



**CONESTOGA-ROVERS  
& ASSOCIATES**

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January 22, 2015

Reference No. 086165-01-16

Mr. Phil Richard  
Wisconsin Department of Natural Resources  
875 S 4<sup>th</sup> Avenue  
Park Falls, Wisconsin 54552

Dear Phil:

Re: Monthly Status Report – December 2014  
Penta Wood Products Superfund Site  
Siren, Wisconsin

Conestoga-Rovers & Associates, Inc. (CRA) has prepared this monthly status report for the period of December 2014 for the Penta Wood Products Superfund Site (Site). The project budget and costs are summarized in Table 1. The Site plan is shown on Figure 1.

## **1. Progress Made This Reporting Period**

*Task 01 Routine groundwater extraction and treatment, LNAPL recovery and bioventing system operation, equipment maintenance and repair*

- The following tasks were completed as part of the routine remediation system operation, monitoring, and maintenance:
  - Maintaining operation of the remediation system at normal pumping rates as summarized in Table 2
  - Responding to system alarm conditions and restoring system operation
  - Backwashing the “pre-filter” carbon unit
  - Changing bag filters
  - Collecting compliance water samples and coordinating laboratory analyses as summarized in Table 3
  - Collecting water samples from the lead carbon unit effluent to evaluate carbon change-out timing as summarized in Table 3
  - Evaluating performance of the modified water treatment system operation
  - Cleaning and troubleshooting flow meters
  - Snowplowing the access road
  - Coordinating the annual inspection of the building fire extinguishers

Equal  
Employment Opportunity  
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REGISTERED COMPANY FOR  
**ISO 9001**  
ENGINEERING DESIGN



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January 22, 2015

Reference No. 086165-01-16

- 2 -

- Other work completed included:
  - Project management and coordination
  - Coordinating waste (filter cake) disposal
  - Submitting the spent carbon waste disposal profile
  - Submitting the Discharge Monitoring Report (DMR) for November 2014
  - Measuring groundwater and LNAPL levels in the unconfined extraction wells as summarized in Table 4
  - Manually recovering LNAPL as summarized in Table 4
  - Preparing and submitting semi-annual residential well sampling result letters to property owners
  - Procuring of a State of Wisconsin certified laboratory for pentachlorophenol analysis
  - Participating in the monthly project status conference call with WDNR and USEPA on December 8, 2014
  - Troubleshooting and repair of the building furnace
  - Developing a corrective action to address effluent pentachlorophenol concentrations and substantive WPDES permit requirements and participation in a conference call with WDNR on December 12, 2014
  - Reviewing the draft Five-Year Report drafted by USEPA
  - Reviewing project records to determine available soil data in preparation of a data summary and limits of soil contamination
  - Coordinating a building inspection and evaluation of building heating/ventilation system
- The groundwater extraction pumps in the semi-confined (lower level) extraction wells operated continuously during December 2014 with the exception of minor shutdowns during system maintenance tasks and one system alarm condition on December 12, 2014. The daily groundwater extraction volumes are summarized in Table 2 and are generally consistent with normal operations. The system was shutdown on December 23, 2014 pending the carbon change-out.
- LNAPL recovery was performed in the unconfined extraction wells containing LNAPL. LNAPL skimming pumps were utilized in two extraction wells (EW-6 and EW-10) containing significant amounts of LNAPL. Manual bailing was performed to recover LNAPL in the remaining extraction wells containing LNAPL (EW-5, EW-12, and EW-14). LNAPL was not detected in the remaining extraction wells (EW-4 and EW-13).

*Task 02 Waste characterization and coordination (groundwater, LNAPL, GAC, filter cake)*

- Filter cake and spent carbon disposal was coordinated.



January 22, 2015

Reference No. 086165-01-16

- 3 -

- No costs were billed to this Task 02 in the current invoice. The budget for this task only includes costs for waste characterization sampling, which was not conducted during this reporting period. Labor associated with waste disposal coordination was billed under Task 01, consistent with the project budget.

*Task 03 Waste disposal*

- On December 15, 2014, three dumpsters containing filter cake were transported offsite as hazardous waste for disposal at the Clean Harbors Lambton (Sarnia) Landfill located near Sarnia, Ontario under Profile No. CH81542B.
- No costs were billed to this Task 03 in the current invoice. The budget for this task only includes costs for the waste transportation and disposal, which will be included in a future invoice. Labor associated with overseeing and coordinating the waste disposal was billed under Task 01, consistent with the project budget.

*Task 04 Housekeeping and grounds keeping (building, access roads, paths, CAMU, etc.)*

- Housekeeping tasks were completed in the building on a weekly basis.

