Penta Wood Products Superfund Site Extraction/LNAPL Recovery Well and Conveyance System Installation

Prepared for



CH2MHILL®

Contents

Section				Page					
Acron	yms an	d Abbrev	viations	v					
1	Introduction								
	1.1	Site D	Description						
	1.2	Const	ruction Activities	1-1					
2	Pre-Construction Activities								
	2.1	Design	n	2-1					
	2.2	Utility	Clearance	2-1					
	2.3	Mobili	lization	2-1					
3	Const	truction	Activities	3-1					
	3.1	Well II	nstallation	3-1					
		3.1.1	Monitoring Well Installation	3-1					
		3.1.2	Soil Boring Advancement	3-1					
		3.1.3	Extraction Well Installation	3-1					
		3.1.4	Well Development	3-2					
		3.1.5	Waste Management						
	3.2	Waste	Water Conveyance Construction	3-2					
		3.2.1	Installation of Pumps						
		3,2,2	Excavation and Installation of Piping						
		3.2.3	Installation of Pump Instrumentation						
	3.3 Treatment System Upgrades								
	3.4	Restor	ration	3-3					
Appen	dixes								
Α	Borin	g Logs							
В	Well (Construct	tion Details						
C	WDN	R Well Su	ıbmittals						
D	•		tion Records						
E	Photo	Log							
Table									
2.1	2010/	/2011 Car	nctruction Activities	1 2					

Acronyms and Abbreviations

CAMU corrective action management unit

CLP contract laboratory program

PW Penta Wood Products Superfund Site

RA remedial action

WDNR Wisconsin Department of Natural Resources

Introduction

CH2M HILL, Inc. has been contracted by the United States Environmental Protection Agency (USEPA), Region 5 to perform additional remediation activities for the Penta Wood Products Site in Siren, Wisconsin conducted under USEPA Region 5 Contract No. EP-S5-06-01. The additional remedial activities consisted of installing three nested groundwater extraction/LNAPL recovery wells including integration of the new wells into the existing treatment system. The work was completed between November 8th, 2010 and March 3rd, 2011.

1.1 Site Description

The Penta Wood Products site is an inactive wood treating facility located at 8682 Daniels 70 (former State Route 70), Daniels Township, Siren, Wisconsin, 54872. The existing groundwater and free product treatment and extraction system was installed in 2001. Additional upgrades were required before the system was fully operational in 2004 and has been fully operational since. In 2010 the WDNR and USEPA agreed that installation of three additional extraction well nests would enhance the remediation occurring at the site prior to transfer of the operations to the WDNR in August of 2014. Two additional monitoring wells were also installed to supplement the existing monitoring network.

The site stratigraphy consists of an upper sand, a glacial till, and a lower sand. The upper sand is fairly continuous across the site extending from the surface or beneath the fill material to depths of 90 to 120 feet. The upper sand consists of well graded sand with some minor amounts (<10 percent) of silt and clay, well graded sand with silt, poorly graded sand, or poorly graded sand with gravel. During previous site work, discontinuous lenses of till up to 25 feet in thickness were encountered within the upper sand between elevations of 975 and 1,002 feet mean sea level (MSL), or depths of about 65 or 70 feet.

1.2 Construction Activities

The following is a summary of the major activities:

- Mobilization.
- Utility locate activities (for well drilling locations).
- Pilot hole drilling and soil sampling at three locations.
- Installation of three extraction well nests which each include a free product recovery well and a groundwater extraction well.
- Installation of two groundwater monitoring wells.
- Development of all wells installed.
- Construction of well completions for groundwater monitoring wells.
- Installation and testing of LNAPL recovery pumps and groundwater extraction well pumps, including pitless adaptors.
- Excavation of trenches for the installation of well vaults and piping to the treatment facility.
- Installation of piping from the well heads to the treatment system including floor slab penetration for the piping.
- Installation of piping instrumentation.
- Reprogrammed the PLC to incorporate the new wells into the system.
- Site restoration and demobilization.

Table 2-1 presents a chronological summary of major events and dates associated with the 2010/2011 construction activities.

TABLE 2-1 2010/2011 Construction Activities

Date	Activity
8-Nov-10	Mobilized drilling rig for soil borings; completed initial health and safety briefing
22-Nov-10	Completed first soil boring at EW-14
1-Dec-10	Began installation of the nested extraction wells.
7-Dec-10	Completed soil borings at EW-13 and 12
20-Dec-10	Completed installation of MW-27 and MW-28
30-Dec-10	Completed installation of nested extraction well at EW-14
10-Jan-11	Earthworks mobilized to the site.
17-Jan-11	Installed conveyance piping to EW-14
19-Jan-11	Completed installation of well EW-13; conveyance piping was extended to EW-13
24-Jan-11	All electrical conduits, VFD's, PLC's were installed in the building
2-Feb-11	Completed installation of the nest well at EW-12
3-Feb-11	Placed vault for EW-12; placed conveyance piping to EW-12
4-Feb-11	Completed piping manifold for LNAPL and groundwater inside the building. Completed hydrostatic testing on the piping
10-Feb-11	Completed installation of pitless adapters on all wells
18-Feb-11	Installation and wiring of all pumps was completed
3-Mar-11	PLC was reprogrammed to incorporate the new extraction wells and new extraction wells were put into service

Pre-Construction Activities

Pre-construction activities conducted prior to the start of field work include the completion of the design for the installation of the three extraction wells, procurement of subcontractors and utility clearance. The design was completed to incorporate the new extraction wells into the existing system. A required pre-bid site meeting was held on October 20, 2010 for the two solicited subcontracts; drilling and earthworks. The procurement was completed as a lowest technically acceptable bid. HIS Constructors was awarded the earthworks subcontract and Layne Christensen was awarded the drilling subcontract.

Site preparation activities were performed according to the project specifications and the contractor's approved work plan. The following subsections provide additional details of the site preparation activities performed during the project. Preparation for the start of construction activities included the following items:

- Establishment of staging areas
- Utility clearance
- · Review of submittals
- Review of Health and Safety Plans

2.1 Design

CH2M HILL designed system modifications associated with installing and connecting three additional groundwater extraction and LNAPL recovery wells. The design was completed using similar construction to the existing extraction wells and conveyance system which has been used successful at the site to date.

The extraction wells were installed within the area where LNAPL was known to be present historically. Locations EW-12, EW-13 and EW-14 corresponded with monitoring wells with elevated levels of PCP and measurable amounts of LNAPL. The monitoring wells MW-27 and MW-28 were installed as replacements to ensure that delineation of the edges of the PCP plume is continuing to occur.

2.2 Utility Clearance

The utility clearance was completed by calling Diggers Hotline; several utilities visited the site and confirmed that no public utilities were located on the east side of the treatment system building. A third party clearance was not completed due to documented underground piping previously installed by CH2MHILL. The earthworks subcontractor located and exposed the existing piping prior to using heavy equipment.

2.3 Mobilization

On November 8, 2010 Layne Christensen (Layne) mobilized a rotosonic drilling rig to the site to begin installation of the pilot holes; the Barber rig was mobilized on December 1st to begin installation of the extraction wells. HIS Construction Inc. (HIS) mobilized to the site on January 4th, 2011 to begin the earthworks portion of the work. Layne set up a staging area northwest of the treatment system at the site where they constructed a decontamination pad and materials lay down area. HIS used the same area for a lay down area. Sensitive equipment including PIDs and 4 gas meters were stored inside the treatment system building.

Submittals were reviewed prior to work taking place; this included review of health and safety plans and project plans and materials submittals all which were compared to the engineering plans. Hazardous waste and health and safety certifications were reviewed for all workers at the site and copies were kept on site during the entire field effort. Additional reviews were required for wielding and crane lifting which were required for operation of the Barber rig and installation of the extraction wells. The well locations at the site were identified and marked by CH2M HILL to ensure proper location.

Construction Activities

3.1 Well Installation

The following well installation and associated tasks occurred throughout the project.

3.1.1 Monitoring Well Installation

Two monitoring wells were installed, one located in the semi-confined aquifer (MW-28) and one in the unconfined aquifer (MW-27). MW-27 was a replacement well for MW-6S which has been found to be dry more frequently due to declining water tables at the site. MW-27 is important to define the southern boundary of the plume in the unconfined aquifer. MW-28 characterizes the semi-confined aquifer in the eastern direction and is a replacement for MW-10 which is screened much lower in the aquifer and would not effectively detect contamination in this direction.

The monitoring wells were installed using a rotary sonic drilling rig and continuous cores were collected for soil logging. Soil logs and construction diagrams are located in Appendix A and Appendix B respectively. The wells were constructed of 2 inch Schedule 80 PVC with a slot size of 0.01-inch. The #2 sand pack was installed in the annulus with a #20 fine sand seal and 3 feet of bentonite seal installed using bentonite chips. The remaining annulus above the seal is comprised of bentonite slurry. The completion was an above ground pipe with protective bollards. The first attempt at installing the well in MW-27 ended with the well breaking at depth, the broken well was removed and the boring was over-drilled and set in the hole successfully.

3.1.2 Soil Boring Advancement

Soil borings were advanced prior to the installation of the three extraction wells (EW-12, EW-13, and EW-14) to determine proper well screen intervals and for collection of soil samples. The soil borings were advanced using a sonic drill rig (SDC500-28E). Soils were collected continuously in ten foot intervals; soils were logged for soil characteristics. Each. In addition, head space monitoring was performed on each 10 foot soil interval using a 14.5 eV PID. The highest head space samples from the upper fill area, the vadose zone and the smear zone were submitted to the lab for analysis for PCP and TPH oil. The upper fill area is typically the upper 10 feet of soil where woodchips could be encountered. The vadose zone is typically from 10 bgs to 100 feet bgs. (10-15 feet above the water table). The smear zone is typically the 10 feet above and 10 feet below the water table or usually 100 to 120 feet bgs. The soil samples collected during the advancement of the soil borings were compared to historical soil samples to determine the progress on cleaning up the contamination with the soil at the site. The soil boring at EW-14 was initially advanced to 85 feet before encountering refusal and the location was moved over 10 feet and was re-attempted, this boring was named AT-14A.

