45 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **635** | mg/kg | 5.2 | 0.31 | 1 | 11/03/00 14:30 | 11/06/08 17:27 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:52 | | |

**Sample: PLOT 5-4** **Lab ID: 4010895024** Collected: 10/28/08 12:50 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1120** | mg/kg | 4.8 | 0.28 | 1 | 11/03/00 14:30 | 11/06/08 17:31 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.2** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |





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## ANALYTICAL RESULTS

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**Sample: PLOT 5-5** **Lab ID: 4010895025** Collected: 10/28/08 12:55 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **770** | mg/kg | 5.2 | 0.31 | 1 | 11/03/00 14:30 | 11/06/08 17:35 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |

**Sample: PLOT 6-1** **Lab ID: 4010895026** Collected: 10/28/08 10:30 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **574** | mg/kg | 4.6 | 0.27 | 1 | 11/03/00 14:30 | 11/06/08 17:39 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.4** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |

**Sample: PLOT 6-2** **Lab ID: 4010895027** Collected: 10/28/08 10:35 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **904** | mg/kg | 5.8 | 0.34 | 1 | 11/03/00 14:30 | 11/06/08 17:43 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **82.8** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |

**Sample: PLOT 6-3** **Lab ID: 4010895028** Collected: 10/28/08 10:40 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **1320** | mg/kg | 7.4 | 0.44 | 1 | 11/03/00 14:30 | 11/06/08 17:47 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **86.5** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |





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## ANALYTICAL RESULTS

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**Sample: PLOT 6-4** **Lab ID: 4010895029** Collected: 10/28/08 10:45 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **930** | mg/kg | 4.6 | 0.27 | 1 | 11/03/00 14:30 | 11/06/08 17:58 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.4** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |

**Sample: PLOT 6-5** **Lab ID: 4010895030** Collected: 10/28/08 10:50 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **636** | mg/kg | 4.2 | 0.25 | 1 | 11/03/00 14:30 | 11/06/08 18:02 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.1** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:53 | | |

**Sample: PLOT 7-1** **Lab ID: 4010895031** Collected: 10/28/08 10:45 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **331** | mg/kg | 4.8 | 0.28 | 1 | 11/03/00 14:30 | 11/06/08 18:06 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **79.0** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: PLOT 7-2** **Lab ID: 4010895032** Collected: 10/28/08 10:50 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **693** | mg/kg | 4.3 | 0.25 | 1 | 11/03/00 14:30 | 11/06/08 18:10 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **76.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

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## ANALYTICAL RESULTS

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**Sample: PLOT 7-3** **Lab ID: 4010895033** Collected: 10/28/08 10:55 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **360** | mg/kg | 5.1 | 0.30 | 1 | 11/03/00 14:30 | 11/06/08 18:15 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.3** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: PLOT 7-4** **Lab ID: 4010895034** Collected: 10/28/08 11:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **769** | mg/kg | 4.4 | 0.26 | 1 | 11/03/00 14:30 | 11/06/08 18:19 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.5** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: PLOT 7-5** **Lab ID: 4010895035** Collected: 10/28/08 11:05 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **880** | mg/kg | 4.6 | 0.27 | 1 | 11/03/00 14:30 | 11/06/08 18:23 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **78.2** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: TP2 UNDERPAIL 1** **Lab ID: 4010895036** Collected: 10/28/08 12:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **547** | mg/kg | 4.4 | 0.26 | 1 | 11/03/00 14:30 | 11/06/08 18:27 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **77.4** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## ANALYTICAL RESULTS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

**Sample: TP2 UNDERPAIL 2** **Lab ID: 4010895037** Collected: 10/28/08 12:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **815** | mg/kg | 4.1 | 0.24 | 1 | 11/03/00 14:30 | 11/06/08 18:31 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **75.6** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: TP4 UNDERPAIL 1** **Lab ID: 4010895038** Collected: 10/28/08 12:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **642** | mg/kg | 5.3 | 0.31 | 1 | 11/03/00 14:30 | 11/06/08 18:35 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **81.2** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:54 | | |