*Task 05 Monthly soil gas sampling and analysis (17 wells)*

- The biovent system was not operated in December 2014. The biovent system will remain off during the winter months, in accordance with normal protocol.

*Task 06 Treatment system influent sampling and analysis*

- The monthly influent sample was collected on December 2, 2014 for laboratory analysis of pentachlorophenol (PCP). The analytical data is summarized in Table 3. The laboratory report is included in Attachment A. Influent pentachlorophenol was detected at higher concentrations during December 2014 than during September through November 2014.
- Due to the incorrect pentachlorophenol concentration initially reported by the laboratory for the effluent sample collected on October 28, 2014 and the associated additional effort to address an apparent non-compliance of the substantive WPDES permit limit, the laboratory applied a credit for one pentachlorophenol analysis associated with TestAmerica Invoice No. 24160835. This credit reduced the Task 06 cost in this CRA invoice by \$94.50 and offset the November 2014 influent sample pentachlorophenol analysis cost included on this CRA invoice. Therefore, no costs were billed to this Task 06 in the current invoice. The



January 22, 2015

Reference No. 086165-01-16

- 4 -

laboratory analytical costs for the December 2014 sampling event will be included in a future invoice. Labor associated with the sampling is billed under Task 01, consistent with the project budget.

*Task 07 Treatment system effluent sampling and analysis (weekly, PCP)*

- The weekly effluent samples were collected on December 2, 10, 16, and 23, 2014 for laboratory analysis of PCP. The analytical data is summarized in Table 3. The data indicate that the system discharged water at concentrations slightly above the substantive WPDES permit limit for PCP. The laboratory reports are included in Attachment A.
- The current invoice includes laboratory analytical costs for November and December 2014 sampling events. Selected analyses were expedited at additional cost. Additional analyses to evaluate the timing of carbon change-out were performed at additional cost. Labor associated with the sampling is billed under Task 01, consistent with the project budget.
- Due to the incorrect pentachlorophenol concentration initially reported by the laboratory for the effluent sample collected on October 28, 2014 and the associated additional effort to address an apparent non-compliance of the substantive WPDES permit limit, the laboratory applied a credit for three pentachlorophenol analyses associated with TestAmerica Invoice Nos. 24160835, 24161402, 24161389. This credit reduced the Task 07 cost in this CRA invoice by \$297.68.

*Task 08 Treatment system effluent sampling and analysis (monthly, DRO & Naphthalene)*

- The monthly effluent sample was collected on December 2, 2014 for laboratory analysis of Wisconsin-Diesel Range Organics (WI-DRO) and naphthalene. The analytical data is summarized in Table 3. The data indicate that the system treated and discharged water in accordance with the substantive WPDES permit limits for naphthalene and WI-DRO. The laboratory report is included in Attachment A.
- Costs were billed to this Task 08 in this CRA invoice for the monthly effluent samples collected in November and December 2014. Labor associated with the sampling is billed under Task 01, consistent with the project budget.

*Task 09 Treatment system effluent sampling and analysis (quarterly, metals)*

- Not applicable.



**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 5 -

*Task 10 Treatment system effluent sampling and analysis (annually, BTEX, Phenol, Dioxin)*

- Not applicable.

*Task 11 Groundwater and LNAPL elevation measurement in all wells*

- Not applicable.

*Task 12 Purging, sampling, and analysis of all monitoring wells (annually for PCP, BTEX, Naphthalene, TAL metals, and NA indicator parameters)*

- Not applicable.

*Task 13 Purging, sampling, and analysis of five monitoring wells (semi-annually for PCP, BTEX, Naphthalene, TAL metals, and NA indicator parameters)*

- Not applicable.

*Task 14 Sampling of five private wells and onsite potable water well (semi-annually for PCP, BTEX and naphthalene)*

- Results of the October 2014 private/residential well sampling were issued to the property owners in letters dated December 3, 2014.
- The access agreement for sampling private/residential well RW-6 was signed by the property owner, Mr. David Wegner on December 12, 2014.
- No costs were billed to this Task 14 in the current invoice. Labor associated with these items was billed under Task 01, consistent with the project budget.

*Task 15 Semi-annual reporting*

- Portions of the semi-annual report (September through December 2014) were drafted for submittal during January 2015.

*Task 16 Monthly status reports*

- The Monthly Status Report – November 2014 was drafted for WDNR review and subsequently finalized and issued on January 5, 2015.



**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 6 -

*Task 17 Remedial system optimization/alternative remedial action analysis*

- Not applicable.

*Task 18 Regulatory communications*

- Not applicable.

*Task 19 Site Safety Plan*

- Not applicable.

*Task 20 Site QA/QC Plan*

- Not applicable.

*Task 21 Change Order No. 1*

- Not applicable.

