

29 February 2016

Mr. Nile Testerman  
Environmental Engineer  
NCDEQ  
217 West Jones St  
Raleigh, NC 27603

**Subject: Monthly O&M Report – December 2015  
Cape Fear Superfund Site  
1219 S. Reilly Road  
Fayetteville, NC 28314**

Dear Mr. Testerman:

Enclosed you will find the December 2015 Monthly Report, prepared by Geosyntec Consultants (Geosyntec) on behalf of Environmental Field Management (EFM), summarizing the Operations and Maintenance (O&M) activities and system performance data for the ground water treatment system at the Cape Fear Wood Preserving Superfund Site.

Geosyntec and EFM appreciate the opportunity to continue the O&M activities at the Cape Fear Site. Should you have any questions or concerns, please contact me at 919-870-0576.

Sincerely,



Beau Hodge, P.G.  
Project Manager

Attachment: Operation and Maintenance Monthly Report – December 2015

Copies to: Hilary Thornton, EPA Region 4 (electronic copy)  
Darci Scherbak, B&V (electronic copy)  
Jeff Leaver, EFM (electronic copy)

*Prepared for*

**North Carolina Dept. of Environmental Quality**  
217 West Jones Street  
Raleigh, North Carolina 27603

**OPERATION AND MAINTENANCE  
MONTHLY REPORT – DECEMBER 2015  
CAPE FEAR WOOD PRESERVING  
SUPERFUND SITE  
FAYETTEVILLE, CUMBERLAND COUNTY  
NORTH CAROLINA**

*Prepared by*

**Geosyntec**   
consultants

**engineers | scientists | innovators**

Geosyntec Consultants of NC, PC  
2501 Blue Ridge Road, Suite 430  
Raleigh, North Carolina 27607

Project Number GN5550

February 2016

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## 1. INTRODUCTION

The United States Environmental Protection Agency (EPA), under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), initiated procedures to conduct Long Term Response Action (LTRA) activities at the Cape Fear Wood Preserving Superfund Site located in Fayetteville, Cumberland County, North Carolina (NC). On July 24, 2012, the system was shut down while the responsibility for operation and maintenance (O&M) of the remediation system transferred from EPA to the North Carolina Department of Environmental Quality (NCDEQ), Superfund Branch. On January 17, 2014, NCDEQ initiated a new five-year contract with Environmental Field Management (EFM) for O&M of the remediation system. EFM contracted Geosyntec Consultants of NC, PC (Geosyntec) to serve as the engineer of record for activities related to O&M of the system. This monthly report has been prepared by Geosyntec, on behalf of EFM, under Contract Number N130071 with NCDEQ.

The system was restored to full operation on May 1, 2014. The months of March and April 2014 were needed to make repairs and restore operation of the system controls and the programmable logic controller (PLC) at the site. This report presents the results of operation of the remediation system for the month of December 2015.

The LTRA remedy's primary objective is to remediate the dissolved ground water contamination and remove the dense non-aqueous phase liquid (DNAPL) present in the subsurface at the site. The primary chemicals of concern (COC) include benzene, non-carcinogenic (NCAR) polynuclear aromatic hydrocarbons (PAHs) and carcinogenic (CAR) PAHs. Carbazole is an additional chemical being monitored.

The ground water remediation system consists of three primary treatment technologies: (1) DNAPL removal, (2) ground water extraction with carbon filtration treatment, and (3) discharge and infiltration system. **Figure 1** is a general site layout showing the locations of the recovery wells (RWs), French Drain (FD), multi-phase extraction (MPE) wells, monitoring wells (MWs), and infiltration galleries (IGs) for the ground water extraction and treatment system.

## 2. OPERATION AND MAINTENANCE SUMMARY

Personnel conducted five site visits during the period from December 1 through December 31, 2015.

### 2.1 Site Visit Chronology

A summary of activities conducted during monthly site visits is provided below. Detailed site visit information can be found in the site visit logs attached as **Appendix A**. Maintenance records for the equipment serviced during this time period are presented in **Appendix B**.

- **December 2, 2015:** Conducted a routine site visit. Pumped off 8 gallons of NAPL from the oil/water separator (OWS). Initiated mowing of the Site.
- **December 3, 2015:** Completed mowing and cleared down trees.
- **December 11, 2015:** Conducted a routine site visit. Pumped off 7 gallons of NAPL from the OWS. Changed bag filters.
- **December 21, 2015:** Conducted a routine site visit. Pumped off 6 gallons of NAPL from the OWS. Conducted the monthly site monitoring tasks.
- **December 28, 2015:** Conducted a routine site visit. Pumped off 6 gallons of NAPL from the OWS.