3.1.3 Extraction Well Installation

Once the soil borings were completed at each well location a DR-24 Barber rig was mobilized to each site to install the extraction wells. The extraction wells were drilled several feet from the original soil boring location to avoid complications with installing the wells in the soil boring location.

The Barber rig advanced a temporary 16 inch diameter steel casing to a total depth of 50 ft below the groundwater surface or approximately 145-165 ft bgs. The groundwater extraction well and the LNAPL recovery wells were nested in the same borehole. The screen for the LNAPL recovery well was completed across the groundwater table with approximately 15 feet above the water and 15 feet below the water. The groundwater extraction well was installed approximately 30 below the elevation of the groundwater. Construction of each nested extraction well consists of a 6 inch groundwater extraction well and a 4-inch LNAPL recovery within a single16-inch borehole. The groundwater extraction wells are typically installed with the top of the screen 40 feet below the water table.

The 4-inch LNAPL recovery wells were installed across the water table; fifteen feet above and fifteen feet below the water table. Specific well construction details are located in Appendix B.

The temporary casing advanced to total depth was welded in 20 foot section as the drill was advanced. Due to health and safety concerns associated with the methane present in the subsurface, additional precautions were taken when welding the casing in place including monitoring of the air space for elevated levels of explosive gases. A supply of nitrogen gas (inert gas) was available to pump into the casing to replace air with explosion potential prior to welding. No explosive environments were encountered and nitrogen was not used.

During the installation of the LNAPL recovery pump in EW-13, an obstruction was identified which prevented the installation of the pump. A downhole video camera was brought in to identify the obstruction. It was determined that the screen had been bent inward likely by a boulder during construction. The screen was deformed but still intact and would function as designed. The well construction details were submitted to the WDNR on July 25, 2011; a copy of these submittals including pump installation is located in Appendix C.

3.1.4 Well Development

Each pair of groundwater extraction/LNAPL recovery wells were developed by pumping and surging. Each well was bailed to removed fines; wells were then surged to improve connection between the screen and the sand pack. Alternately the well was pumped until remaining sand, silt and turbidity were removed. Turbidity was measured routinely and pumping was continued until turbidity was reduced below 10 NTUs or the well was pumped for 5 hours. The 6 – inch groundwater extraction wells were purged of approximately 1000 gallons of water and the 4 – inch LNAPL recovery wells were purged of approximately 300 gallons. The 2-inch monitoring wells were developed for 30 min and were purged of 100 gallons each. All development water was treated with the treatment system.

3.1.5 Waste Management

Soil cutting were consolidated into roll off containers. Water was decanted off the top and treated through the treatment system. Once dewatered, the soil cuttings were consolidated in the conveyance piping trenches. The soils were covered with two feet of clean earthen cap in accordance with the previous cover design.

3.2 Waste Water Conveyance Construction

3.2.1 Installation of Pumps

Three 2 HP 460 volt grundfos Redi-flo4 groundwater extraction pumps were installed in the 6" groundwater extraction wells and three AP4+ pneumatic pumps were installed in the nested LNAPL recovery wells. The groundwater extraction pumps were installed with 1.25" galvanized steel piping and connected with MAAS-Midwest type model 6J1.25N pitless adapters to convey groundwater below ground to the treatment system. The LNAPL pumps were installed with ¾" HDPE piping water from the groundwater surface piped below ground to the treatment system.

When installing the LNAPL pump in EW-13 it was discovered that the designed pump with an outer diameter of 3.6 inches was not able to be installed in the well due to an obstruction in the well. A downhole video camera was brought in to determine what sort of obstruction was occurring in the well. After viewing the obstruction with the camera it was determined that although the screen was bent inward. It was determined that the screen was deformed but was still intact and will function as designed. A QED pump model # AP2T with an outer-diameter of 1.75" was used to replace the designed pump. The pump was able to fit past the damaged portion of the screen to the groundwater surface and was an acceptable replacement.

3.2.2 Excavation and Installation of Piping

The conveyance piping for each well was buried in trenches extending 7 feet deep to bury the piping below the frost line. A well vault that extends 8 feet deep and is 4'6" in diameter was installed for each nested extraction well. The conveyance piping was placed in a second 6-inch HDPE pipe from the well vault to the building for containment purposes. The HDPE containment pipe buried in each trench extends from each of the well vaults to

3-2 ES031411083530MKE

the treatment system carrying a %"free product pipe and a 1 %"groundwater pipe. Electrical wiring was buried at 4 feet deep in the same trench. The piping was brought up to the building where the pipes enter the building through a slab penetration. The HDPE was electro-fused together once the penetrations into the building were made. Each of the pipes was pressure tested to ensure there are no leaks.

3.2.3 Pump Installation

The individual HDPE lines from each well are equipped with a flowmeter, check valve, and sample tap prior to connecting to the main manifold inside the treatment building.

The groundwater extraction pumps and the LNAPL recovery pumps are controlled by the existing programmable logic controller (PLC). The pumping rate of each of the groundwater extraction wells will be adjusted with variable frequency drives (VFD). The LNAPL recovery pumps are situated at the water table and will be adjusted regularly to ensure maximum LNAPL recovery. The groundwater pumps are set approximately three feet above the top of the screen to allow for water to flow across the motor of the pump to allow for proper cooling. Actual depths are located in Appendix D.

3.3 Treatment System Upgrades

The treatment system maximum designed flow rate is 126 gpm but was previously operating at approximately 60 gpm. The new wells will operate at the same flow rate as the older wells resulting in a total flow rate of for the current system of approximately 85 gpm.

LNAPL collected from the recovery wells is pumped to an oil/water separator in the treatment building which transfers oil to an outside storage tank and excess water back into the influent groundwater treatment stream. The previous flow from the four operating LNAPL recovery wells was approximately 5 gpm. The additional LNAPL pumps operate at approximately 1 gpm for a total flow rate to the oil/water separator of 8 gpm. The LNAPL wells after installation did not immediately have measureable amounts of LNAPL so the new LNAPL pumps were not turned on.

3.4 Restoration

The excavated trench material was placed back into the trenches as backfill. The existing CAMU cover (2 feet of clean material) was removed and stockpiled until it could be placed back over the excavation to maintain the cover within the CAMU. Drill cuttings were dewatered and then consolidated in the CAMU under the clean cover.

Disturbed areas from earthworks activities re-seeded with a selected grass mixture that included quick-growing grasses for early stabilization and slow-growing grasses more suitable to site conditions. The grasses were covered with straw to protect the seeds and allow for quick germination.

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Appendix A Boring Logs and Well Construction Details



PROJECT NUMBER:	BORING NUMBER:		•••••			
344511	EW-12	SHEET	1	OF	2	

SOIL BORING LOG

•	
PROJECT : Extraction Well Installation 2011, Siren, Wi	LOCATION : Siren, WI
ELEVATION:	DRILLING CONTRACTOR : Layne Christensen
LILEYATIYA .	OMETING COMMON C

DRILLING METHOD AND EQUIPMENT: SDC500-28E, Sonic WATER LEVELS: 102.0 ft below ground surface START: 12/2/2010 END: 12/7/2010 LOGGER: Haas/Lippincott DEPTH BELOW EXISTING GRADE (n) SOIL DESCRIPTION COMMENTS ğ INTERVAL (ft) SYMBOLLIC SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION RECOVERY (in) SAMPLE ID (TIME) 5 0-18' - brown, moist, (loose), fill with wood chips 10 SAND (SM) oil sheen observed in sample @ 45' 20 PID (25'): 5ppm PID (34'): 7ppm PID (43'): 13ppm 18-53' - reddish brown, moist, (loose), little silt, cobbles 25.0 12.0 25-26' 30 33.0 12.0 33-34 40 42.0 12.0 42-43 60 SAND (SM) 53-58' - brown, moist, (dense), with some slit, cobbles and pebbies 58.0 PID (56'): 12ppm PID (75'): 68ppm PID (81'): 28ppm 58-59 12.0 SAND (SP) 60 12 58-82' - brown to reddish brown, moist, (loose), trace of silt, Pebbles, cobbles 69.0 70 12.0 69-70 21 76.0 12.0 75-76 80 81.0 12.0 81-82 SAND (SM) 82-84' - reddish brown, moist, (dense), very fine to coarse grained, some silt. Pebbles, cobbles PID (90'): 6.0ppm SILTY SAND (SP) 90 84-97' - reddish brown, moist, (loose), medium to fine grained, some gravets, Some black staining/mottling at 96-97' bgs 96.0 LNAPL well screen from 95 to 125 12.0 96-97 100



PROJECT	NUMBER
34451	1

EW-12

SHEET 2 OF 2

SOIL BORING LOG

PROJECT : Extraotion Well Installation 2011, Siren, WI	LOCATION : Siren, Wi
FLEVATION:	DRILLING CONTRACTOR : Lavne Christensen

DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonio WATER LEVELS: 102.0 ft below ground surface START: 12/2/2010 END: 12/7/2010 LOGGER: Haas/Lippincott DEPTH BELOW EXISTING GRADE (ft) SOIL DESCRIPTION COMMENTS INTERVAL (ft) SYMBOLLIC SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION RECOVERY (In) SAMPLE ID (TIME) 5 SILTY SAND (SP) 97-98 - boulder encountered, shaller zone recovered SAND (ML) 98-110' - reddish brown, moist, (loose), coarse to fine grained, little silt and gravels 110 SANDY SILT (SP) PID (110'): 0.2ppm 110-115' - reddish brown, moist, very fine grained, some cobbles and gravels SILTY SAND (SP) 115-120' - reddish brown, (medium dense), medium to fine grained, little gravels and trace cobbles, some 120 poorly sorted coarse sand lenses, mostly well sorted PIO (125"): 2.2ppm sands with silt. (SP) 120-130' - Same as 115-120 except reddish brown 130 Extraction well screen installed from 130 to (ML) 130-132' - Same as 115-120 except reddish brown PID (130'); 0,8ppm SANDY-CLAYEY SILT (ML) PID (135'): 1.1ppm 132-144' - reddish brown to brown, fine grained, some gravels and cobbles. 140 **BOULDERS/SHATTERS ROCK PIECES AND** PID (145'): 9.2ppm COBBLES (ML) 144-148' - some clay/slits in matrix and coatings 150 GRAVELLY, SANDY, CLAYEY SILT (ML) PID (154'): 1.3ppm 148-150' - reddish brown, (dense), coarse grained, PID (155'); 2.2ppm some cobbles and pebbles SANDY, CLAYEY, SILT (SP) 150-160' - reddish brown, moist, (dense), some gravel and cobbles, welter/sandler lense from 160 156-157 and 158-160' PID (160'): 1.2ppm POLVERIZED BOULDERS AND COBBLES 160-164' - dry, coarse grained, some clays and slits, some cemented till chunks EOB @ 1641 bgs Bottom of Boring at 164.0 ft below ground surface



PROJECT NUME	E	R
344511		

EW-13

SHEET 1 OF 2

SOIL BORING LOG

PROJECT	- Eutro	ollon M.	All Installe	11an 2011	Ciron 18/

LOCATION: Siren, WI

ELEVATION:

DRILLING CONTRACTOR: Layne Christensen

DRILLING METHOD AND EQUIPMENT: SDC500-28E, Sonic

			elow ground surface	START : 11/23/2010	END:		LOGGER : Haas
EPTH		XISTING GRA	ADE (R)	SOIL DESCRIPTION	8	<u> </u>	COMMENTS
	INTERV	AL (ft)	Y (in)	SOIL NAME, USCS GROUP SYMBOL, CO MOISTURE CONTENT, RELATIVE DENSI	TYOR IQ	(wide	DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
		ΙΓ	SAMPLE ID (TIME)	CONSISTENCY, SOIL STRUCTURE, MINER	ALOGY	PID (ppm)	INSTRUMENTATION
_	6,0			SAND (SM) 0-3' - Reddish brown, moist, medium coarse to sorted, medium dense	o fine,	() ()	PID (6'): 12ppm
0		12.0	6-7'	ORGANICS (SM) 3-8' - Brown, wet, fill, wood fragments, loose SAND (SP)		12	
-	12.0	12.0	12-13'	8-12' - Brown, moist, slightly slity, little clay, mostlift to medium dense	edium	24	PID (13'): 24ppm
0				SAND (SM) 12-22' - Brown, reddish brown, moist, medium to coarse	содгве		
	25.0	12.0	25-26'	SAND (SM) 22-28' - Brown, moist, dense, with trace clay		18	PiD (25'): 18ppm
) 				SILTY SAND (SM) 28-40' - Brown, moist, medium dense, coarsa, clay,	little -		PID (37'): 1ppm
,	37.0	12.0	37-38'			1	
	43.0	12.0	43-441	SAND (SP) 40-58' - Red, reddish brown, moist, very coars	e, loose	3	PID (44'): 3ppm PID (55'): 81ppm
-					-		
1	54.0	12.0	54-55'			81	
-				SAND (SP) 58-72' - Brown, reddish brown, moist, medium loose	sorted,		PID (65'): 1ppm
-	65.0	12.0	65-661			,	
-				SAND (SW) 72-68' - Red, brown, black, moist, loose, very c	oarse		PID (79'): 34ppm PID (85'): 1ppm
	78.0	12.0	78-79'			34	
2	86.0						
1		12,0	86-87'		<u> </u>	1 1	
			,	SAND (SP) 86-100' - wet, poorly sorted, loose with small to cobbles	large		PID (97'): 3ppm
~	97.0						LNAPL well screen from 95 to 125
4	01.0			-3	F *. •		
<u>†</u> ,	37.0	12.0	97-98'			3	



PROJECT NUMBE	R
344511	

EW-13

SHEET 2 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI	LOCATION: Siren, WI
ELEVATION:	DRILLING CONTRACTOR: Layne Christensen

DRILLING METHOD AND EQUIPMENT: SDC500-28E, Sonio START: 11/23/2010 END: LOGGER: Haas WATER LEVELS: 106.0 ft below ground surface SOIL DESCRIPTION COMMENTS DEPTH BELOW EXISTING GRADE (A) INTERVAL (ft) SYMBOLLIC SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION RECOVERY (in) SAMPLE ID (TIME) SAND (SP) 100-125' - Reddish brown, wet, loose, stiff, very PID (110'): 9ppm Observed water table at 108' bgs. 101.0 12.0 101-102 coarse, with cobbles, lenses of clayey silt with some 110 117.0 12.0 117-118 120 126.0 SAND (SP) 125-143' - Reddish brown, wet, loose, very coarse PID (120'); 3ppm 12,0 126-127 130 135.0 12.0 135-136' Extraction well screen from 135 to 155 140 SILT (SM) PID (143'): 8ppm 143-155' - Brown, moist, dense, some cobbles 150 PID (169'): 10ppm 155-170 - Reddish brown, wet, loose, sift and cobbles EOB @ 170 bgs 160 170 Bottom of Boring at 170.0 ft below ground surface



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344511

BORING NUMBER:

EW-14

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, Wi	LOCATION : Siren, Wi
ELEVATION:	DRILLING CONTRACTOR : Layne Christensen

DRILLING METHOD AND EQUIPMENT; SDC500-28E, Sonic END: 11/22/2010 LOGGER: Haas/Niebauer START: 11/19/2010 SOIL DESCRIPTION COMMENTS DEPTH BELOW EXISTING GRADE (II) INTERVAL (ft) SYMBOLLIC DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY RECOVERY (in) SAMPLE ID (TIME) DARK TOPSOIL 0-2' - (loose) PID: 7.5 4.0 SILT (ML) 12.0 4-5 6.0 2-15' - Dark brown, moist, (loose), With little sand 6-7 12.0 (Fill), 7.5YR 3/3, odor, wood chips, stained organio 10 12.0 12.0 12-13 SAND (SP) PID: 5.5 15-20' - Brown, moist to dry, wi silt, no organics, PID 4.5 20 7.5YR 4/4, odor SANDY SILT (ML) PID: 0.0 20-25' - moist SAND (SP) PID: 3.5 25-30' - Derk brown, moist, trace clay, 7.5YR, 2.5/3 PID: 8.8 30 PID: 10.6 30.0 12.0 SAND (SP) Some water injected 12.0 30-31 30-32' - Dark brown, moist PID: 6.0 SILT WI GRAVEL (ML) 36.0 32-39' - Pinkish gray, dry, (loose) 48.0 36-40 40 GRAVEL W/ SAND (GW) PID: 42.2 39-41' - Pinkish gray, dry, (loose) Injected Water SAND (SP) 45.0 41-48' - Brown w/ black specks, moist, (dense), 12.0 45-46 coarse grained SILT WI GRAVEL (ML) 50 46-50' - Pinkish gray, dry, (loose), coarse grained SAND W/SILT (SP) 50-55' - Brown to dark brown, moist, (loose), coarse 55.0 grained 55-56' PID: 1.2 12,0 SAND (GW) 55-60' - Reddish brown, moist, (loose), coarse 80 PID: 6 grained SAND AND GRAVEL (GW) PID: 11 60-70' - Reddish brown to brown, moist, (loose) PID: 23 PID: 80 70 SAND AND COBBLES (GW) PID: 1130 70-85' - Brown, moist, (loose), coarse grained PID: 2315 PID: 4630 76,0 PIO: 1715 12.0 76-77 PID: 2900 PID: 4300 80 PID: 2150 83.0 12.0 83-84 SAND AND COBBLES (GW) PID: 1300 PID: 610 PID: 230 85-90' - Reddish brown, moist, (medium dense), 90 coarse grained SAND AND COBBLES (GW) 90-105' - Brown to reddish brown, moist, (loose), coarse grained LNAPL well screen from 98 to 128 100



PROJECT NUMBER:	BORING NUMBER:					
344511	EW-14	SHEET	2	OF	2	

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI	LOCATION : Sizen, WI
ELEVATION:	DRILLING CONTRACTOR; Layne Christensen

DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonio START: 11/19/2010 END: 11/22/2010 LOGGER: Haas/Niebauer WATER LEVELS: 105.0 ft below ground surface SOIL DESCRIPTION COMMENTS DEPTH BELOW EXISTING GRADE (R) INTERVAL (ft) SYMBOLLIC SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION RECOVERY (In) SAMPLE ID (TIME) 103.0 12.0 103-104' SAND AND COBBLES (GW) Water Table observed at 113' 105-120' - Brown, moist, (medium dense), coarse 110 120 SAND (SP) 120-135' - Brown, wet, (medlum dense), medium to PID: 5 PID: 3 fine grained 130_ Extraction well screen from 133 to 153 SAND (SP) 135-150' - Brown to dark brown, wet, (stiff), (dense), PID: 4 PID: 3 PÍD: 2 140 fine grained PID: 3 150 SILTY SAND W/ COBBLES (GW) PID: 3 150-160' - Brown to dark brown, wet, (soft to stiff), (loose to dense), coarse to very fine grained PID: 4 PID: 6 160 SAND (SP) 160-175' - Dark brown, wet, (stiff), (dense), coarse to PID: 5 PID: 1 fine grained PID: 15 PID: 3 170 EOB: 175' Bottom of Boring at 175.0 ft below ground surface



PROJECT	NUMBER
34451	1

MW-27

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI	LOCATION : Siren, WI
ELEVATION;	DRILLING CONTRACTOR: Layne Christensen