## **2. Problems Resolved**

- Remediation system alarm conditions were resolved on December 12, 2014 and system operation was restored.
- ECCS was procured as a State of Wisconsin certified laboratory for pentachlorophenol analyses.
- The November 2014 Discharge Monitoring Report (DMR) was submitted on December 29, 2014 after the required date of December 21, 2014 following assistance by WDNR to address difficulties utilizing the WDNR Web Access Management System (WAMS).

## **3. Problem Areas and Recommended Solutions**

- The December 2014 monthly average pentachlorophenol concentration exceeded the substantive WPDES permit limit of 0.1 µg/L. WDNR and USEPA were promptly notified of the weekly compliance sample pentachlorophenol concentrations. A written report was



January 22, 2015

Reference No. 086165-01-16

- 7 -

submitted to WDNR and USEPA on December 8, 2014 discussing the November 2014 non-compliance, potential cause of the non-compliance, and a proposed corrective action. A conference call was held with WDNR on December 12, 2014 to discuss the effluent pentachlorophenol concentrations and a corrective action. WDNR agreed with the corrective action.

- Selected effluent samples collected on December 2 and 10, 2014 were filtered by the laboratory to evaluate whether small solid particles were contributing to the effluent pentachlorophenol concentrations and whether installation of a filter downstream of the carbon units may remove solid pentachlorophenol particles prior to discharge. Pentachlorophenol was detected in the filtered effluent samples at concentrations of 0.082 µg/L and 0.074 µg/L (estimated concentrations below the reporting limit). These concentrations indicate that some small solid particles were contributing to the effluent pentachlorophenol concentrations. However, dissolved pentachlorophenol still was present in the effluent.
- Pentachlorophenol was subsequently detected at a concentration of 75 µg/L in one sample collected between the lead and lag carbon units on December 16, 2014. This concentration represented a pentachlorophenol breakthrough of the lead carbon unit and indicated that the carbon required replacement. Therefore, CRA recommended that the carbon in the pre-filter and lead units be replaced. The system was shutdown on December 23, 2014 pending the carbon change-out.
- The pentachlorophenol analyses for the weekly effluent compliance samples during November 2014 were performed by TestAmerica Pittsburgh. During preparation of the October 2014 Discharge Monitoring Report, it was discovered that the previous Laboratory Certification No. 998027800 expired on August 31, 2014 (Wisconsin reciprocal certification with South Carolina) for pentachlorophenol analyses. The existing South Carolina certification remains valid until April 30, 2015. A certified laboratory (ECCS) was procured and analyzed the December 2014 compliance samples. An audit for TestAmerica Pittsburgh was completed in January 2015 to obtain Wisconsin certification. CRA recommends that compliance sample analyses be resumed by TestAmerica following certification.
- The building heating and ventilation system will be evaluated to assess alternatives for a more efficient system.



**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 8 -

#### **4. Deliverables Submitted**

- Monthly Status Report – November 2014 (January 5, 2014)
- Remediation System Water Treatment Discharge Non-Compliance (December 8, 2014)
- October 2014 Private Well Sampling Results (December 3, 2014)
- November 2014 Discharge Monitoring Report (December 30, 2014)

#### **5. Activities Planned Next Reporting Period**

- Replace the carbon in the pre-filter and lead units and adjust system piping valves to switch the lead and lag units in the process flow in accordance with standard operating procedures.
- Inspect the carbon vessels after spent carbon is removed and before new carbon is installed.
- Resume normal operate, monitoring, and maintenance of the groundwater and LNAPL extraction remediation system.
- Conduct WPDES permit compliance sampling to continue monitoring modified treatment system performance with the substantive WPDES permit requirements; evaluate and implement corrective actions to address effluent PCP concentrations, if necessary.
- Measure LNAPL thicknesses in the unconfined (upper level) extraction wells.
- Recover LNAPL using skimming pumps installed in extraction wells EW-6 and EW-10 on a bi-weekly basis. Recover LNAPL by manual bailing in the remaining extraction wells on a monthly basis.
- Prepare monthly status report.
- Participate in monthly status conference call.
- Submit monthly discharge monitoring report.
- Comment on the draft USEPA Five-Year Report.
- Evaluate the building heating and ventilation system.
- Pump the septic tank.
- Conduct the 8,000-hour maintenance on the air compressor.
- Provide a summary of soil data and extent of soil contamination for continuing obligations documentation.





**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 9 -

- Prepare a report/petition to shutdown operation of the remediation system and justify an Explanation of Significant Differences (ESD) or a Record of Decision (ROD) Amendment by USEPA.
- Update the Operation and Maintenance Plan.

## **6. Key Personnel Changes**

- Personnel changes were not necessary.