### 2.2 Run Time

Total runtime for the month of November was estimated at 100%. **Table 1** presents the number of site visits per month compared to the system's run time percentage.

### 3. SYSTEM PERFORMANCE

During the reporting period, approximately 27 gallons of DNAPL were recovered from the OWS through normal operations. A total of 89,415 gallons of ground water were treated through the plant according to the influent flow meter since November 20, 2015.

#### 3.1 DNAPL Recovery

DNAPL recovery during the reporting period is summarized in the following table.

Date	DNAPL Recovered (gallons)
12/2/2015	8
12/3/2015	0
12/11/15	7
12/21/15	6
12/28/15	6
<b>Total</b>	<b>27</b>

**Table 2** presents the monthly and cumulative DNAPL recovery. **Table 3** presents the change in thickness of DNAPL at the recovery wells.

#### 3.2 Flow Data (Influent and Effluent)

Since November 20, 2015, according to the influent flow meter, a total of 89,415 gallons of water was processed through the system representing an average flow rate of 2.0 gallons per minute (gpm). **Table 4** presents the influent flow meter measurements on a monthly basis. Since April 2014, the average monthly flow through the system has been approximately 184,000 gallons; representing an average flowrate of 4.1 gpm. The Fayetteville area received over six inches of rain during the month of December (double the monthly average). The high rainfall contributed to an elevated water table limiting infiltration at the galleries and system treatment. The treatment system temporarily stops pumping groundwater until the holding tanks are at operational levels.

**Table 5** presents the distribution of the discharge based on individual flowmeters at each infiltration gallery. The vault at infiltration gallery #11 remains flooded and could not be read / recorded. Discrepancies between the flow meters have been a constant

issue. The influent flow meter is considered more accurate on a monthly basis than the meters at the individual infiltration galleries.

**Table 6** presents the configuration and status of each extraction point.

### **3.3 Treatment System Monitoring**

Treatment system samples are collected every other month. The next scheduled sampling event will be in January 2016.

#### 4. SYSTEM MAINTENANCE, REPAIRS, AND MODIFICATIONS

The following repairs, modifications, and/or maintenance items were made to the remediation system components during December 2015:

System Component	Maintenance, Repair, or Modification
General Site	Mowed the Site and cleared downed trees.
Recovery Wells	None.
System Processes	None.
Treatment System	Routine Bag Filter replacement.
Infiltration Galleries	None.

## 5. RECOMMENDATIONS

The following routine tasks will be conducted in January:

- Conduct site visits as needed.
- Perform daily remote monitoring of the system.
- Collect system samples for laboratory analysis.
- Change out bag filters as needed and pump off DNAPL.
- Decant water from DNAPL in accumulated drums from tank cleaning.
- Complete minor repairs to maintain run-time.

EFM and Geosyntec will continue preparations to construct two new infiltration galleries. Construction will take place in February.

Geosyntec will continue preparing the discharge permit application package to discharge directly to the publically owned treatment works (POTW).

# TABLES

**Table 1. Site Maintenance Data  
Cape Fear Wood Preserving Superfund Site**

<b>Year</b>	<b>Month</b>	<b>Number of Site Visits</b>	<b>Runtime (%)</b>	<b>Gallons of DNAPL Extracted</b>
2011	Jan	5	99%	34
2011	Feb	6	89%	60
2011	Mar	7	97%	150
2011	Apr	5	70%	62
2011	May	4	88%	65
2011	Jun	4	100%	35
2011	Jul	4	100%	80
2011	Aug	5	84%	75
2011	Sept	4	100%	50
2011	Oct	7	97%	53
2011	Nov	9	83%	48
2011	Dec	8	94%	500
2012	Jan	7	100%	120
2012	Feb	6	97%	70
2012	Mar	8	100%	65
2012	Apr	6	100%	70
2012	May	4	98%	52
2012	Jun	4	86%	42
2014	Apr	5	80%	23
2014	May	5	90%	21
2014	Jun	2	100%	21
2014	Jul	4	100%	23
2014	Aug	5	100%	4
2014	Sept	4	100%	25
2014	Oct	6	100%	17
2014	Nov	5	87%	21
2014	Dec	6	88%	20
2015	Jan	4	100%	265
2015	Feb	5	78%	11
2015	Mar	5	90%	22
2015	Apr	5	90%	19
2015	May	4	95%	27
2015	Jun	5	95%	30
2015	Jul	8	86%	28
2015	Aug	6	93%	18
2015	Sep	5	90%	24
2015	Oct	3	95%	7
2015	Nov	3	100%	364
2015	Dec	5	100%	27