DRILLING METHOD AND EQUIPMENT: SDC500-28E, Sonic WATER LEVELS: 122.0 ft below ground surface END: 12/16/2010 LOGGER: Scherin/Hass START: 12/15/2010 SOIL DESCRIPTION COMMENTS DEPTH BELOW EXISTING GRADE (ft) INTERVAL (ft) SYMBOLLIC SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION RECOVERY (In) SAMPLE ID WOOD CHIPS PID (5'): 1ppm 0-15' - Brown, wet, (loose), Fill 5.0 12.0 5-6 10 PID (18'): 2ppm PID (29'): 29ppm SAND (SP) 18.0 15-35' - Reddish Brown, moist to wet, (loose) 12.0 18-19 20 29.0 30 12,0 29-301 29 SAND W/ COBBLES (GW) PID (39'): 38ppm 35-45' - Brown, moist to wet, (loose) 39.0 40 12,0 39-40 38 SAND W/ COBBLES (GW) PID (49'): 18ppm 45-70' - Brown, moist to wet, (loose), coarse grained PID (55'): 17ppm 49.0 50 12.0 49-50 56.0 12.0 56-57 17 60 67.0 12.0 67-68 70 SAND W/ COBBLES (GW) 70-82' - Brown, wet, (loose), coarse grained 78.0 12.0 78-79 80 SAND W/ COBBLES (GW) 82-95' - Brown, wet, (very loose), coarse grained 90 PID (96'): 5ppm PID (108'): 3ppm PID (115'): 2ppm SANDY SILT W/ COBBLES (SP-SM) 97.0 95-125' - Brown, moist, (very dense) 12.0 97-98 5 100



3/4511 MW-27 SUPER 2 OF 2	PROJECT NUMBER:	BORING NUMBER:					
OTTO I	344511	MW-27	SHEET	2	OF	2	

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, WI	LOCATION : Siren, WI
ELEVATION:	DRILLING CONTRACTOR : Layne Christensen
DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonio	

		3 : 122.0 ft XISTING GF	below ground surface	START : 12/15/2010 SOIL DESCRIPTION	END : 12/1		10	LOGGER: Scherin/Hass COMMENTS
			ADE (r)	SOIL DESCRIPTION		ဒ္ဒ		COMMENTS
	INTERV	AL (ft) RECOVER	av Hua	SOIL NAME, USCS GROUP SYMBOL, C MOISTURE CONTENT, RELATIVE DENS	OLOR,	SYMBOLLIC LOG	2	DEPTH OF CASING, DRILLING RATE,
ļ		RECOVER		MOISTURE CONTENT, RELATIVE DENS CONSISTENCY, SOIL STRUCTURE, MINE	ITY OR RALOGY	ğ.	PiD (ppm)	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
			SAMPLE ID (TIME)			S	5	
4					-			
1					 			
1	108.0	12.0	108-109		-		3	
7	116.0				E .			
1	11010	12.0	116-117'		-		2	
					<u></u>			
*				SILTY SAND W/ COBBLES (SP-SM) 125-135' - Brown, moist to wet, (very dense)	£			TD: 135'
7				,		! : [
1					_	1		
1				Bottom of Boring at 135.0 ft below ground sur	face -	1.4		
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					-			
İ					-			
l					4			
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PROJECT NUMB	₽R
344511	

MW-28

SHEET 1 OF 2

SOIL BORING LOG

PROJECT : Extraction Well Installation 2011, Siren, Wi

LOCATION: Siren, WI

ELEVATION:

DRILLING CONTRACTOR: Layne Christensen

DRILLING METHOD AND EQUIPMENT : SDC500-28E, Sonio

			low ground surface		D:			LOGGER: Callin Lipping	
PTH	BELOW E	XISTING GRA	NDE (R)	SOIL DESCRIPTION		8	L.,	COMMENTS	
	INTERV	AL (fi) RECOVER'	/ (In)	SOIL NAME, USCS GROUP SYMBOL, COLOR MOISTURE CONTENT, RELATIVE DENSITY OF	₹	SYMBOLLICLOG	(wdd)	DEPTH OF CASING, DRILLING RATI DRILLING FLUID LOSS, TESTS, AN	E,
			SAMPLE ID (TIME)	CONSISTENCY, SOIL STRUCTURE, MINERALO		SYMB	PiD (p	INSTRUMENTATION	
0	9,0 10,0	72.0		SILTY SAND (SP) 0-6' - dark reddish brown to brown, moist, (loose), was orted, Some silts, trace gravels. Some grey to blacted sand concretions or clumps, easily breakable with some silts. SAND (SP)	ell -		0.4	PID: 0.4ppm	71.1
-		120.0		6-14' - No recovery - fell out cone barrel, sand, loos (SP) 14-16' - Same as 0-6			0.2	PJD: 0.3ppm PID: 0.6ppm	
o	20,0	120.0	<u></u>	SILTY SAND (SP) 16-20' - tan, dry, (loose), medium to coarse grained trace gravels, increase in moisture at 20' (SP)				PID: 0.3ppm	
) 	30,0	120.0		20-30' - Same as 16-20 except molst, (loose), Lense from 23-24 and 27-28' which is med sand and mois SILTY SAND (SP) 30-38' - reddish brown, moist, (loose), medium to fir grained, some coarse silty sand, some gravet,	-		D.5	PID: 0.8ppm	
)	40.0	120.0		pulverized rock/bouler and rock PULVERIZED ROCK/BOULER AND ROCK FRAGMENTS (SP) 38-40'	<i></i>		0,3	PID: 2.4ppm PID: 1ppm	
1 1 1	50.0	120.0		SiLTY SAND (SP) 40-45' - moist, medium grained, some gravels, becoming siltier @ 45' SiLTY SAND (SP) 45-50' - reddish brown to brown, medium to fine			0.3	PID: 8.4ppm	
1 1 1 1		120.0		grained, some gravel. Pulverized boulder and rock fragments present. Unshattered material is loose an moist MEDIUM GRAINED SILTY SAND (SP)	_//-		0,6	T ab. Ծո ղ վայու	
1	60.0	120.0		50-54' - brown to reddish brown, molst, (loose), som gravets SILTY SAND AND GRAVEL (SP) 54-60' - (loose), poorly sorted, Pulverized material, silty sand and gravel, many pebbles and cobbles,			0.3	PID: 1ppm	
,	70.0	120.0	aller e e e e e e e e e e e e e e e e e e	Small lense of wetter coarse sand material from 57-58' SILTY SAND (SM) 60-65' - reddish brown to brown, medium to coarse				PID: 0.1ppm	
-	80,0			grained, some gravels and pebbles/cobbles PULVERIZED MATERIAL (SP) 65-70' - dry, (loose), some gravels and cobbles, 4" Ithick seam of only gravels and no pulverized material			0.6	PID: 0.2ppm	
, , ,		120.0		at 67'. SAND (SP) 70-75' - reddish brown to brown, moist, (loose), medium to coarse grained, Trace pebbles and cobbles, some grayels.			2.4	PID: 0.2ppm PID: 0.2ppm PID: 0.8ppm	
-	90.0	120.0		PULVERIZED MATERIAL. 176-79' - dry, (loose), lots of pebbles and gravel in las 12" SAA, MED TO COARSE SAND (SP)			ţ	PID: 1.1ppm	
,	100.0			79-80' - Same as 70-76	_#	ПŤ	- [PID: 1.4ppm	



PROJECT	NUMBER
PROJECT 34451	1

MW-28

SHEET 2 OF 2

SOIL BORING LOG

PROJEC	CT : Extr	action W	Vell Installation 2011, Sire	en, WI LOCATION : Siren, WI	
ELEVAT				DRILLING CONTRACTOR : Layne Christensen	
,,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		OD AND	D EQUIPMENT : SDC500	0-28E, Sonio	_
			t below ground surface	START : 12/8/2010 END : LOGGER : Cailin Lippincott	
			GRADE (A)		_
	INTERV	AL (ft)		SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY SOIL DESCRIPTION COMMENTS COMMENTS DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	_
		RECOV	/ERY (in)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR S DRILLING FLUID LOSS, TESTS, AND	
			SAMPLE ID	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY BETTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION	
	100.0	240,0	(TIME)	(SILTY SAND (SP)	-
1 -	100,0	A-1		1/80-86' - reddish brown to tan, moist, (foose), medium	
_	1			to fine grained, well sorted, some gravel	
440 ~	ļ '				
110_	 			SILTY SAND (SP) 87-90' - reddish tan to tan, dry, (loose), medium to	-
				fine grained loose and dry. little cobbles and gravels.	
-	'			Bottom 6" is moist and slitter and slightly denser.	
120	120.0			90-87' - brown, wet, (loose), coarse grained, poorly PID: 1ppm	
144_	JENA	120.0		Sorted, some pebbles and gravel GRAVELLY SILT (GM) BOB @ 140' bgs To set well from 115-135' bgs	_
				197-100' - reddish brown to brown, wet. (dense). More	
	'			fractured from drilling. Some dense clumps. Some cobbles and pebbles.	
130	'			SILTY GRAVEL (SP)	
	'			100-110' - brown, wet, (loose), poorly sorted, mostly gravels and pebbles with some sitty sand and cobbles -	•
	. '			SILTY SAND (SP)	
4	1 1			110-118' - reddish brown, moist to wet, (medium dense to loose), line grained, Trace gravels.	
140	1			(GM)	*****
				118-120' - Same as 100-110 except silty gravel with sand and pebbles	
	'	1		Bottom of Boring at 140.0 ft below ground surface	
	1 1	1		1 1	
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Appendix B Well Construction Diagrams