**Sample: TP4 UNDERPAIL 2** **Lab ID: 4010895039** Collected: 10/28/08 12:00 Received: 10/30/08 09:00 Matrix: Solid
***Results reported on a "dry-weight" basis***

| Parameters | Results | Units | LOQ | LOD | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|---|
| **6010 MET ICP** | Analytical Method: EPA 6010 Preparation Method: EPA 3050 | | | | | | | | |
| Arsenic | **773** | mg/kg | 5.2 | 0.31 | 1 | 11/03/00 14:30 | 11/06/08 18:46 | 7440-38-2 | |
| **Percent Moisture** | Analytical Method: ASTM D2974-87 | | | | | | | | |
| Percent Moisture | **80.9** | % | 0.10 | 0.10 | 1 | | 10/31/08 07:55 | | |





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1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

QC Batch: PMST/1991 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 4010895001, 4010895002, 4010895003, 4010895004, 4010895005, 4010895006, 4010895007, 4010895008, 4010895009, 4010895010

SAMPLE DUPLICATE: 95959

| Parameter | Units | 4010855002 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 14.2 | 14.7 | 4 | 10 | |



REPORT OF LABORATORY ANALYSIS





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1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

QC Batch: PMST/1992 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 4010895011, 4010895012, 4010895013, 4010895014, 4010895015, 4010895016, 4010895017, 4010895018, 4010895019, 4010895020, 4010895021, 4010895022, 4010895023, 4010895024, 4010895025, 4010895026, 4010895027, 4010895028, 4010895029, 4010895030

SAMPLE DUPLICATE: 95960

| Parameter | Units | 4010895011 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 80.8 | 81.0 | .3 | 10 | |

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## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

QC Batch: PMST/1993 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 4010895031, 4010895032, 4010895033, 4010895034, 4010895035, 4010895036, 4010895037, 4010895038, 4010895039

SAMPLE DUPLICATE: 95961

| Parameter | Units | 4010895031 Result | Dup Result | RPD | Max RPD | Qualifiers |
|---|---|---|---|---|---|---|
| Percent Moisture | % | 79.0 | 78.6 | .5 | 10 | |



REPORT OF LABORATORY ANALYSIS





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

QC Batch: MPRP/1936 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 4010895001, 4010895002, 4010895003, 4010895004, 4010895005, 4010895006, 4010895007, 4010895008, 4010895009, 4010895010, 4010895011, 4010895012, 4010895013, 4010895014, 4010895015, 4010895016, 4010895017, 4010895018, 4010895019, 4010895020

METHOD BLANK: 96728 Matrix: Solid
Associated Lab Samples: 4010895001, 4010895002, 4010895003, 4010895004, 4010895005, 4010895006, 4010895007, 4010895008, 4010895009, 4010895010, 4010895011, 4010895012, 4010895013, 4010895014, 4010895015, 4010895016, 4010895017, 4010895018, 4010895019, 4010895020

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 11/03/08 21:00 | |

LABORATORY CONTROL SAMPLE: 96729

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 25.7 | 103 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 96730 96731

| Parameter | Units | 4010895001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 406 | 113 | 113 | 522 | 533 | 102 | 113 | 75-125 | 2 | 20 | |



REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Green Bay, WI 54302
(920)469-2436

## QUALITY CONTROL DATA

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

QC Batch: MPRP/1937 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 4010895021, 4010895022, 4010895023, 4010895024, 4010895025, 4010895026, 4010895027, 4010895028, 4010895029, 4010895030, 4010895031, 4010895032, 4010895033, 4010895034, 4010895035, 4010895036, 4010895037, 4010895038, 4010895039

METHOD BLANK: 96770 Matrix: Solid
Associated Lab Samples: 4010895021, 4010895022, 4010895023, 4010895024, 4010895025, 4010895026, 4010895027, 4010895028, 4010895029, 4010895030, 4010895031, 4010895032, 4010895033, 4010895034, 4010895035, 4010895036, 4010895037, 4010895038, 4010895039

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Arsenic | mg/kg | <0.059 | 1.0 | 11/06/08 16:56 | |