**Notes:**

1. System operation began in 2001.

**Table 2. Cumulative DNAPL Recovery  
Cape Fear Wood Preserving Superfund Site**

<b>Date</b>	<b>DNAPL Extracted (gal)</b>	<b>Cumulative DNAPL Extracted (gal)</b>	<b>DNAPL Extracted (lbs)</b>	<b>Cumulative DNAPL Extracted (lbs)</b>
Jan 2011	34	18,177	310	165,612
Feb 2011	60	18,237	547	166,159
Mar 2011	150	18,387	1,367	167,526
Apr 2011	62	18,449	565	168,090
May 2011	65	18,514	592	168,683
June 2011	35	18,549	319	169,002
July 2011	80	18,629	729	169,730
Aug 2011	75	18,704	683	170,414
Sept 2011	50	18,754	456	170,869
Oct 2011	53	18,807	483	171,352
Nov 2011	48	18,855	437	171,790
Dec 2011	500	19,355	4,556	176,345
Jan 2012	120	19,475	1,093	177,438
Feb 2012	70	19,545	638	178,076
Mar 2012	65	19,610	592	178,668
Apr 2012	70	19,680	638	179,306
May 2012	52	19,732	474	179,780
June 2012	42	19,774	383	180,163
Apr 2014	23	19,797	210	180,372
May 2014	20	19,817	182	180,554
June 2014	21	19,838	191	180,746
July 2014	23	19,861	210	180,955
Aug 2014	4	19,865	36	180,992
Sep 2014	25	19,890	228	181,220
Oct 2014	17	19,907	155	181,374
Nov 2014	21	19,928	191	181,566
Dec 2014	20	19,948	182	181,748
Jan 2015	265	20,213	2,414	184,162
Feb 2015	11	20,224	100	184,263
Mar 2015	22	20,246	200	184,463
April 2015	19	20,265	173	184,636
May 2015	27	20,292	246	184,882
June 2015	30	20,322	273	185,156
July 2015	28	20,350	255	185,411
Aug 2015	18	20,368	164	185,575
Sept 2015	24	20,392	219	185,793
Oct 2015	7	20,399	64	185,857
Nov 2015	364	20,763	3,316	189,173
Dec 2015	27	20,790	246	189,419

**Notes:**

1. DNAPL indicates dense non-aqueous phase liquid
2. DNAPL specific gravity = 1.0918
3. DNAPL mass extracted (lbs) = DNAPL vol extracted (gal) \* DNAPL specific gravity \* 8.345 lbs/gal
4. System operation began in 2001.

**Table 3. Extraction Point Thickness Change  
Cape Fear Wood Preserving Superfund Site**

<b>RW-1R</b>		
<b>Visit Date</b>	<b>Product Thickness (ft)</b>	<b>Change in Product Thickness (ft)</b>
7/27/2015	0.00	Trace
8/18/2015	0.23	0.23
9/29/2015	0	0
10/22/2015	Trace	Trace
11/20/2015	0	Trace
12/21/2015	0	Trace
<b>RW-7R</b>		
7/27/2015	1.40	1.40
8/18/2015	1.43	0.03
9/29/2015	1.85	0.42
10/22/2015	1.36	-0.49
11/20/2015	1.45	0.09
12/21/2015	Trace	-1.44
<b>RW-8</b>		
7/27/2015	0.20	-0.27
8/18/2015	0.51	0.31
9/29/2015	0.34	-0.17
10/22/2015	Trace	-0.33
11/20/2015	0	0.12
12/21/2015	0.09	0.09

**Notes:**

1. ft bgs indicates feet below ground surface.
2. Change in Product Thickness...  
  - Negative values indicate reduced product thickness.
  - Positive values indicate product thickness has increased.
4. RW-2, 3, 4 and 6 have been abandoned.