## **7. Subcontractor Services**

CRA has retained the following subcontractors to provide services at the Site:

- North Shore Environmental Construction, Inc. – waste management and disposal
- Maurer Power – potential remediation system electrical repair/service
- Evoqua Water Treatment Technologies LLC – carbon supply and change out
- Alar Chemical Sales – diatomaceous earth supply
- Applied Air Systems – air compressor routine service and potential repairs
- A-1 Septic – septic tank service
- Austin Lake Landscaping – mowing
- Republic Services – trash disposal
- Moritz's Lawn Care – snow plowing
- Vadose Remediation Technologies – absorbent polymer sheeting supply to line spent carbon sacks
- HC Building Inspection Services – building inspection to make heating system more efficient

## **8. Travel**

- To/from the Site for remediation system operation and modification



**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 10 -

## **9. Laboratories**

CRA submitted all samples in December 2014 to ECCS in Madison, Wisconsin for laboratory analyses of pentachlorophenol. CRA submitted all samples to TestAmerica Laboratories in North Canton, Ohio for laboratory analyses of naphthalene and WI-DRO.

## **10. Project Performance**

- With the exception of minor remediation system shutdowns for maintenance and alarm conditions, the daily groundwater extraction rates were generally consistent with normal operations.
- Approximately 33.0 gallons of LNAPL were recovered during December 2014. A total of approximately 59.3 gallons of LNAPL have been recovered since the system modification in October 2014.
- Compliance sampling indicated that the December 2014 monthly average pentachlorophenol effluent concentration slightly exceeded substantive WPDES discharge permit limit.



**CONESTOGA-ROVERS  
& ASSOCIATES**

January 22, 2015

Reference No. 086165-01-16

- 11 -

Should you have questions, please do not hesitate to contact us.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

A handwritten signature in black ink, appearing to read 'Tim Ree', with a stylized flourish at the end.

Tim Ree

TR/sb/10

Encl.

cc: Erin Endsley, WDNR Superior (via email)  
Judy Fassbender, WDNR Madison (via email)  
David Swimm, WDNR Madison (via email)  
John Robinson, WDNR Wausau (via email)  
Gary Edelstein, WDNR Madison (via email)  
Tim Panzer, WDNR Madison (via email)  
Ron Frehner, CRA (via email)  
Brian Sandberg, CRA (via email)  
Pete Storlie, CRA (via email)  
Linda Martin, USEPA (via email)