LABORATORY CONTROL SAMPLE: 96771

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 25 | 26.0 | 104 | 80-120 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 96772 96773

| Parameter | Units | 4010895021 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 791 | 130 | 130 | 1010 | 905 | 167 | 88 | 75-125 | 11 | 20 | P6 |





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Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

## QUALIFIERS

Project: 7201.09 WDNR KEWAUNEE
Pace Project No.: 4010895

**DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

**ANALYTE QUALIFIERS**

| | |
|---|---|
| P6 | Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level. |





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# Sample Condition Upon Receipt

Pace Analytical

Client Name: RUT

Project # 4010895

**Courier:** ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Commercial ☐ Pace Other _____

**Tracking #:** _____

Optional
Proj. Due Date:
Proj. Name:

**Custody Seal on Cooler/Box Present:** ☐ yes ☒ no Seals intact: ☐ yes ☐ no

**Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other Ziplac bags

**Thermometer Used** NA **Type of Ice:** (Wet) Blue None ☐ Samples on ice, cooling process has begun

**Cooler Temperature** R01 **Biological Tissue is Frozen:** Yes No

**Date and Initials of person examining contents:** a 10/30/08

Temp should be above freezing to 6°C

| | | Comments: |
|---|---|---|
| Chain of Custody Present: | ☑Yes ☐No ☐N/A | 1. |
| Chain of Custody Filled Out: | ☑Yes ☐No ☐N/A | 2. |
| Chain of Custody Relinquished: | ☑Yes ☐No ☐N/A | 3. |
| Sampler Name & Signature on COC: | ☑Yes ☐No ☐N/A | 4. |
| Samples Arrived within Hold Time: | ☑Yes ☐No ☐N/A | 5. |
| **Short Hold Time Analysis (<72hr):** | ☐Yes ☑No ☐N/A | 6. |
| **Rush Turn Around Time Requested:** | ☐Yes ☑No ☐N/A | 7. |
| Sufficient Volume: | ☑Yes ☐No ☐N/A | 8. |
| Correct Containers Used: | ☑Yes ☐No ☐N/A | 9. |
| -Pace Containers Used: | ☑Yes ☐No ☐N/A | |
| Containers Intact: | ☑Yes ☐No ☐N/A | 10. |
| Filtered volume received for Dissolved tests | ☐Yes ☐No ☑N/A | 11. |
| Sample Labels match COC: | ☑Yes ☐No ☐N/A | 12. |
| -Includes date/time/ID/Analysis Matrix: S | | |
| All containers needing preservation have been checked. | ☐Yes ☐No ☑N/A | 13. |
| All containers needing preservation are found to be in compliance with EPA recommendation. | ☐Yes ☐No ☐N/A | |
| exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) | ☐Yes ☐No | Initial when completed / Lot # of added preservative |
| Samples checked for dechlorination: | ☐Yes ☐No ☑N/A | 14. |
| Headspace in VOA Vials ( >6mm): | ☐Yes ☐No ☑N/A | 15. |
| Trip Blank Present: | ☐Yes ☑No ☐N/A | 16. |
| Trip Blank Custody Seals Present | ☐Yes ☐No ☐N/A | |
| Pace Trip Blank Lot # (if purchased): _____ | | |

**Client Notification/ Resolution:** Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

**Project Manager Review:** _____ **Date:** 10/30/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)

# CHAIN OF CUSTODY RECORD

№ 063581

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 7201.09 | Project/Client: WDNR Kewaunee

Project Manager/Contact Person: Dick Fisk

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As | Filtered (Yes/No) | Preserved (Code) | | | | | | Comments: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | N | A | | | | | | |
| 101 | 10/28 | 10:10AM | Plot 1-1 001 | 1 | S | X | | | | 1- | N | | | Please homogenize |
| 102 | " | 10:15 | 1-2 002 | " | " | " | | | | " | " | | | Samples before |
| 103 | " | 10:20 | 1-3 003 | " | " | " | | | | " | " | | | analysis |
| 104 | " | 10:25 | 1-4 004 | " | " | " | | | | " | " | | | |
| 105 | " | 10:30 | 1-5 005 | " | " | " | | | | " | " | | | |
| 201 | " | 11:20 | 2-1 006 | " | " | " | | | | " | " | | | |
| 202 | " | 11:25 | 2-2 007 | " | " | " | | | | " | " | | | |
| 203 | " | 11:30 | 2-3 008 | " | " | " | | | | " | " | | | |
| 204 | " | 11:35 | 2-4 009 | " | " | " | | | | " | " | | | |
| 205 | V | 11:40 | V 2-5 010 | V | V | V | | | | V | V | | | 4010895 |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS

| | | | |
|---|---|---|---|
| SAMPLER Relinquished by (Sig.) T. Fisk | Date/Time 1:30PM 10/28/08 | Received by (Sig.) D. Fisk | Date/Time 10/29/08 1415 |
| Relinquished by (Sig.) D. Fisk | Date/Time 10/29/08 1700 | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) WAECO | Date/Time 10/30/08 900 | Received by (Sig.) | Date/Time 10/30/08 900 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☑ Highly Toxic
- ☐ Other (list)

Turn Around (circle one) (Normal) Rush

Report Due

(For Lab Use Only)

Receipt Temp: Receipt pH

Temp Blank (Y) N (Wet/Metals)

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

101

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

No 063582

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No: 7201.09

Project/Client: WDNR Kewaunee

Project Manager/Contact Person: Dick Fish

| Lab No. | Yr 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total Hg | Filtered (Yes/No) | Preserved (Code) | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | N | A | |
| 301 | 9/28 | 11:45 AM | Plot 3-1 011 | 1 | S | X | | | 1-2 p |
| 302 | \| | 11:50 | \| 3-2 012 | \| | \| | \| | | | \| |
| 303 | \| | 11:55 | \| 3-3 013 | \| | \| | \| | | | \| |
| 304 | \| | 12:00 | \| 3-4 014 | \| | \| | \| | | | \| |
| 305 | \| | 12:05 | \| 3-5 015 | \| | \| | \| | | | \| |
| 401 | \| | 12:10 | \| 4-1 016 | \| | \| | \| | | | \| |
| 402 | \| | 12:15 | \| 4-2 017 | \| | \| | \| | | | \| |
| 423 | \| | 12:20 | \| 4-3 018 | \| | \| | \| | | | \| |
| 404 | \| | 12:25 | \| 4-4 019 | \| | \| | \| | | | \| |
| 405 | V | 12:30 | V 4-5 020 | V | V | V | | | V | | |

SPECIAL INSTRUCTIONS: Please homogenize samples before analysis 4010895

| | | | |
|---|---|---|---|
| SAMPLER Relinquished by (Sig.) | Date/Time 10/28/08 5:30pm | Received by (Sig.) D. Fish | Date/Time 10/29/08 1415 |
| Relinquished by (Sig.) D Fish | Date/Time 10/29/08 1700 | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one): (Normal) Rush

Report Due

(For Lab Use Only)

Receipt Temp:

Temp Blank: (Y) N

Receipt pH (Wet/Metals)

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063583

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No. 72019 | Project/Client: WDNR Kewaunee

Project Manager/Contact Person: Dick Fish

| Lab No. | Yr. 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total As | Comments: |
|---|---|---|---|---|---|---|---|
| 501 | 10/28 | 12:35 PM | Plot 5-1 021 | 1 | S | X | 1 Zip |
| 502 | " | 12:40 | 5-2 022 | " | " | " | " |
| 503 | " | 12:45 | 5-3 023 | " | " | " | " |
| 504 | " | 12:50 | 5-4 024 | " | " | " | " |
| 505 | " | 12:55 | 5-5 025 | " | " | " | " |
| 601 | " | 10:30 AM | 6-1 026 | " | " | " | " |
| 602 | " | 10:35 | 6-2 027 | " | " | " | " |
| 603 | " | 10:40 | 6-3 028 | " | " | " | " |
| 604 | " | 10:45 | 6-4 029 | " | " | " | " |
| 605 | " | 10:50 | 6-5 030 | " | " | " | " |