PROJECT NUMBER

344511

WELL NUMBER

EW-12

SHEET 1

Extraction Well Next Completion Diagram

Pentawood Products Superfund Site PROJECT: Extraction Well Installation LOCATION: DRILLING CONTRACTOR Layne Christensen 3682 Daniels 70, Siren Wi DRILLING METHOD AND EQUIPMENT USED: Sonic Drill, SDC500-28E Craig Haas WATER LEVELS: ~102 ft bgs 12/7/2010 12/2/2010 LOGGER: 1 4-inch steel riser (flush threaded, sch. 40 steel) 2 Free product recovery well 3 6-inch steel riser (flush threaded, sch. 40 steel) 2 4 groundwater extraction well 5 Bentonite slurry tremie pumped 6 Bentonite seal 95' 125' 7 4-inch stainless steel, wire wrapped screen (#15 slot) 8 Filter pack 9 6-inch stainless steel, wire wrapped screen (#65 slot) 130 6 150' 7 Development method surge, bail and pump Development time #20 127 Estimated Purge volume #60 Comments 20' #20 sand (Red Flint) #60 gravel (Red Flint) Stainless steel screens = Type 304



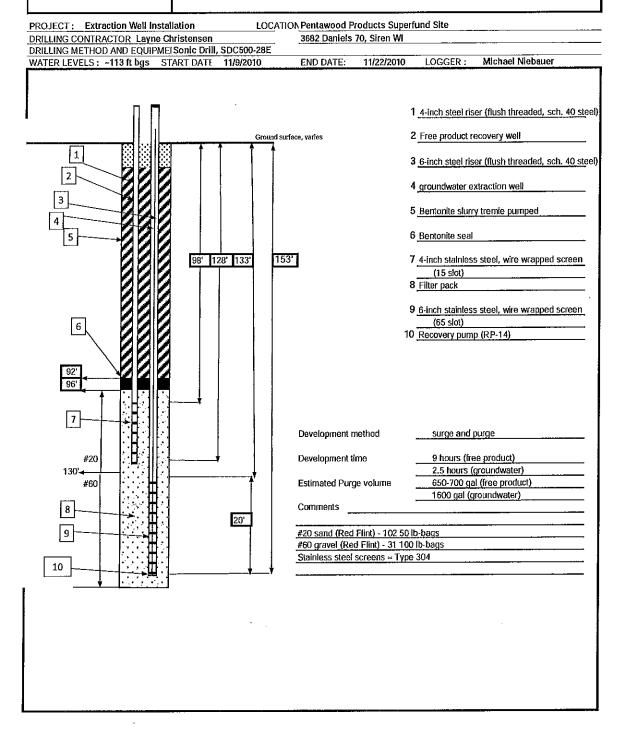
PROJECT NUMBER WELL NUMBER
344511 EW

EW-14

SHEET 1

OF 1

Extraction Well Next Completion Diagram





PROJECT NUMBER

344511

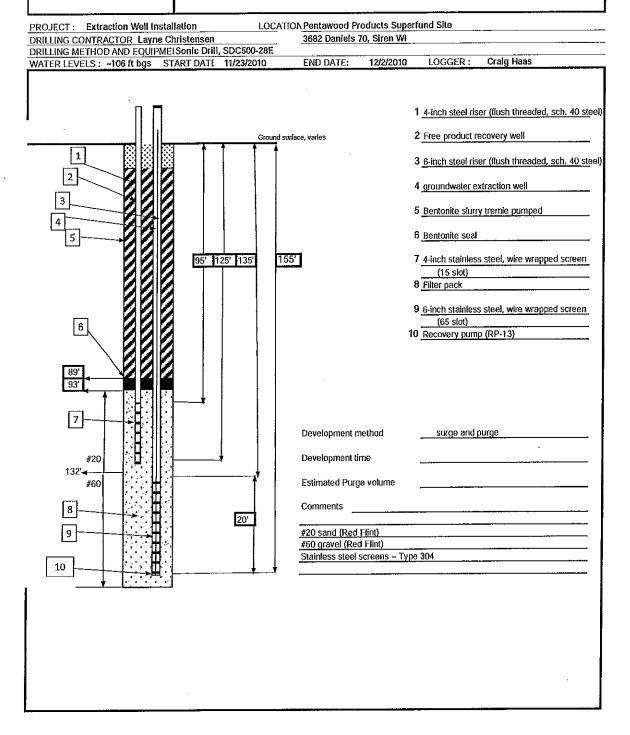
WELL NUMBER

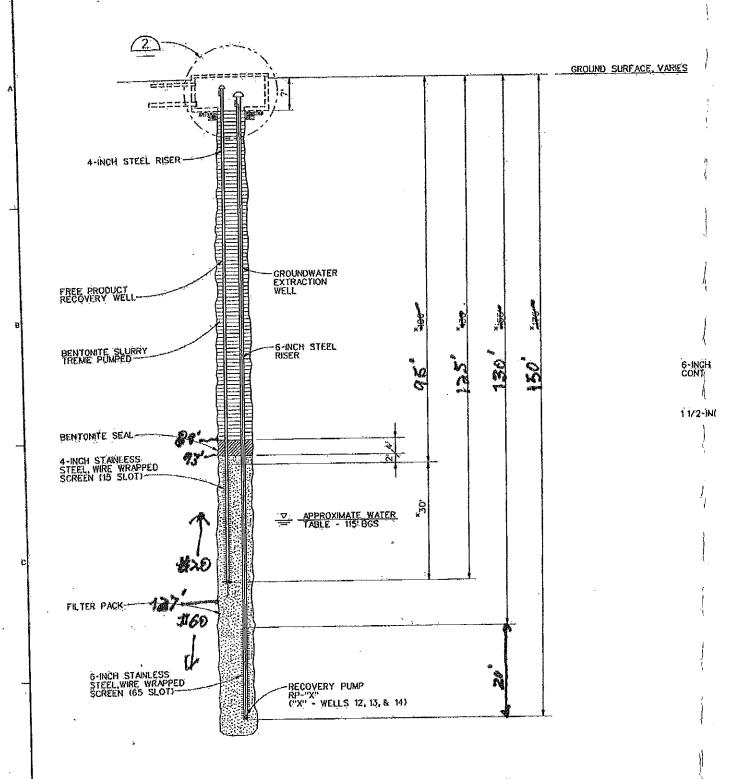
EW-13

SHEET 1

OF 1

Extraction Well Next Completion Diagram

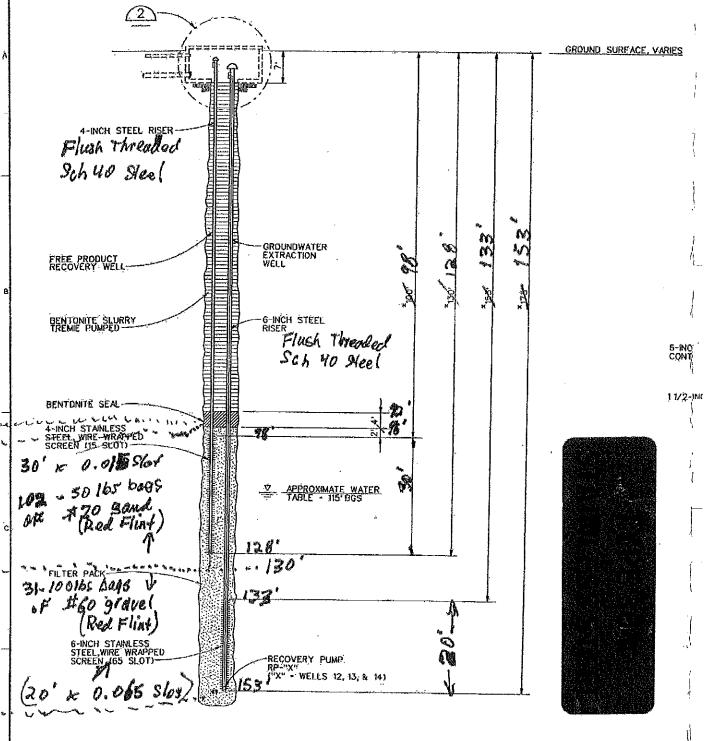


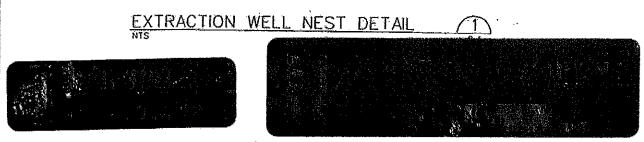


EXTRACTION WELL NEST DETAIL

EW-14

61-04-2011 C. Hans





OATE:

LAYNE-NORTHWEST COMPANY TEST OF WELL

Water 1012 TOTAL COT OF 10094 160 Sept do an obtain 200 In Darkerin VESY LITTLE 150 Did wet SEE wordly any Sould いからいば CITLE SCHEEN Scheen on very little WATER APPEARANCE: CLEAR, CLOUDY, MURKY, MUDDY, SANDY, TEMP, ODOR 3 3 FEEK milky if Brown TESTED BY: A 4/10/2 TO TALL PIPE / O.L. & いぎぐ 人名りよう Shaptily Charly 8.62.5 ; C.62.21.4 d Bow **CLEANNY** O LOUTY Charty PUMP SET TO DISCHARGE NOZZLE: Jose ! CENTER OF GALGE TO GROUND LEVEL Choutty MIKA Chest 3 RATE OF RECOVERY OR AMPS HEAD PRESSURE PSI 866 86 7 d 6 80 SPECIFIC YIELD DFAWDOWN IN FEET STANCLEVEL: 1/4. DIA. ORIFICE: LENGTH OF AIRLINE DRILLED BY: PUMPING LEVEL FT. J. 121 677 アンニ (17.5 193 187 (13) 18 5 ALT GA 14.4 C(C)7 百分 1.01. 1192 INCHES ON ORIFICE 200 300 32 G P.M Ad 4 d WELL DEPTH (28.6 LOCATION: SIZEU TIME WELL NO. 14.K28 185 28 € では D:5018 8 302 24 J (4 B4 いがは 2 43 N 28 ロバイマ 4.35.19 READING 14 457 Q:30 \ \ \ -Characteria SHOT BOW 12/2