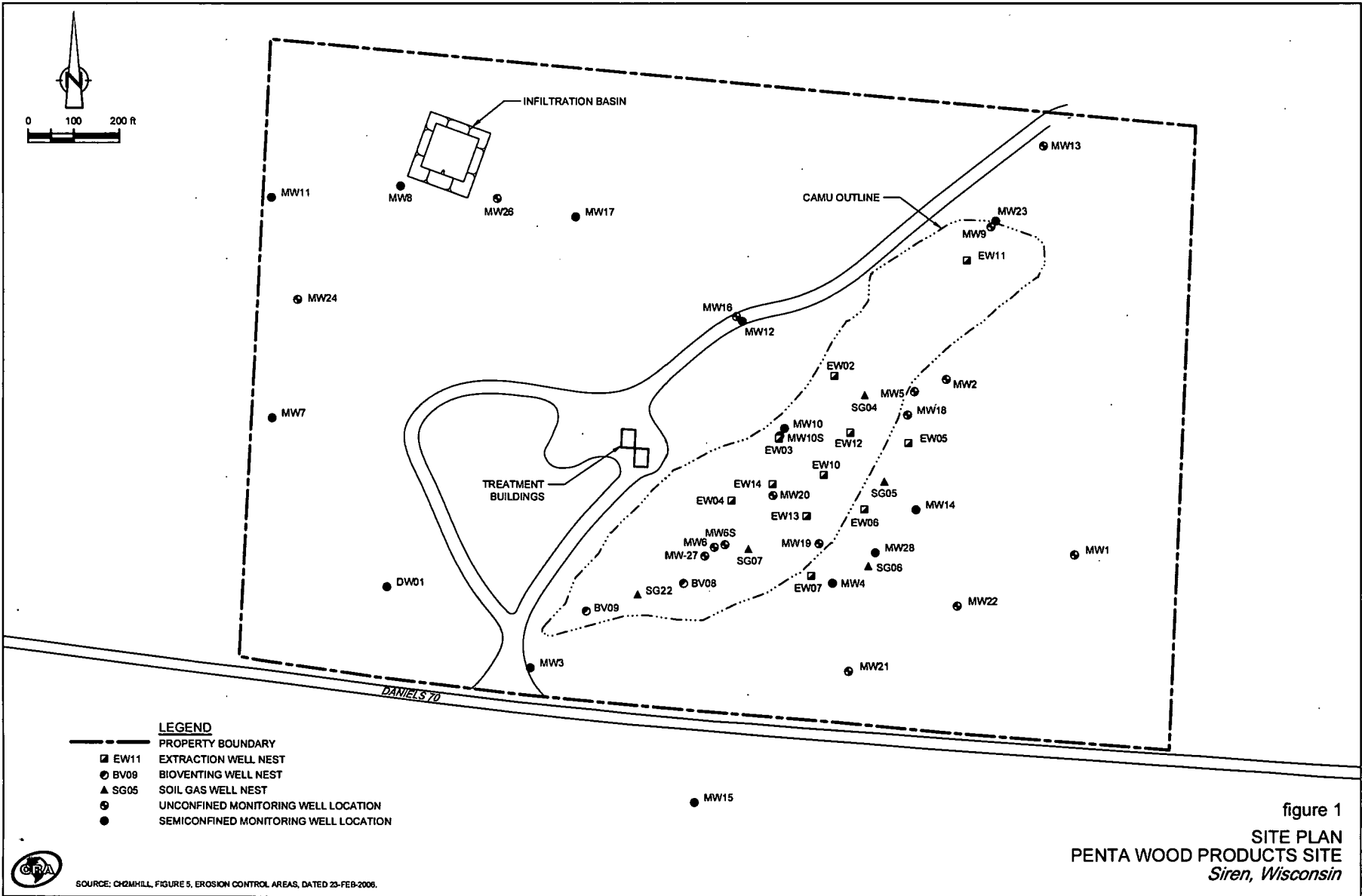


TABLE 1

**CONTRACT BUDGET SUMMARY  
PENTA WOOD PRODUCTS SUPERFUND SITE  
SIREN, WISCONSIN**

CRA Project Number 086165  
Phase 01 - August 1, 2014 - July 31, 2015

Task	Description	Unit	Contract Budget			Project Costs			
			Estimated Quantity	Unit Cost	Budget	Current Invoice Cost (through 12/28/2014)	Previous Invoiced Cost (through 11/30/2014)	Total Invoiced Cost (through 12/28/2014)	Budget Remaining (through 12/28/2014)
01	Routine O&M <sup>7,8</sup>	Labor hours/rate Estimated material equipment and rental costs and travel	1	\$ 444,802.00	\$ 444,802.00	\$ 31,983.91	\$ 130,613.12	\$ 162,597.03	\$ 282,204.97
02	Waste characterization	Labor hours/rate Estimated material equipment and rental costs and travel	1	\$ 10,500.00	\$ 10,500.00	\$ -	\$ -	\$ -	\$ 10,500.00
03	Waste disposal	Costs plus markup	1	\$ 287,069.00	\$ 287,069.00	\$ -	\$ -	\$ -	\$ 287,069.00
04	Housekeeping and grounds keeping	Labor hours/rate Estimated material equipment and rental costs and travel	1	\$ 13,088.00	\$ 13,088.00	\$ 357.75	\$ 954.00	\$ 1,311.75	\$ 11,776.25
05	Monthly soil gas monitoring <sup>1</sup>	Each round	6	\$ 150.00	\$ 900.00	\$ -	\$ 1,098.21	\$ 1,098.21	\$ (198.21)
06	Treat syst inf (PCP) <sup>6</sup>	Each round	12	\$ 104.50	\$ 1,254.00	\$ -	\$ 189.00	\$ 189.00	\$ 1,065.00
07	Treat syst eff (PCP) <sup>2,6</sup>	Each round	52	\$ 184.50	\$ 9,594.00	\$ 1,664.52	\$ 1,953.33	\$ 3,617.85	\$ -5,976.15
08	Treat syst eff (DRO, Naph)	Each round	12	\$ 139.00	\$ 1,668.00	\$ 252.00	\$ 252.00	\$ 504.00	\$ 1,164.00
09	Treat syst eff (metals) <sup>3</sup>	Each round	4	\$ 58.00	\$ 232.00	\$ -	\$ 64.05	\$ 64.05	\$ 167.95
10	Treat syst eff (BTEX, Phen, Diox)	Each round	1	\$ 571.00	\$ 571.00	\$ -	\$ -	\$ -	\$ 571.00
11	Semi-annual GW/LNAPL level monit	Each round	2	\$ 435.00	\$ 870.00	\$ -	\$ 437.25	\$ 437.25	\$ 432.75
12	Annual GW well samp	Each round	1	\$ 15,871.00	\$ 15,871.00	\$ -	\$ 14,701.96	\$ 14,701.96	\$ 1,169.04
13	Semi-annual GW well samp	Each round	1	\$ 5,920.00	\$ 5,920.00	\$ -	\$ -	\$ -	\$ 5,920.00