Filtered (Yes/No)

Preserved (Code)

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G -

SPECIAL INSTRUCTIONS: Please homogenize samples 4010895

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| | 10/28/08 5:30PM | D. Fenn | 10/29/08 1415 |
| Relinquished by (Sig.) D. Fenn | Date/Time 10/29/08 1415 | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) Walker | Date/Time 10/30/08 0900 | Received by (Sig.) | Date/Time 10/30/08 1000 |

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list)

Turn Around (circle one) (Normal) Rush

Report Due

(For Lab Use Only)

Receipt Temp: Receipt pH

Temp Blank (Y) N (Wet/Metals)

F-268 (R6/95)

WHITE - LABORATORY COPY YELLOW - REPORT APPENDIX PINK - SAMPLER/SUBMITTER

# CHAIN OF CUSTODY RECORD

№ 063584

RMT

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No: 7201.09 | Project/Client: WDNR Kewaunee

Project Manager/Contact Person: Dick Fisk

| Lab No. | Yr 08 Date | Time | Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Total PCBs | Filtered (Yes/No) | Preserved (Code) | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| 701 | 10/28 | 10:45 | Plot 7-1 031 | 1 | S | X | N | A | 1-2 jar |
| 702 | " | 10:50 | " 7-2 032 | " | " | " | " | " | " |
| 703 | " | 10:55 | " 7-3 033 | " | " | " | " | " | " |
| 704 | " | 11:00 | " 7-4 034 | " | " | " | " | " | " |
| 705 | " | 11:05 | " 7-5 035 | " | " | " | " | " | " |
| 801 | " | 12:00 | TP 2 Under pail 1 036 | " | " | " | " | " | " |
| 802 | " | " | TP 2 Under pail 2 037 | " | " | " | " | " | " |
| 803 | " | " | TP 4 Under pail 1 038 | " | " | " | " | " | " |
| 804 | " | " | TP 4 Under pail 2 039 | " | " | " | " | " | " |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS: Homogenize Samples before analysis

4010895

| | | | |
|---|---|---|---|
| SAMPLER Relinquished by (Sig.) | Date/Time 12/28/05 5:30 PM | Received by (Sig.) D. Fisk | Date/Time 10/29/05 7:15 |
| Relinquished by (Sig.) D. Fisk | Date/Time 10/29/05 7:00 | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) UNKNOWN | Date/Time 10/30/05 9:00 | Received by (Sig.) | Date/Time 01/10/06 9:00 |

HAZARDS ASSOCIATED WITH SAMPLES
- ☐ Flammable
- ☐ Corrosive
- ☐ Highly Toxic
- ☐ Other (list) _____

Turn Around (circle one): (Normal) Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: _____ Receipt pH (Wet/Metals) _____

Temp Blank (Y) N

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

F-268 (R6/95)

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WOHL Wisconsin Occupational Health Laboratory

Mail:
P.O. Box 7996
Madison, WI 53707-7996
Phone: (800) 446-0403

Packages:
2601 Agriculture Dr.
Madison, WI 53718
Fax: (608) 224-6213

Wisconsin State Laboratory of Hygiene

University of Wisconsin

# Analytical Laboratory Report

**July 31, 2008**

Report ID: 9121968

BOB STANFORTH
RMT
PO BOX 8923
MADISON WI 53708-8923

Company Number: 41

**BOB STANFORTH**

**PROJ # 7201.09**

| | |
|---|---|
| Date Received: | 7/18/2008 |
| Date of Analysis: | 7/25/2008 |
| Date Reported: | 7/31/2008 |

Analyst: _____

**ROGER W SCHULTZ, Senior Chemist**
rws@mail.slh.wisc.edu

Reviewer: _____

**STEVE STREBEL, Organic Supervisor**
ss@mail.slh.wisc.edu

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These signatures are as valid as original handwritten signatures.
If you have any questions regarding this report please feel free to contact the laboratory via email (as listed above) or via telephone at 800-446-0403

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# Analytical Results

| LAB NUMBER / FIELD NUMBER | DESCRIPTION | AIR VOLUME |
|---|---|---|
| 1339813 | TUBE | liters |
| TUBE | | |
| Arsine | <0.0060 µg/sample | |

Displayed values on report have been rounded; however all calculations are performed using raw, unrounded intermediate results. Please contact the laboratory if you have any questions regarding our result calculation or rounding. All samples were received by the laboratory in acceptable condition unless otherwise noted.