PAGE 1 OF 1 PAGES

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Appendix C WDNR Well Submittals

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N	٧,	

State of Wisconsin Department of Natural Resources Route to: Watershed/Was	swater Was	ne Management	MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 7-98
Remediation/Re	development Oth	<u>cr]</u>	hrr. 44 17
Pacility/Project Name Local Grid Lo	ration of Well N.	. □B.	Well Name Pentawood MW#28
Pentawong Products	2E. (7.8)		1
Facility License, Permit or Monitoring No. Local Grid Orl	gin 🔲 (estimated: D	() or Well Location IX	Wis. Unique Well No. DNR Well ID No.
Lat, 45 ° 47	13 Long.	92 <u>* 25 * 8 "</u> or	VX855
Pacility ID St. Plane	ft, N,	fi. e. s/c/n	Date Woll Installe 12 / 10 / 2010
- 011111110	on of Waste/Source		mmdd y y y y y .
77 5317.11		r. n.r. 🛮 🕏	Well Installed By: Name (first, last) and Firm
	1/4 of Sec,,7		Scott Schwerin
	ell Relative to Waste/Si ient s 🔲 Sides	ource Gov. Lot Number	
			Layne Christensen Company
	radient n 🗀 Not l	1. Cap and look?	X Yes D No
A. Protective pipe, top elevation 3 ft. MS		2. Proteotive cover	
B. Well casing, top elevation	·╱──╫╬	a. Inside diamete	· · · · · · · · · · · · · · · · · · ·
Di aran aaringi taj aran aran aran aran aran aran aran ar			5. <u> </u>
C. Land surface elevation ft. MS.	ا الحا	b. Length:	
		o Material:	Steel IXI 04
D. Surface seal, bottom ft. MSL or 3		XXX	Other 🗆 💮
12. USCS classification of soil near screen:	A CHEST	d. Additional pro	teotion?
GP II GMI I GC II GW II SW II SP I		If yes, describ	
SM SC MLD MHD CL CH C		()	Bentonite 🛚 30
Bedrock 🗆		3. Surface scal:	Concrete IX 01
13. Sieve analysis performed? ☐ Yos ☐ No		\	Other 🗆 🎆
-		4 Material between	wall easing and protective pipe;
14. Drilling method used: Rotary 5 0		W. Hilliottat Doctroom	Bentonite □ 30
Hollow Stem Auger 41			Other 🗆 🥨
Other D		-	a. Granular/Chinned Bentonito [1] 33
		5. Annular space se	
15. Drilling fluid used: Water □ 02 Air □ 01		b,Lbs/gal n	nud weight Bentonite-sand slurry 35
Drilling Mud 🖂 03 Nono 🖂 99		c. Lbs/gal u	and weight Bentonite slurry 🗀 🗓 🗀
		a 20 % Benton	te Bentonite-cement grout the 50
16. Drilling additives used? ☐ Yes ☐ No		66Ft	volume added for any of the above
	· 🐼 🔯	f. How installed	7L1- 7 1 1 1
Describe		L)	Tremie pumped IX 02
17. Source of water (attach analysis, if required):			Gravity 🗆 08
		6. Bentonite seal:	a, Bentonite granules 🔲 33
			3/8 in. 1/2 in. Bentonite chips X 32
107'E		p, 11,4111 ==	Other 🗆 🎇
E. Bentonite seal, topft. MSL or _107.5_	·"`\	Ç.,	41111
		7. Fine sand meterle	al: Manufacturer, product name & mesh size
P. Fine sand, top ft, MSL or _ 111	"/ /	Red Flint Well	
112			
G. Filter pack, top ft. MSL or _113		b, Yolume added	
44.0		8. Filter pack mater	ial: Manufacturer, product name & mesh size
H. Screen joint, top ft. MSL or _115	1111	a, Red Flint Well	
		ь, Volume addo	1.5R ³
I. Well bottom ft. MSL or _ 135	A. Maria	9. Well casing:	Flush threaded PVC schedule 40 🔲 23
			Flush threaded PVC schedule 80 IX 24
J. Filter pack, bottomft. MSL or 140	A	_	Other 🗆 🎇
24 Times broad consume the wife was a second to the comme		10. Screen material:	
K. Borchole, bottom ft. MSL or _ 140	ft.	a. Screen type:	Pactory cut X 11
K. Borenote, Dolton		a. Delbeil typol	Continuous slot 🔲 01
			Other 🗆 💥
L, Borehole, diameter _ 6.62_ in.	\		Monaffey Office 12 2020
		b. Manufacturer	0.01 in.
M. O.D. well easing 2.4 in.		o. Sint sizer	
•		d. Slotted length	Pez
N. I.D. well casing _ 2 in.		11. Backfill material	
			Other 🛘 🎆
I hereby certify that the information on this form is true an	d correct to the best of	my knowledge.	
Signature	Firm	<u></u>	
m.D.mm.A	Layne Christen	sen Сошрялу	

Layne Christensen Company

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chr. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not Intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

¥,

	tershed/Wastewater		MONITORING WELL CONSTRUCTION Form 4400-113A Roy, 7-98
Facility/Project Name Lo	nediation/Redevelopment cal Grid Location of Well r.	Other	Well Name
Pentawood Products	<u></u>	Kfr. DY	Pentawood MW#27
Facility License, Permit or Monitoring No. Lo	cal Grid Origin	ted: [X] or Well Location	IX Wis. Unique Well No. DNR Well ID No. UN Well ID No. UN Well ID No.
	. Plano ft. N,		
Se Se	ction Location of Waste/Sour		m m a a v <u>v v v </u>
Type of Well	1/4 of 1/4 of Sec	,TN,R	Well Installed By: Name (first, last) and Pirm Scott Schwerin
Well Code	retion of Well Relative to Wa	aste/Source Gov. Lot Number Sidegradient	ar —
Sourceff, Apply D	Downgradient n	Not Known -	Layne Christensen Company
A. Protective pipe, top elevation3		1. Cap and lock	
B. Well dasing, top elevation2.5_	fi.MSL	2. Protective cov	
*** *	ft.MSL	b, Length:	5 ft.
	That 1.41	c, Material:	Steel IXI 04
D. Surface seal, bottom ft, MSL	or 3 n.	d. Additional	or Other □ ∰
12. USCS classification of soil near screen:			protection:
GP I GMI GCI GW I SW SM I SC I ML MH CL	i čir i i	LII \ \	Bentonite □ 30
Bedrock 🗆		3, Surface seal:	Concrete X 01
	: 🗆 1No	W \	Other 🗆 🎎
	, □ 50	4. Material betw	cen well casing and protective pipe: Bentonite 30
Hollow Stem Auge			Other 🗆 🧱
- Oine	38698	5. Annular space	a. Granular/Chipped Bentonite [33
	ir □ 01 🔛	Lbs/g	al mud weight Bentonite-sand slurry Li 30
Drilling Mud [] 0 3 Nor	16 🗆 99	Lbs/e	al mud weight Bentonite slurry 🔲 31
16. Drilling additives used?	: □ No	d. 20 % Ber	ntonite Bentonite-cement grout X 50 Ft 3 volume added for any of the above
TO DIEDING WANTED TO THE TOTAL OF THE TOTAL			Throate II or
Describe	🕷	f, How insta	Tremle pumped IX 02
17. Source of water (attach analysis, if require	d);		Gravity 🖸 08
		6. Bentonite sea	
E. Bentonite seal, topft. MSL o	108 ft.	b, □1/4 in.	X3/8 in. □1/2 in. Bentonlte chips X 32 Other □
e, regiong seal of if his c	"_100		terial: Manufacturer, product name & mesh size
F. Fine sand, top ft, MSL c	л _ 111 ft.	a. Red Flint V	
G. Filter pack, top ft. MSL o	or 113 ft.	h. Voluma so	Idea_0.5n3
• • • • • • • • • • • • • • • • • • • •		8. Filter pack m	aterial: Manufacturer, product name & mesh size
H. Screen joint, top ft. MSL c		a, Red Flint V	
I. Well bottom ft. MSL c	or_135ft.\	b. Volume at 9. Well casing:	Flush threaded PVC schedule 40 23
			Flush threaded PVC schedule 80 IX 24
J. Filter pack, bottom ft. MSL c	п_136 п.		Other 🗆
K. Borchole, bottom ft. MSL c	v 136 fts	10. Screen mater a. Screen typ	ta ber a a
K. Horenole, Bottom	"	H. Scheenty	Continuous slot 🚨 01
L. Borehole, diameter6.62_ in.	. 1882		Other 🗆 🎇
		b. Manufactu c. Siot size:	rer Monoilex 0.01 in,
M. O.D. well casing _ 2.4 in.		d. Slotted let	ngth; 20 ft.
N. I.D. well casing 2 in.		1	rial (below filter pack): None X 14
-			Other 🗆 🌉
I hereby certify that the information on this for	rm is true and correct to the be	est of my knowledge.	
Signature		ristensen Company	

Please complete both Forms 4400-113B and 4400-113B and return them to the appropriate DNR affice and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTB: See the instructions for more information, including where the completed forms should be