**TABLE 1**  
**CONTRACT BUDGET SUMMARY**  
**PENTA WOOD PRODUCTS SUPERFUND SITE**  
**SIREN, WISCONSIN**

**CRA Project Number 086165**  
**Phase 01 - August 1, 2014 - July 31, 2015**

Task	Description	Unit	Contract Budget			Project Costs			
			Estimated Quantity	Unit Cost	Budget	Current Invoice Cost	Previous Invoiced Cost	Total Invoiced Cost	Budget Remaining
14	Annual residential well samp <sup>4</sup>	Each round	1	\$ 2,142.00	\$ 2,142.00	\$ -	\$ 2,677.66	\$ 2,677.66	\$ (535.66)
15	Semi-annual reporting	Each	2	\$ 8,345.00	\$ 16,690.00	\$ 1,882.95	\$ 919.00	\$ 2,801.95	\$ 13,888.05
16	Monthly status reports	Each	12	\$ 930.00	\$ 11,160.00	\$ 1,365.50	\$ 4,740.50	\$ 6,106.00	\$ 5,054.00
17	Remedial system analysis	Estimated cost not to exceed	1	\$ 39,650.00	\$ 39,650.00	\$ -	\$ 27,867.83	\$ 27,867.83	\$ 11,782.17
18	Regulatory communications	Pre-approved and determined by DNR	1	\$ 15,000.00	\$ 15,000.00	\$ -	\$ 6,731.55	\$ 6,731.55	\$ 8,268.45
19	Site Safety Plan	Estimated cost not to exceed	1	\$ 2,202.00	\$ 2,202.00	\$ -	\$ 2,043.44	\$ 2,043.44	\$ 158.56
20	Site QA/QC Plan	Estimated cost not to exceed	1	\$ 5,000.00	\$ 5,000.00	\$ -	\$ 4,867.75	\$ 4,867.75	\$ 132.25
21	Change Order No. 1	Estimated cost not to exceed	1	\$ 6,276.00	\$ 6,276.00	\$ -	\$ 3,276.17	\$ 3,276.17	\$ 2,999.83
<b>TOTAL<sup>5</sup></b>					<b>\$ 890,459.00</b>	<b>\$ 37,506.63</b>	<b>\$ 203,386.82</b>	<b>\$ 240,893.45</b>	<b>\$ 649,565.55</b>

**Note**

- <sup>1</sup> WDNR approved increase in task unit cost from \$150.00/month to \$600.00/month, resulting in an increase of task budget from \$900.00 to \$3,600.00. Change order not required.
- <sup>2</sup> WDNR approved increase in task unit cost by 15-percent for selected compliance samples to expedite pentachlorophenol analyses following the system modification and collecting periodic samples after the lead carbon unit to evaluate carbon change-out timing, resulting in an estimated increase of task budget by \$660.00. Change order not required.
- <sup>3</sup> WDNR approved increase in task unit cost from \$58.00 to \$70.00 to include quarterly chloride analyses required by the WPDES permit, resulting in an increase of task budget from \$232.00 to \$280.00. Change order not required.
- <sup>4</sup> WDNR approved change in scope from annual to semi-annual residential well sampling and increasing the residential well quantity from 5 wells to 6 wells, resulting in an increase of task budget from \$2,142.00 to \$5,140.80. Change order not required.
- <sup>5</sup> The total contract budget including WNDR approval of Change Order No. 1 is \$890,459.00. Additional costs detailed in Notes 1 through 4 above increase the contact budget to \$896,865.80.
- <sup>6</sup> WDNR notified of increase in task unit cost by \$110 per pentachlorophenol analysis due to having to utilize a different laboratory that is certified in the State of Wisconsin.
- <sup>7</sup> WDNR requested evaluation of building heating and ventilation system to determine potential ways to make the system more efficient. CRA estimated increase in task budget by \$2,200.00.
- <sup>8</sup> WDNR requested summary of soil data and limits of soil contamination figure be prepared for inclusion in continuing obligations documentation. CRA to estimate additional cost following determination of available site information/data.