**Table 4. Influent Flow Meter Measurements  
Cape Fear Wood Preserving Superfund Site**

<b>Visit Date</b>	<b>Corrected Total Reading (gal)</b>	<b>Groundwater Extracted During Period (gal)</b>	<b>Average Flowrate (gpm)</b>
1/25/2011	34,741,720	198,302	4.92
2/24/2011	34,877,717	135,997	3.15
3/21/2011	35,038,696	160,979	4.47
4/15/2011	35,186,934	148,238	4.12
5/26/2011	35,318,347	131,413	2.23
6/30/2011	35,455,362	137,015	2.72
8/31/2011	35,637,222	181,860	2.04
9/30/2011	35,704,281	67,059	1.55
10/31/2011	35,889,042	184,761	4.14
11/27/2011	36,047,543	158,501	4.08
12/28/2011	36,276,413	228,870	5.13
1/25/2012	36,514,536	238,123	5.91
2/26/2012	36,773,626	259,090	5.62
3/5/2012	36,896,475	122,849	10.66
4/30/2012	37,580,671	684,196	8.48
5/24/2012	37,824,929	244,258	7.07
6/26/2012	38,215,759	390,830	8.22
7/24/2012	38,418,807	203,048	5.04
4/28/2014	38,532,207	113,400	0.12
5/30/2014	38,803,872	271,665	5.90
6/26/2014	39,056,137	252,265	6.49
7/28/2014	39,240,959	184,822	4.01
8/20/2014	39,395,714	154,755	4.67
9/25/2014	39,561,756	166,042	3.20
10/29/2014	39,826,220	264,464	5.40
12/1/2014	39,893,254	67,034	1.41
12/31/2014	40,134,181	240,927	5.58
1/29/2015	40,304,256	170,075	4.07
2/16/2015	40,370,054	65,798	2.54
3/31/2015	40,477,671	107,617	1.74
4/20/2015	40,569,980	92,309	3.21
5/11/2015	40,708,427	138,447	4.58
6/22/2015	41,035,368	326,941	5.41
7/27/2015	41,412,413	377,045	7.48
8/18/2015	41,650,303	237,890	7.51
9/29/2015	41,908,299	257,996	4.27
10/22/2015	42,039,937	131,638	3.97
11/20/2015	42,193,282	153,345	3.67
12/21/2015	42,282,697	89,415	2.00

**Notes:**

1. Averages are based on total flow divided by time assuming 100% run time.
2. Correct total for bag filter flow meter is based on running cumulative value from March 2008 Annual Report plus monthly differential.
3. Bag filter flow meter is located between bag filters and GAC vessels and receives the cumulative flow from the recovery wells and the French drain.

**Table 5. Distribution of Treatment System Discharge Volume  
per Infiltration Gallery  
Cape Fear Wood Preserving Superfund Site**

Location ID	11/20/2015 Meter Reading  (gallons)	12/21/2105 Meter Reading  (gallons)	Discharge Volume Based on Flow Meters  (gallons)	Distribution of Infiltration Gallery Discharge  (Percentage)
IG-1	NR	NR	NA	NA
IG-2	NR	NR	NA	NA
IG-3	NR	NR	NA	NA
IG-4	7,110,196	7,110,317	121	1.5%
IG-5	Flooded	2,300,910	NA	NA
IG-7	4,081,865	4,088,770	6,905	84.9%
IG-8	5,625,245	5,625,393	148	1.8%
IG-9	10,961,237	10,962,192	955	11.7%
IG-10	3,206,825	3,206,825	0	0.0%
IG-11	Flooded	Flooded	NA	NA
<b>Total</b>	<b>30,985,368</b>	<b>33,294,407</b>	<b>8,129</b>	<b>100%</b>