State of Wisconsin Department of Natural Resources Route to:	Vatershed/Wastowater]	Waste Mar other ☐	nagement 🗌	MONITORING WELL Form 4400-113A	L CONSTRUCT Rev. 7-98	TION
Pacility/Project Name Pentawood Products	lemediation/Redevelopment Local Grid Location of We	el □p.		Well Name Penta E	W12 6"	
Facility License, Permit or Monitoring No.	Local Grid Origin	stimated: [X, } or	Well Location [X	Wis. Unique Well NoVX857		No.
Facility ID	St. Plane	ft. N,	n. b. s/c/n	Date Well Installe 02	02_/_2011_	
Type of Well Well Code 26 / ew	Section Location of Waste	Seo,T		Mell installed By: Na	me (first, last) and indel	l Pirm
Distance from Waste/ Enf. Stds.		: 🔲 Sidegradien		Layne Christensen		
A. Protective pipe, top elevation	d Downgradient r	•	I. Cap and lock?	, , , , , , , , , , , , , , , , , , , ,	[X Yes []	No
	n. MSL		2. Projective cover p	•	48	.in.
~1	ft. MSL		b. Longth:	•	8	
	Laborate 1	3 330230	o. Material:			
D. Surface seal, bottom ft. MS	Lor .40 ft. 93334		HDPE - below	y grade yault		
12. USCS classification of soil near screen	1.	1 1 March	d. Additional pro		☐ Yes ☐ ?	No
GP GM GC GW S			If yes, describe	3)		
SM SC ML MH C	хисниј у	御 翼 \ `	3, Surface seal:		Bentonite IX	30
	Ven Fints				Concrete D	01 ****
1	Yes 🗆 No	 	Bentonite Chips	N - 1 - 1 - 1 - 1		
14. Drilling method used: Rot	7		4. Malerial between	well casing and protecti	eve pipe: Bentonite 🗆	30
Hollow Stem Av		₩ ₩				
	ther 🗆 🎆	88 88		al: a. Granular/Chipp		33
AS TO STATE OF THE	Air □ 01		5. Annular space sea			35
15. Drilling fluid used; Water □ 0 2 Drilling Mud □ 0 3	Ione 🗆 99		bLbs/gal n	and weight Bentonite	3-sand sturry L	31
Diking waa [102]	(one L))	₩ ₩	c,Lbs/gal m	uid weight Bent	onite slurry	50
16. Drilling additives used?	Yes □ No		d, 20 % Benion	ite Bentonite e	-care stone	3 V
10: Dithing Roomron bases		₩ ₩	v. – —-	volume added for any o	or una accova Tremle 🔲	01
Describe	-	₩ ₩	f. How installed:	· m	nie pumped IX	
17. Source of water (attach analysis, if requ	rired):			1101	Gravity 🗆	
17. COMPOS ON HANDER COMPONE TO TAKE		₩ ₩	e Manus afternasi.	n Rentem	ite granules 🗆	33
		* **	6. Bentonite seal:	3/8 in. 🗆 1/2 in. Ber		
6.346	r 00 A	3	b, ш1/4 m, м,			
E. Bentonite seal, top ft. MS	\ 1		7 Fine and materia	d: Manufacturer, produ		
P. Fine aand, top ft, MS	L or _ 93ft.		a. Red Flint Well			
G. Filter pack, top ft. MS	Lor_126ft.		b. Volume added	_40n		
H. Screen joint, top ft. MS	L or _ 130 ft.		a. Red Flint Well	al: Manufacturer, produ Slot #60		1 8126
I. Well bottom ft. MS	L or _ 150 ft.		 b. Volume added 9. Well casing: 	Flush threaded PVC so		23
J. Filter pack, boltom ft. MS	Lor 151.5 ft.		6" FJ CS Pipe	Flush threaded PVC so		24 24
		1	0. Screen material:	FJ SS Screen 304		
K, Horehole, bottom ft. MS	L or _ 151.5_ft.		a. Screen type:			11
L. Borehole, diameter16 in,	`		b. Manufacturer	Johnson Sereen	Other 🗆	꽳
M. O.D. well casing 6.62_ in.		/	c. Slot size: d. Slotted length:			
N. I.D. well casing 6 in.	÷.	1	1. Backfill material	(below filter pack):	None 🗆	14
		417 4	Red Flint Well	2101 400	Other IX	
I hereby certify that the information on this		ine pest of my kno	wiedge.	. <u> </u>		
Signaturo ([])	Firm	sa Chulatanaan Ca	W. W. A. M. V.			

Layne Christensen Company

Layne Christensen Company

Please complete both Poims 4400-133B and 4400-133B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. State., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

· · · · · · · · · · · · · · · · · · ·	Vatershed/Wastewater Remediation/Redevelopment	Waste Managem	ent 🔲	MONITORING W Form 4400-113A	ELL CONSTRUC Rov. 7-98	MOLT
Pacility/Project Name Pentawood Products	Local Grid Location of Well t.	ואו		Well Name Pent	a EW12 4"	
Facility License, Permit or Monitoring No.	Local Grid Origin (estimates, 45 ° 47 ° 13 "	ated: X) or Well	Location X	Wis. Unique Well I	İ	
Facility ID	St. Planeft. N	,f		Date Well Installe	2_/_02_/_2011	
Type of Well	Section Location of Waste/Sou		. B	Well Installed By:	Name (first, last) ar	id Firm
Well Code 64 / le	1/4 of1/4 of Sec. Location of Well Relative to V	Innin/Pauran Gau	Lot Number	1	Meindel	
Distance from Waste/ Enf. Stds.	u Upgradient	Sidegradient Not Known —		Layne Christens		
A. Protective pipe, top elevation	ft.MSL		and lock?	•	X Yes □	No
	fi. MSL		teotive cover p nside diameter		48	
C. Land surface elevation	n.MSL	I Ps.	ongth:		8 Steel □	
D. Surface seal, bottom ft. MS	il.or 46 _ n. 3333	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	/faterial: HDDF balou	y grade vault		
12. USCS classification of soil near screen	K442.234.41	1470 0720122722	Additional prot	_	□ Yes □	4.00
GP □ GM□ GC□ GW□ S				!		
SM□SC□ ML□ MH□ C	E E CH E		face scal:		Bentonite IX	30
Bedrock 🗆		8339 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Concrete [01
	Yes □ No		ntonite Chips_	12 1 4	Other 🗆	
14. Drilling method used: Rot		4, Mat	terial between	well casing and prot	Bentonite	30
Hollow Stem At	ther \square				Other 🎞	
		5 Ann	mlor space ses); a. Granular/Ci	ipped Bentonite 🗆	33
and the state of t	Air□01	№ ъ	Lbs/gal m	ud weight Hento	onite-sand slurry L.	35
Drilling Mud 🗆 03 N	Tone 🗆 99 💥	600 c	Lbs/gal m	ud waight É	ionionite slurry 📮	31
16. Drilling additives used?	Yes □ No	d, 20.	% Hentonj	te Bentoni		50
TO, DAMING MASSITIVE APPRIC		V(V)		volume added for a	Tremie	01
Describe		f, r	How installed:	ŋ	Fremie pumped [X	-
17. Source of water (attach analysis, if requ	ired):				Gravily 🛘	
			itonite seal:		ntonite granules 🔲	33
		b.	□1/4 in. 1X3	/8 in. □1/2 in.	_	
E. Bentonito soal, topft. MS	L or _89 II.	6			Other 🗆	ALL SELECT
F. Fine sand, top ft, MS	Lorft.	a		: Menufecturer, pr	odnot usine ec mesi	11. 812.0
G. Pilter pack, top ft, MS	Lor_93ft.	b. \	Volumo added		_n³	
H. Screen joint, top ft. MS	L or _95 ft.	a_R	ed Flint Well			sh size
I. Well bottom ft. MS	Lor_125ft.		Volume added II casing:	Flush threaded PV		23
J. Filterpack, bottomft. MS	Lor_126_ft	4	" FJ CS Pipe	Flush threaded PV	C schedule 80 🖂 Other IX	****
		222	een material: 3	804 SS FJ		
K. Borchole, bottom ft. MS	L or _ 120 m.	n. 5	Sorcen type:	·	Factory cut Continuous slot [X	
L. Boreholo, diameter 16 _ in.	1	b. h	Manufacturer	Johnson Screen	_ Other □	da'the.
M. O.D. well easing 4.5 in,		\ 0. 8	Slot size: Slotted length:)15 _{in.}
N. I.D. well casing _ 4 in.		•		below filter pack):	None IX Other 🏻	14
I hereby certify that the information on this	form is true and correct to the i	est of my knowledg	ic.			
Signaturo	Pirm	kristensen Company			·····	_

Layne Christensen Company

Please complete both Points 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., faiture to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTH: Sea the instructions for more information, including where the completed forms should be sent.