TABLE 2

**GROUNDWATER EXTRACTION SUMMARY  
PENTA WOOD PRODUCTS SUPERFUND SITE  
SIREN, WISCONSIN**

<i>Date</i>	<i>Pumping Volume (gallons)</i>	<i>Average Daily Pumping Rate (gallons per minute)</i>	<i>Comments</i>
12/1/2014	73,420	51	
12/2/2014	69,256	48	
12/3/2014	74,644	52	
12/4/2014	73,825	51	
12/5/2014	74,029	51	
12/6/2014	75,063	52	
12/7/2014	73,279	51	
12/8/2014	70,365	49	
12/9/2014	74,009	51	
12/10/2014	75,768	53	
12/11/2014	75,147	52	
12/12/2014	65,768	46	Temporary system shutdown due to alarm condition
12/13/2014	76,030	53	
12/14/2014	75,827	53	
12/15/2014	75,802	53	
12/16/2014	72,206	50	
12/17/2014	73,465	51	
12/18/2014	75,214	52	
12/19/2014	77,106	54	
12/20/2014	74,882	52	
12/21/2014	72,433	50	
12/22/2014	67,499	47	
12/23/2014	42,089	29	System shutdown pending carbon change out
12/24/2014	0	0	
12/25/2014	0	0	
12/26/2014	0	0	
12/27/2014	0	0	
12/28/2014	0	0	
12/29/2014	0	0	
12/30/2014	0	0	
12/31/2014	0	0	

TABLE 3

**GROUNDWATER EXTRACTION SYSTEM INFLUENT AND EFFLUENT ANALYTICAL DATA  
PENTA WOOD PRODUCTS SUPERFUND SITE  
SIREN, WISCONSIN**

<i>Sample Date</i>	<i>Pentachlorophenol ug/L</i>	<i>Naphthalene ug/L</i>	<i>WI DRO (C10-C28) mg/L</i>
<b><i>Groundwater Influent Sample</i></b>			
12/2/2014	4600	NA	NA
12/16/2014	4300	NA	NA
<b><i>Groundwater Lead Carbon Unit Effluent Sample</i></b>			
12/16/2014	75	NA	NA
<b><i>Groundwater Effluent Sample</i></b>			
12/2/2014	0.35	< 0.20	< 0.096
12/10/2014	0.26	NA	NA
12/16/2014	0.21	NA	NA
12/23/2014	0.13	NA	NA
<b><i>Groundwater Effluent Sample - Filtered</i></b>			
12/2/2014	0.082 J.	NA	NA
12/10/2014	0.074 J.	NA	NA

**Notes:**

- ug/L - Concentrations listed with units of micrograms per liter
- mg/L - Concentrations listed with units of milligrams per liter
- < - Less than symbol indicates the analyte was not detected above the reporting limit
- WI DRO - Wisconsin Diesel Range Organics
- NA - Not analyzed
- J - Concentration is estimated; detected below the reporting limit



TABLE 4

**LNAPL THICKNESS AND RECOVERY SUMMARY  
PENTA WOOD PRODUCTS SUPERFUND SITE  
SIREN, WISCONSIN**

<i>Well ID</i>	<i>Date</i>	<i>Depth to Water (feet) <sup>1</sup></i>	<i>Depth to LNAPL (feet) <sup>1</sup></i>	<i>LNAPL Thickness (feet)</i>	<i>Recovered LNAPL Volume (gallons)</i>	<i>Comments</i>
EW-4	11/4/2014	114.30	NP	0.00	NA	
EW-4	12/11/2014	115.39	NP	0.00	NA	
EW-4	12/23/2014	115.34	NP	0.00	NA	
EW-4	12/30/2014	115.26	NP	0.00	NA	
Total LNAPL Recovered					0.0	
EW-5	11/4/2014	83.35	83.25	0.10	NA	
EW-5	11/6/2014	NM	NM	NM	<0.1	
EW-5	11/7/2014	91.51	91.44	0.07	NA	
EW-5	11/11/2014	91.75	91.56	0.19	NA	
EW-5	11/12/2014	91.65	91.48	0.17	NA	Temporary system shutdown due to alarm condition
EW-5	11/17/2014	91.64	91.51	0.13	NA	
EW-5	12/1/2014	91.58	91.46	0.12	NA	
EW-5	12/8/2014	91.55	91.51	0.04	NA	
EW-5	12/11/2014	91.65	91.52	0.13	NA	
EW-5	12/23/2014	91.40	91.39	0.01	NA	
EW-5	12/30/2014	91.37	91.36	0.01	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					<0.1	
EW-6	11/5/2014	111.22	98.06	13.16	12.0	
EW-6	11/12/2014	107.80	98.30	9.50	NA	Temporary system shutdown due to alarm condition
EW-6	11/17/2014	110.34	98.52	11.82	NA	
EW-6	11/24/2014	111.05	98.45	12.60	10.0	
EW-6	11/25/2014	105.63	98.55	7.08	NA	
EW-6	12/1/2014	108.60	98.53	10.07	NA	
EW-6	12/4/2014	109.35	98.48	10.87	NA	
EW-6	12/8/2014	101.90	97.89	4.01	NA	
EW-6	12/11/2014	111.91	98.01	13.90	NA	Measurements recorded prior to LNAPL removal
EW-6	12/11/2014	100.35	98.40	1.95	12.0	Measurements recorded immediately after LNAPL removal
EW-6	12/15/2014	108.40	98.01	10.39	NA	
EW-6	12/23/2014	109.35	98.01	11.34	NA	Measurements recorded prior to LNAPL removal
EW-6	12/23/2014	99.50	98.35	1.15	13.0	Measurements recorded immediately after LNAPL removal
EW-6	12/30/2014	98.59	97.83	0.76	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					47.0	
EW-10	11/4/2014	108.20	103.92	4.28	NA	
EW-10	11/5/2014	108.77	104.70	4.07	4.0	
EW-10	11/18/2014	107.60	104.35	3.25	NA	
EW-10	11/24/2014	107.45	103.94	3.51	NA	
EW-10	11/25/2014	107.50	103.91	3.59	NA	
EW-10	12/1/2014	107.30	104.14	3.16	NA	
EW-10	12/4/2014	107.33	104.11	3.22	NA	Measurements recorded prior to LNAPL removal
EW-10	12/4/2014	105.35	104.05	1.30	2.0	Measurements recorded immediately after LNAPL removal
EW-10	12/8/2014	104.29	103.17	1.12	NA	
EW-10	12/11/2014	106.95	104.05	2.90	NA	Measurements recorded prior to LNAPL removal
EW-10	12/11/2014	105.46	104.12	1.34	2.0	Measurements recorded immediately after LNAPL removal
EW-10	12/15/2014	106.68	104.00	2.68	NA	
EW-10	12/23/2014	107.25	103.91	3.34	NA	Measurements recorded prior to LNAPL removal
EW-10	12/23/2014	104.75	104.06	0.69	4.0	Measurements recorded immediately after LNAPL removal
EW-10	12/30/2014	104.59	103.00	1.59	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					12.0	