<: Less Than. The analyte, if present, is at a level too low to be accurately quantitated by the method used. The actual amount is less than the reported value.

# Analytical Methodology

**ARSINE: AsH3:**
Samples are analyzed by WOHL in-house method WM011.2.0, based on NIOSH S229 and NIOSH 6001 for Arsine.

Air samples are collected on charcoal tubes to trap the arsine vapor. The charcoal is transfered to a test tube and desorbed with .01M Nitric acid. The sample is analyzed using Atomic Absorption Stabilized Temperature Platform Graphite Furnace.

Results are expressed as milligrams per cubic meter of air if the air collection volume was provided: otherwise, as micrograms per tube. Results are not blank corrected unless otherwise noted in the comments section of the report.

Limit of Detection: .002 ug/sample
Limit of Quantitation: .006 ug/sample
This value is based upon a total digestion volume of 2 ml.

REPORTING LIMITS:

This table contains the WOHL determined reporting limits for the compounds specified in this report. These numbers are based on the historical statistical data for a particular analyte or are based on WOHL determined values.

| Analyte | Reporting Limit |
|---|---|
| Arsine on TUBE | 0.006 µg/sample |

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# Analytical Quality Control

Laboratory prepared quality control (QC) samples were analyzed along with the samples included in the analytical report. The analysis results for these QC samples are listed below.

Instrument Used for Analysis: Perkin Elmer AA Spectrophotometer

## Laboratory Control Sample: 130669

QC Sample Media: MCEF filter

| Analyte | Target Value | Recovery (%) | Acceptable Recovery (%) | Pass/Fail |
|---|---|---|---|---|
| Arsenic and compounds | 1.02 µg/filter | 97.4 | 67 - 133 | PASS |

## Laboratory Control Sample: 130670

QC Sample Media: MCEF filter

| Analyte | Target Value | Recovery (%) | Acceptable Recovery (%) | Pass/Fail |
|---|---|---|---|---|
| Arsenic and compounds | 1.5 µg/filter | 97.9 | 67 - 133 | PASS |

The acceptable range for an analyte is based on the standard deviation of each analyte, which has been determined from statistical evaluation of the historical performance of the assay. The acceptable range includes up to 3 standard deviations, so a result within 3 standard deviations is considered to have passed the QC requirements. A result outside of the acceptable range is considered to have failed QC and may indicate the direction of possible bias for the samples included in the analytical report. The analytes used for QC determination will not always be the same analytes that appear in the samples for the report, however they are representative of the compounds found in the samples and indicative of overall assay performance.

# End of Analytical Report

The results in this report apply only to the samples, specifically listed above, tested at the Wisconsin Occupational Health Laboratory . This report is not to be reproduced except in full.

July 17, 2008

#41

Steve Strabel
Wisconsin State Lab of Hygiene
2601 Agriculture Drive
Madison, WI 53718

Kewaunee Plot 5

Steve:

1339813

Please run the enclosed tube for arsine gas. 307 mL of gas were passed through the tube. Unfortunately, I have no idea how much arsine may be present (hence the large tube) – it may be below detection or it may be quite a bit.

If you could, please note the project number of 7201.09 on the invoice, and send the invoice to me.

Let me know if there are any questions or problems.

Thanks.