**Amount of Groundwater Pumped during Period per Table 4**

**89,415**

**Difference between the Influent Volume per Table 4 and the  
Individual Gallery Totals**

**81,286**

**Table 6. Configuration of Extraction Points  
Cape Fear Wood Preserving Superfund Site**

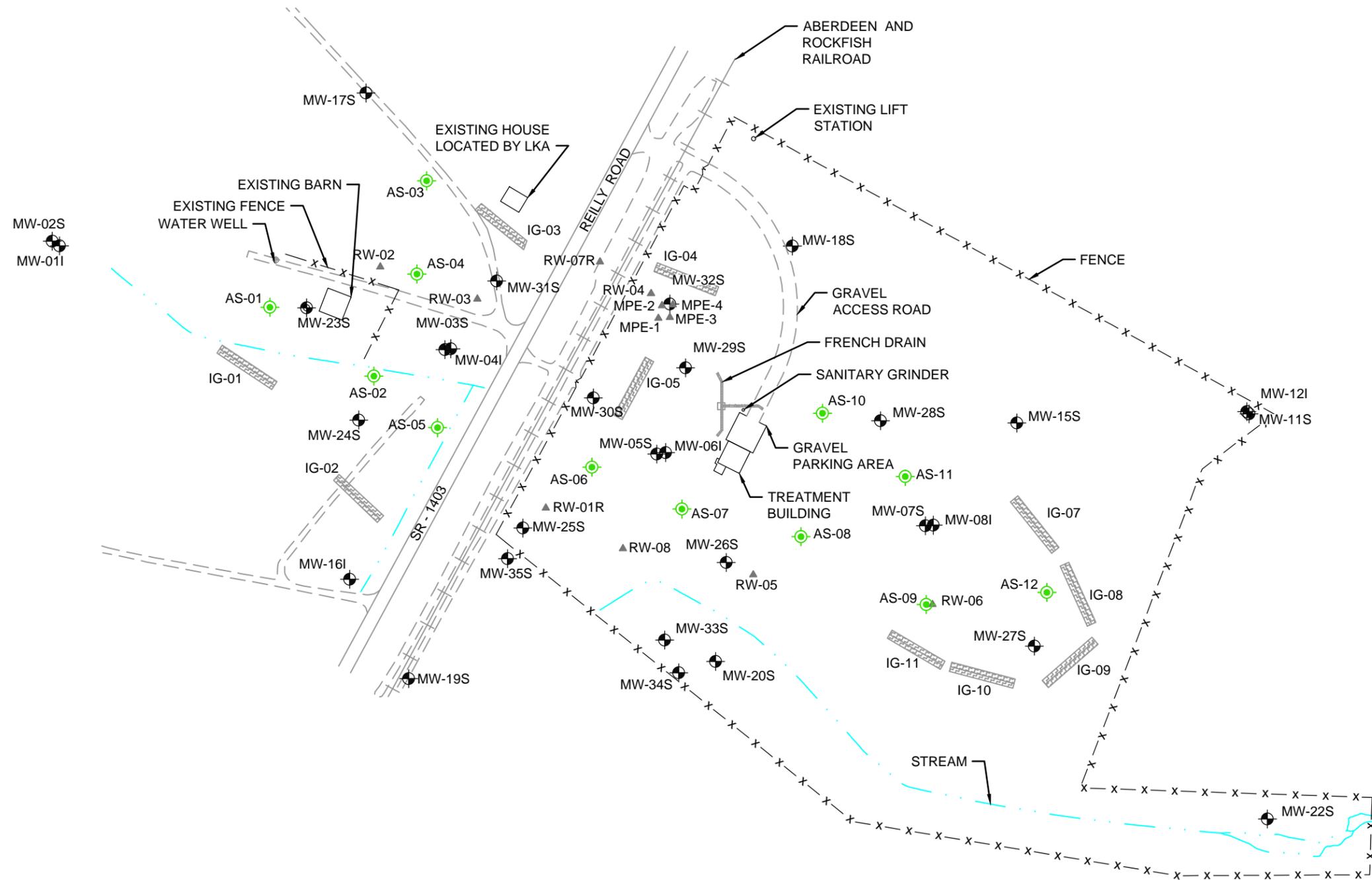
<b>Location</b>	<b>Status</b>	<b>Top or Bottom Loading</b>	<b>Diameter (in)</b>	<b>Pump Intake (ft bgs)</b>
RW-1R	On-line	Bottom	6	25
RW-2	Abandoned	N/A	6	N/A
RW-3	Abandoned	N/A	6	N/A
RW-4	Abandoned	N/A	6	N/A
RW-5	On-line	Top	6	17
RW-6	Abandoned	N/A	6	N/A
RW-7R	On-line	Bottom	6	21
RW-8	On-line	Bottom	6	27
MPE-1	On-line	Bottom	4	27
MPE-2	On-line	Bottom	4	28
MPE-3	Off-line	Bottom	4	28
MPE-4	Off-line	Bottom	4	28

**Notes:**

1. ft bgs indicates feet below ground surface
2. N/A indicates not applicable
3. RW-7R was re-installed on 1/29/15.