TABLE 4

**LNAPL THICKNESS AND RECOVERY SUMMARY  
PENTA WOOD PRODUCTS SUPERFUND SITE  
SIREN, WISCONSIN**

<i>Well ID</i>	<i>Date</i>	<i>Depth to Water (feet) <sup>1</sup></i>	<i>Depth to LNAPL (feet) <sup>1</sup></i>	<i>LNAPL Thickness (feet)</i>	<i>Recovered LNAPL Volume (gallons)</i>	<i>Comments</i>
EW-12	11/4/2014	105.26	105.04	0.22	NA	
EW-12	11/6/2014	NM	NM	NM	<0.1	
EW-12	11/7/2014	108.26	108.15	0.11	NA	
EW-12	11/11/2014	108.39	108.22	0.17	NA	
EW-12	11/12/2014	101.16	101.14	0.02	NA	Temporary system shutdown due to alarm condition
EW-12	11/17/2014	108.00	107.98	0.02	NA	
EW-12	12/8/2014	100.99	NP	0.00	NA	
EW-12	12/11/2014	108.98	108.97	0.01	NA	
EW-12	12/23/2014	109.75	NP	0.00	NA	
EW-12	12/30/2014	101.10	100.88	0.22	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					<0.1	
EW-13	11/4/2014	111.48	NP	0.00	NA	
EW-13	12/11/2014	114.81	NP	0.00	NA	
EW-13	12/23/2014	115.11	NP	0.00	NA	
EW-13	12/30/2014	107.34	NP	0.00	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					0.0	
EW-14	11/4/2014	112.55	112.45	0.10	NA	
EW-14	11/6/2014	NM	NM	NM	<0.1	
EW-14	11/7/2014	112.54	112.49	0.05	NA	
EW-14	11/11/2014	112.68	112.60	0.08	NA	
EW-14	11/12/2014	112.91	112.87	0.04	NA	Temporary system shutdown due to alarm condition
EW-14	11/17/2014	111.82	111.55	0.27	NA	
EW-14	12/8/2014	112.89	112.85	0.04	NA	
EW-14	12/11/2014	113.83	113.75	0.08	NA	
EW-14	12/23/2014	113.74	113.65	0.09	NA	
EW-14	12/30/2014	112.85	112.76	0.09	NA	System shutdown pending carbon change-out
Total LNAPL Recovered					<0.1	
Total LNAPL Recovered (all wells)					33.0	During December 2014
Total LNAPL Recovered (all wells)					59.3	Since system modification in October 2014

## Notes:

- 1** Depth to water and depth to LNAPL measurements before December 2014 were not consistently recorded from the same benchmark location/elevation. Measurements were consistently recorded from the same benchmark location at the top of the well vault starting in December 2014.
- NM Not measured  
NP LNAPL was not present in a measurable quantity  
NA Not applicable