Sincerely

Bob Stanforth
RMT Inc
744 Heartland Trail
Madison, WI 53717-1934

Tel: 662-5310

JUL 18 2008

DOCUMENT5 07/17/08

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University of Wisconsin

# Analytical Laboratory Report

**August 08, 2008**

Report ID: 9125310

KENT MCCORD
RMT
744 HEARTLAND TRL
MADISON WI 53717

Company Number: 41

**PROJ 7201.09**

**KEWAUNEE MARSH**

| | |
|---|---|
| Date Collected: | 7/29/2008 |
| Date Received: | 7/31/2008 |
| Date of Analysis: | 8/1/2008 |
| Date Reported: | 8/8/2008 |

Analyst: Roger Schultz

**ROGER W SCHULTZ, Senior Chemist**
rws@mail.slh.wisc.edu

Reviewer: D. Kennedy Parker

**DEWAYNE R KENNEDY-PARKER, Chemist Supervisor**
fess@mail.slh.wisc.edu

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# Analytical Results

| LAB NUMBER / FIELD NUMBER | DESCRIPTION | | | AIR VOLUME |
|---|---|---|---|---|
| 1341986 | TUBE | | | 0.708 liters |
| PLOT#2 | | | | |
| Arsine | | 0.0082 µg/sample | 0.012 mg/m³ | |
| 1341987 | TUBE | | | 0.324 liters |
| PLOT#3 | | | | |
| Arsine | | <0.0060 µg/sample | <0.019 mg/m³ | |
| 1341988 | TUBE | | | 0.223 liters |
| PLOT#4 | | | | |
| Arsine | | <0.0060 µg/sample | <0.027 mg/m³ | |
| 1341989 | TUBE | | | 0.452 liters |
| PLOT#7 | | | | |
| Arsine | | 0.0063 µg/sample | 0.014 mg/m³ | |

COMMENTS: Back result reported. Back result greater than front result indicating possible breakthrough and sample loss.

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< : Less Than. The analyte, if present, is at a level too low to be accurately quantitated by the method used. The actual amount is less than the reported value.

# Analytical Methodology

**ARSINE: AsH3:**

Samples are analyzed by WOHL in-house method WM011.2.0, based on NIOSH S229 and NIOSH 6001 for Arsine.

Air samples are collected on charcoal tubes to trap the arsine vapor. The charcoal is transfered to a test tube and desorbed with .01M Nitric acid. The sample is analyzed using Atomic Absorption Stabilized Temperature Platform Graphite Furnace.

Results are expressed as milligrams per cubic meter of air if the air collection volume was provided: otherwise, as micrograms per tube. Results are not blank corrected unless otherwise noted in the comments section of the report.

Reporting Limit: .006 ug/sample
This value is based upon a total digestion volume of 2 ml.

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REPORTING LIMITS:

This table contains the WOHL determined reporting limits for the compounds specified in this report. These numbers are based on the historical statistical data for a particular analyte or are based on WOHL determined values.

| Analyte | Reporting Limit |
|---|---|
| Arsine on TUBE | 0.006 µg/sample |

# Analytical Quality Control

Laboratory prepared quality control (QC) samples were analyzed along with the samples included in the analytical report. The analysis results for these QC samples are listed below.

Instrument Used for Analysis: Perkin Elmer AA Spectrophotometer

## Laboratory Control Sample: 130671

QC Sample Media: MCEF filter

| Analyte | Target Value | Recovery (%) | Acceptable Recovery (%) | Pass/Fail |
|---|---|---|---|---|
| Arsenic and compounds | 1.2 µg/filter | 95.8 | 67 - 133 | PASS |

## Laboratory Control Sample: 130672

QC Sample Media: MCEF filter

| Analyte | Target Value | Recovery (%) | Acceptable Recovery (%) | Pass/Fail |
|---|---|---|---|---|
| Arsenic and compounds | 1.63 µg/filter | 100.6 | 67 - 133 | PASS |

The acceptable range for an analyte is based on the standard deviation of each analyte, which has been determined from statistical evaluation of the historical performance of the assay. The acceptable range includes up to 3 standard deviations, so a result within 3 standard deviations is considered to have passed the QC requirements. A result outside of the acceptable range is considered to have failed QC and may indicate the direction of possible bias for the samples included in the analytical report. The analytes used for QC determination will not always be the same analytes that appear in the samples for the report, however they are representative of the compounds found in the samples and indicative of overall assay performance.