# FIGURES

# CAPE FEAR WOOD PRESERVING SUPERFUND SITE



### LEGEND

<ul style="list-style-type: none"> <li><span style="color: cyan;">— · — · — · — · —</span> CENTERLINE OF STREAM</li> <li><span style="border-bottom: 1px dashed gray; width: 100px; display: inline-block;"></span> GRAVEL ACCESS ROAD</li> <li><span style="border-bottom: 1px dashed gray; width: 100px; display: inline-block; margin-right: 5px;"></span> x <span style="border-bottom: 1px dashed gray; width: 100px; display: inline-block; margin-right: 5px;"></span> x <span style="border-bottom: 1px dashed gray; width: 100px; display: inline-block;"></span></li> <li><span style="border-bottom: 1px solid gray; width: 100px; display: inline-block; margin-right: 5px;"></span>   <span style="border-bottom: 1px solid gray; width: 100px; display: inline-block; margin-right: 5px;"></span>   <span style="border-bottom: 1px solid gray; width: 100px; display: inline-block;"></span></li> <li><span style="border-bottom: 1px solid gray; width: 100px; display: inline-block; background: repeating-linear-gradient(45deg, transparent, transparent 2px, gray 2px, gray 4px); border: 1px solid gray;"></span> INFILTRATION GALLERY LOCATION (IG)</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: green;">●</span> AS-01 AIR SPARGE WELL LOCATION (AS)</li> <li><span style="border: 1px solid black; border-radius: 50%; width: 10px; height: 10px; display: inline-block; margin-right: 5px;"></span> MW-01I MONITORING WELL LOCATION (MW)</li> <li><span style="color: gray;">▲</span> RW-01R RECOVERY WELL LOCATION (RW)</li> </ul>	
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CAPE FEAR WOOD PRESERVING FACILITY  
1219 S REILLY ROAD, FAYETTEVILLE, NC



FIGURE

1

PROJECT NO: GN5550

APRIL 2014

M:\CAPE FEAR WOOD PRESERVING FACILITY\FIGURES\5550F002

# APPENDIX A

## Site Visit Log and System Readings

Location CFWJP Date 12-2-15 47

Project / Client NCDENR

Weather: Rainy 50s

Personnel: PHI  
Task: weekly 0.5 hr mow  
12-2-15  
0900 arrive onsite, pump DNAPL, check BF  
Product recovered 8 gal  
GPM: on arrival: 0 and departure: 24.1  
Perm: 12908697  
Reset 390/0  
SYS running ok, reset High Eff alarm  
0945 Begin Mow  
1700 Report site  
12-2-15

Weather: Sunny 50s 12-3-15  
Personnel: J. Leaver, A. Hill, D. Hill  
Task: Mow, clear trees  
0800 arrive on site begin mow  
0900 assist A. Hill w/ clearing

C.FWP

12-11-15

NCDENR

Weather: Sunny 50-60s

Personnel: D. Hill (Gresport onsite) un-  
related to my visit

Tasks: Change Bag filters Pump DNAPL

12-11-15

1030 Arrive onsite

~~On arrival @ departure~~

gpm | 25.4 | 30.6

Change BF: Y

Perm: 12933842

Reset: 25136

DNAPL: ~ 7 gal

1130 Depart site

CFWF

12-21-15

NCDENR

Weather: Overcast 50

Personnel: DHill

Task: Monthly O&M

12-21-15

0900 arrive on site

0910 Begin recording readings

DNAPL Pumped: 6 gal

BF Totalizer	12948931	Reset	15078	GPM
				29.8

Did not change BF ok good

Flow and pressures

0920 Take RW gauge readings and IG Readings

O&M Checklist

Cape Fear Wood Preserving Superfund Site

Fayetteville, North Carolina

EFM Job No:

NCDENR

Date:

12/21/15

Time onsite

0900

Time offsite

Personnel onsite:

DH:11

Groundwater Extraction System Running:

Y

At Arrival:

Y

At Departure:

Y

If No, Explain Reason:

Reason for Site Visit:

ACTIVITIES COMPLETED

Change Bag Filters (50/25):

Y

Pump off OWS:

Y

Product Recovered (gal):

6

Air Compressors:

AC-1:

Running?

Y

Pressure (psi):

82

Hour Meter:

20,269

AC-2:

Running?

N

Pressure (psi):

0

Hour Meter:

-

Main Compressed Air Line Pressure (psi):

63

Compressed Air Line for Pumps Gauge (psi):

61

Air Dryer Effluent Temperature (F):

GREEN

Check Oil Level in ACs (Y/N):

Y

Check Air Compressor Belt Tightness (Y/N):

Y

Check Compressed Air Lines for Leaks (Y/N):

Y

Comments: None

Treatment System:

Pre-carbon Pressure Gauge (psi):

49

T-1000 Effluent Tank Level (ft):

291

Mid-Carbon Pressure Gauge (psi):

69

T-1000 Inflow Tank Level (ft):

386

Post-Carbon Pressure Gauge (psi):

41

Influent Transfer Pump P-1000-1 Pressure Gauge (psi):

9.6

Effluent Transfer Pump P-1200-1 Pressure Gauge (psi):

0FF

Influent Transfer Pump P-1000-2 Pressure Gauge (psi):

0

Effluent Transfer Pump P-1200-2 Pressure Gauge (psi):

0FF

Phase Sep. Transfer Pump P-1100-1 Pressure Gauge (psi):

6

Inlet Tank Elevation (in):

9.43

Phase Sep. Transfer Pump P-1100-2 Pressure Gauge (psi):

5

Outlet Tank Elevation (in):

31.92

Comments:

Totalizers:

Bag filter totalizer (gal):

12,948.94

Flow rate (gpm):

19.8

Infiltration Gallery Totalizer (gal):

8771084

Flow rate (gpm):

0.0

Other:

Electric Meter Reading (kW):

88718

9.211

**Recovery Well Gauging & System Readings**

Recovery Well I.D.	Pump Online (Y/N)	Depth to Water (ft)	Thickness of Product (ft)	Depth to Bottom (ft)	Pressure in Bldg (PSI)	Pressure in Vault/Time	Totalizer (gal)	Notes
RW-1R	Y	20.58	∅	26.48				
RW-2								
RW-3								
RW-4								
RW-5	Y	1.38	∅	25.00				
RW-6								
RW-7R	Y	19.08	TRACE	23.69				
RW-8	Y	27.44	0.09	27.14				
FRENCH DRAIN	Y	499	0.0	30.81				
MPE Wells	X	499	0.0	30.81				TOT: 11822702 gal

Notes:

**Infiltration Gallery Gauging & System Readings**

Well ID	Piezometer Depth to Water (ft)	Flow Rate (GPM)	Cumulative Flow Volume (gal)	Noticeable Flow (Y/N)	Notes
Gallery 1	-	-	-	-	-
Gallery 2	-	-	-	-	-
Gallery 3	-	-	-	-	-
Gallery 4	1.11	0.0	7110317	N	
Gallery 5	0.29	0.0	2300910	N	
Gallery 7	0.38	1.3	4088770	Y	
Gallery 8	0.49	1.2	5625393	Y	
Gallery 9	2.81	0.0	10962192	N	
Gallery 10	1.15	0.0	3206825	N	
Gallery 11	4.32	0.0	Flooded	N	

Notes:

Location CFWP

Date 12-28-15<sup>65</sup>

Project / Client AKDENR

Weather: Rainy 60s

Personnel: Bill

Task: Weekly O&M

12/28/15

200 arrive onsite

Pump DNAPL, Recovered 36 gal

12/15 changed BFs

5pm arrival: 0 @ departure: 243

Perm: 12959018 Reset: 10090

1300 Depart Site

~~AKDENR 12/28/15~~

# APPENDIX B

## Maintenance Records

Equipment	General Site				
Manufacturer					
Model Number					
Serial Number					
Date	Run Time (Hours)	Diagnosis/Work Performed	Maintenance (M)/Trouble-shooting(T)	Operating Properly (yes/no)	Work Performed by
11/21 - 24/2014		Annual Cleaning	M	Y	JL/AH/RL/DH
5/27 - 28/2015		Mowed site & cut/removed fallen trees on paths to MW-22,27 & 34	M	Y	JL/AH/DH
6/15/2015		Treatment system waste was transported offsite.	M	Y	JL/DH
7/7/2015		replace mid sample location nipple (broken the previous day)	M	Y	DH/AH
7/27&28/2015		Mowed site	M	Y	RL
11/24/2015		Annual Cleaning	M	Y	JL/DH
12/2 & 3/2015		Mow site and clear down trees	M	Y	JL/AH/DH