# End of Analytical Report

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#41

# CHAIN OF CUSTODY RECORD

№ 063550

744 Heartland Trail, P.O. Box 8923 • Madison, WI 53708-8923 • Phone (608) 831-4444 • FAX (608) 831-3334

Project No: 7201.09 | Project/Client: Kewaunee Marsh

Project Manager/Contact Person: Dick Fish / Kent McCord (608)662-5362

| Lab No. | Yr. 08 Date | Time | M dmr Sample Station ID | Total Number Of Containers | MATRIX | Analyses Requested: Arsine (NIOSH 6001) | Filtered (Yes/No) | Preserved (Code) | Comments: |
|---|---|---|---|---|---|---|---|---|---|
| | 7/29 | 10:00AM | Plot # 2 1341986 | 1 | Charcoal tube | X | N | A | mL gas passed through tube: 708 |
| | " | 10:10AM | Plot # 3 1341987 | 1 | " | X | | | 324 mL |
| | " | 10:15AM | Plot #4 1341988 | 1 | " | X | | | 223 mL |
| | " | 10:25AM | Plot #7 1341989 | 1 | " | X | | | 452 mL |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

PRESERVED CODES
A - NONE
B - $HNO_3$
C - $H_2SO_4$
D - NaOH
E - HCl
F - METHANOL
G - _____

SPECIAL INSTRUCTIONS: Please call Kent McCord @ 608 662-5362. Use NIOSH Method 6001. Please bill to RMT project # 7201.09. Please also email results to Kent.McCord@RMTInc.com

| SAMPLER Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
|---|---|---|---|
| [signature] | | [signature] | 7/29/09 |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |
| Relinquished by (Sig.) | Date/Time | Received by (Sig.) | Date/Time |

HAZARDS ASSOCIATED WITH SAMPLES
- [ ] Flammable
- [ ] Corrosive
- [ ] Highly Toxic
- [ ] Other (list) _____

Turn Around (circle one): (Normal) Rush

Report Due _____

(For Lab Use Only)

Receipt Temp: | Receipt pH (Wet/Metals)

Temp Blank Y N

Custody Seal: Present/Absent Intact/Not Intact Seal #'s

mL / mL

F-268 (R6/95)

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# Appendix C
# Photographic Logs

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# Photographic Log

| Mechanical Removal | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 1 | 6/24/08 |

**Description**

Test Plots 2 - 5
Vegetation had just been removed.

| Photo No. | Date |
|---|---|
| 2 | 6/24/08 |

**Description**

Test Plots 2 - 5
Removed cattails were placed as mulch on test plots to cover bare ground.

RMT

# Photographic Log

| Mechanical Removal | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 3 | 7/29/08 |

**Description**

Test Plots 2 - 5
Vegetative growth in test plots.

| Photo No. | Date |
|---|---|
| 4 | 8/26/08 |

**Description**

Test Plots 2 - 5
Vegetative growth in test plots.

RMT

# Photographic Log

| Mechanical Removal | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 5 | 9/31/08 |

**Description**

Test Plots 2 - 5
Vegetative growth in test plots.

| Photo No. | Date |
|---|---|
| 6 | 10/28/08 |

**Description**

Test Plots 2 - 5
Vegetative growth in test plots.

RMT

# Photographic Log

| Herbicide Application | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 1 | 6/24/08 |

**Description**

Cattail growth before herbicide application.

| Photo No. | Date |
|---|---|
| 2 | 7/29/08 |

**Description**

Cattail growth 1 month after herbicide application.

RMT

# Photographic Log

| Herbicide Application | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 3 | 8/26/08 |

**Description**

Cattail growth 2 months after herbicide application.

| Photo No. | Date |
|---|---|
| 4 | 9/30/08 |

**Description**

Cattail growth 3 months after herbicide application.

RMT

# Photographic Log

| Herbicide Application | | |
|---|---|---|
| **Client Name**<br>Wisconsin Department of Natural Resources | **Site Location**<br>Kewaunee, Wisconsin | **Project No.**<br>7201.09 |

| Photo No. | Date |
|---|---|
| 5 | 10/28/08 |

**Description**

Cattail growth 4 months after herbicide application.