Equipment	Bag Filters				
Manufacturer	Filter Specialists Inc				
Model Number	BFNP12 CS				
Serial Number					
Date	Run Time (Hours)	Diagnosis/Work Performed	Maintenance (M)/Trouble-shooting(T)	Operating Properly (yes/no)	Work Performed by
1/6/2015		Changed Bag Filters	M	Y	RL
1/12/2015		Changed Bag Filters	M	Y	RL
1/20/2015		Changed Bag Filters	M	Y	RL
3/4/2015		Changed Bag Filters	M	Y	RL
3/23/2015		Changed Bag Filters	M	Y	RL
4/7/2015		Changed Bag Filters	M	Y	DH/RL
4/15/2015		Changed Bag Filters	M	Y	RL
4/20/2015		Changed Bag Filters	M	Y	DH
5/11/2015		Changed Bag Filters	M	Y	DH
5/20/2015		Changed Bag Filters	M	Y	DH
6/15/2015		Changed Bag Filters	M	Y	DH
6/22/2015		Changed Bag Filters	M	Y	AH/DH
7/6/2015		Changed Bag Filters	M	Y	DH
7/15/2015		Changed Bag Filters	M	Y	JL
7/27/2015		Changed Bag Filters	M	Y	AH/DH
8/12/2015		Changed Bag Filters on TP#1 side only	M	Y	DH
8/18/2015		Changed Bag Filters	M	Y	AH/DH/RL
8/19/2015		Changed Bag Filters	M	Y	RL/DH
9/8/2015		Changed Bag Filters	M	Y	DH
9/18/2015		Changed Bag Filters	M	Y	DH
9/29/2015		Changed Bag Filters	M	Y	AH
11/12/2015		Changed Bag Filters	M	Y	DH
12/11/2015		Changed Bag Filters	M	Y	DH
12/28/2015		Changed Bag Filters	M	Y	DH

Equipment	Oil water separator				
Manufacturer					
Model Number					
Serial Number					
Date	Run Time (Hours)	Diagnosis/Work Performed	Maintenance (M)/Trouble-shooting(T)	Operating Properly (yes/no)	Work Performed by
1/6/2015		Pumped DNAPL to drum	M	Y	RL
1/12/2015		Pumped DNAPL to drum	M	Y	RL
1/20/2015		Pumped DNAPL to drum	M	Y	RL
2/2/2015		Pumped DNAPL to drum	M	Y	RL/DH
2/10/2015		Pumped DNAPL to drum	M	Y	RL/DH
2/16/2015		Pumped DNAPL to drum	M	Y	RL/DH/AH
3/4/2015		Pumped DNAPL to drum	M	Y	RL
3/11/2015		Pumped DNAPL to drum	M	Y	RL
3/16/2015		Pumped DNAPL to drum	M	Y	RL
3/31/2015		Pumped DNAPL to drum	M	Y	RL
4/7/2015		Pumped DNAPL to drum	M	Y	RL/DH
4/15/2015		Pumped DNAPL to drum	M	Y	RL
4/20/2015		Pumped DNAPL to drum	M	Y	RL
5/11/2015		Pumped DNAPL to drum	M	Y	DH
5/20/2015		Pumped DNAPL to drum	M	Y	DH
5/27/2015		Pumped DNAPL to drum	M	Y	JL/AH/DH
5/27/2015		Pressure Wash OWS after draining	M	Y	JL/AH/DH
6/4/2015		Pumped DNAPL to drum	M	Y	RL
6/15/2015		Pumped DNAPL to drum	M	Y	DH
6/29/2015		Pumped DNAPL to drum	M	Y	RL
7/6/2015		Pumped DNAPL to drum	M	Y	DH
7/15/2015		Pumped DNAPL to drum	M	Y	JL
7/20/2015		Pumped DNAPL to drum	M	Y	RL
7/27/2015		Pumped DNAPL to drum	M	Y	AH/DH
8/5/2015		Pumped DNAPL to drum	M	Y	RL/DH
8/12/2015		Pumped DNAPL to drum	M	Y	DH
8/18/2015		Clean OWS	M	Y	AH/DH/RL
9/2/2015		Pumped DNAPL to drum	M	Y	RL
9/8/2015		Pumped DNAPL to drum	M	Y	DH
9/18/2015		Pumped DNAPL to drum	M	Y	DH
9/29/2015		Pumped DNAPL to drum	M	Y	AH
10/12/2015		Pumped DNAPL to drum	M	Y	RL
10/22/2015		Pumped DNAPL to drum	M	Y	RL
11/12/2015		Pumped DNAPL to drum	M	Y	DH
11/20/2015		Pumped DNAPL to drum	M	Y	AH, DH
11/24/2015		Pumped DNAPL to drum	M	Y	JL/DH
11/24/2015		Clean OWS	M	Y	JL/DH
12/2/2015		Pumped DNAPL to drum	M	Y	DH
12/11/2015		Pumped DNAPL to drum	M	Y	DH
12/21/2015		Pumped DNAPL to drum	M	Y	DH
12/28/2015		Pumped DNAPL to drum	M	Y	DH