State of Wiscontin Department of Natural Resources Roule to: Y	Vatershed/Wastewater Kamediation/Redevelopmen	Wasto Man	agement	MONITORING WI Form 4400-113A	BLL CONSTRUC Rev. 7-98	CTION
Pacility/Project Name Pentawood Products	Local Grid Location of We	31	fr. C.W.	Well Name Penta	e EW13 6"	
Pacility License, Permit or Monitoring No.	Local Grid Origin (es	timated: X) or	Well Location (X	Wis. Unique Well N VX859	fo. DNR Well ID	No.
And the second s	St. Planof	7. N,		Date Well Installe	1 / 19 / 2011	(
Type of Well Well Code 26 / ew		lec,T		Well Installed By:	Name (first, last) m Meindel	nd Firm
Distance from Waste/ Enf. Stds.		☐ Sidegradient	Gov. Lot Number	Layne Christense	n Company	-
A. Protective pipe, top elevation		· · · · · · · · · · · · · · · · · · ·	l. Cap and lock?		X Yes □	No
	n. MSL		l, Protective cover p a, Inside diameter	•	48	_in.
- -			b. Longth;	•		_ft.
	ft. MSL	35555500	c. Material:		Steel 🗆	04
D. Surface seal, bottom ft. MS			-	y grade vaul(414435
12, USCS classification of soil near screen			d. Additional pro-		∏ Yes IX	No
	W D SP D		If yes, describe)	Bentonite IX	30
Bedrock			3, Surface scal:		· Concrete	
13. Sieve analysis performed?	res □ No		Bentonite Chips		Other	.03.000.00
I	ату 🗀 50			well casing and prote		THE STATE OF THE S
Hollow Stem Au				•	Bentonite 🗆	
Ot	her 🗆 🎆	₩ ₩		<u></u>	Other 🗖	
		₩ :	5. Annular space sei	d: a. Granular/Chi	pped Dontonite 🏻	33
	Air 0 0 I		b,Lbs/gal m	ud weight Benton	nite-sand slurry∐	35
Drilling Mud □ 0 3 N	ONE LL 77 Z		cLbs/gal n	ud weight Bo	entonite slurry 🗀	31
16. Drilling additives used?	les □ No	X X		te Bentonit volume added for er		30
		COI KROI	c,r. f. How installed:		Tremie 🗆	01
Describe		₩ ₩	I' ina matemeti		remie pumped IX	-
17. Source of water (attach analysis, if requ	ired):	3 3			Gravity 🗆	
			5. Bentonite seal:		toujte granules 🛚	
			b. □1/4 in. X:	3/8 in. □1/2 in.]		
E. Bentonite seal, top ft. MSI	Lor_89fi.		C1		. Other L	
F. Fine sand, top ft. MSl	Lor_93ft.			(; Manufacturer, pro	duct name & mes	h size
			a, Red Flint Well			
G. Filter pack, top ft. MSI	_or_128ft		b. Volume added	_45	.ft ³	
n tio	125 0		3. Pilter pack materi	al: Manufacturer, pro	Muct name & mes	sh size ******
H. Screen joint, top ft. MSI	201_1351L		a. Red Flint Well b. Volume added	37	ft ³	
I. Well boxom ft. MSI	Lor_155ft.), Well casing:	Plush threaded PVC		23
			Ū	Flush threaded PVC	schedule 80 🗆	24
I, Filter pack, bottomft. MSI	_ or _ 157 ft.		6" FJ CS Pipe		Other IX	****
K. Horehole, bottom ft. MSI	on 157 fts	10), Screen material:	304 SS FJ	Factory cut	11
K. Horehole, boltom	201-121-121		a. Screen type:	Co	ontinuous slot [X	
L. Borehole, diameter _ 16 in.	~ [Other 🗆	
[III		\	b. Manufacturer	Johnson Screen		
M. O.D. well casing 6.62_ in.		/	c. Slot size:			065 _{n.}
		<u> </u>	d. Slotted length:			n.
N. I.D. well casing _ 6 in.		11	l. Backfill matorial Red Flint Well		None 🗆 Other IX	
I hereby certify that the information on this	form is true and correct to fi	he best of my know				11/575
Constant III	Rim		W *		*******	

Please complete both Forms 4400-133A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chr. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. State., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. State., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Layne Christensen Company

					•
Siste of Wisconsin Department of Netwest Resources Route to:	Watershed/Wastowater Remediation/Redevelopment	Waste Management	MONITORING WE Form 4400-113A	LL CONSTRUC Roy, 7-98	TIOI
Facility/Project Name Pentawood Products	Remediation/Redevelopment Local Grid Location of Well n.	N. J. D.E.	Well Name Penta	EW13 4"	
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated at 13 (cstimated at 13)	ated: IX) or Well Location IX	Wis. Unique Well NoVX860	5. DNR Well ID	No.
Facility ID	St. Planoft. N	, <u>r.e.</u> s/c/n		/_19_/_2011	=
Type of Well	Section Location of Waste/Sot	I.J.K	Well Installed By: N	lame (first, last) and	d Firn
Well Code 64 / le	Location of Well Relative to V	Vaste/Source Gov. Lot Number	Vince N	<u> Ielndel</u>	
Distance from Waste/ Enf. Stds. Source	u □ Upgradient a □	Sidegradient Not Known	Layne Christenser	1 Company	.
	ft, MSL	1. Cap and lock?		IX Yes □	No
• • •	fi.MSL	2, Protective cover	• •	48	Ť.a
u	11	a. Inside diamete	or:	8	_
	fi.MSL	c. Material:		Steel IX	
D. Surface seal, bottom ft. MS	SLor 15 ft.		vault	Other 🗆	
12. USCS classification of soil near screen	100 00 00 11	d. Additional pro		□ Yes □	No
GP□ GM□ GC□ GW□ S	SW D SP D	If yes, describ			
SM SC ML MHO C	CL I CH II	3, Surface scal:		250111011110	30
	Yes □ No	Pontanita China		Concrete 🗆 Other 🗆	01
The state of the s		Bentonite Chips	n well casing and protec		####
14. Drilling method used: Rollow Stom Av	tary 🗆 50	4, Maichai istaich	t west criding and broses		30
O O	ther 🗆 💮			Other 🎞	
<u></u>		5. Annular space si	a); a, Granular/Chip	ped Bentonite 🛮	33
15, Drilling fluid used: Water [] 0 2	Air 0 01	bLbs/gal 1	mud weight Benton	ite-sand slurry	35
Drilling Mud 🗆 0 3 1	None 199	cLbs/gal :	mud weight Be	ntonite slurry U	31
16. Drilling additives used?	Yes □ No	d. 20 % Bento	nite Bentonite yolume added for any	-cement grout iv	50
		KXXI		Tremie	01
Describe		f. How installed		emie pumped X	-
17. Source of water (attach analysis, if requ	ılred):			Gravity []	08
		6. Bentonite seal:		mite Stannjes 🗌	33
		36, □1/4 in. □	3/8 in. □1/2 in. P	ontonite chips IX	32
E. Bentonite seal, topft. MS	Lor_89it.	v.———			徽黨
F. Fine sand, top ft. MS	Lor ft.	7. Fine sand moteri	al: Manufacturer, proc	luct name & mesh	size
r. Mic suit, top					
G. Filter pack, top ft, MS	L or _93 ft		d	n ³	
			rial: Manufacturer, pro	duct name & mesh	
H. Screen joint, top ft. MS	123	a, Red Flint Wel		<u>R</u> 3	
I. Well bottom ft. MS	Lor_125ft.	9. Well ensing:	Flush threaded PVC		23
			Plush threaded PVC		24
J, Pilter pack, bottomft. MS	Lor_128ft.	4" FS CS Pipe		Other IX	
K. Borchole, bottom ft. MS	Lor 128 ft.	10. Screen material: a. Screen type:	304 88 FJ	Pactory cut	11
K, Horehole, Boltom K 1416	LW_120W	ii. acidentypo,	Co		01
L. Borehole, diameter _ 16 in.					
		b. Manufacturer	Johnson Screen	0,01	15.
M. O.D. well casing 4.5, in.		o, Slot size: d. Slotted lengtl	1:	.30_	_
N. I.D. well casing4 in.		11, Backfill material		None IX Other []	14

Please complete both Points 4400-1137 and 4400-113B and return them to the appropriate DNR office and hureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Layne Christensen Company

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature

\ \ \ \ '



State of Wisconsia Resources Route to: Watershed/Wastewater	
	ent Other Well Name
Pacility/Project Name Local Grid Location of V	n. Sft. S. Penta EW14 6"
Tentanoon Troubles	estimated: X) or Well Location X Wis. Unique Well No. DNR Well ID No.
Facility License, Fermit of Monttoring No. 120ca Grid Origin 11	"Long. 92 ° 25 ' 8 "or VX861
Facility ID St. Plane	_n.N,n.B. 8/C/N 12_/_30_/_2010
Section Location of Was	te/Source m m d d y y y y Well Installed By: Name (first, last) and Firm
Type of Well 1/4 of 1/4	f Seo. N. R. W Vince Mondal
Wen code Location of Well Relativ	e to Waste/Source Gov. Lot Number
Distance from Waste/ Enf. Stds. u Upgradient Source ft. Apply d Downgradient	s ☐ Sidegradient Layne Christensen Company n ☐ Not Known
A. Protective pipe, top elevation ft. MSL.	1, Cap and lock? IX Yes No
& Mer	2, Protective cover pipe:
B. Well casing, top elevation	a. Inside diameter: 48in.
C. Land surface elevation ft. MSL	b, Longth: 8 ft.
	c, Material: Steel 0 4
D. Surface seal, bottom ft. MSL or _36, ft.	HDPE - below grade vault Other IX
12. USCS classification of soil near screen:	d. Additional protection?
OP D GMD OCD GWD SWD SP D	If yes, describe:
SM C SC MLC MHC CL CH CH C	Bentonite IX 30
Bedrock []	Concrete 1 01
13. Sieve analysis performed? Yos No	Bentonite Chips Other D
14. Drilling method used: Rotary [] 50	4. Material between well easing and protective pipe:
Hollow Stem Auger 41	Bentonite 🗆 30
Other 🗆 🎇	Other 🗆 🎎
	5. Annular apace seal; a. Granular/Chipped Bentonite 3 3
15. Drilling fluid used: Water □ 02 Air □ 01	b. Lbs/gal mud weight Bentonite-sand slurry 35
Drilling Mud 🗆 03 None 🗆 99	c,Lbs/gal mud walght Bentonite slurry D 3 1
	88 88 d. 20 % Bontonite Bentonite cement grout X 50
16. Drilling additives used? ☐ Yes ☐ No	6. 24 Fi 3 volume added for any of the above
	f. How installed: Tremie 101
Describe	Tremie pumped IX 02
17. Source of water (attach analysis, if required):	Gravity 0 08
	6. Bentonite seal: a. Bentonite granules 33
	b. 11/4 in. 1X3/8 in. 11/2 in. Bentonite chips 1X 3 2
· E. Hentonito seal, top ft. MSL or _92 ft.	/ c Other □ 🎇
. 19. Delitoring 20m! tob	
F. Fine sand, top ft. MSL or _ 96ft.	7. Pine sand meterial: Manufecturer, product name & mesh size
1) Till belling top	a Red Fitnt Well Slot #20
G. Filter pack, top ft. MSL or 132 ft.	b, Volume added 51n3
Of I Hot brown tob	8. Pliter pack material: Manufacturer, product name & mush size
H. Screen joint, lop ft, MSL or _133ft.	a. Red Flint Well Slot #60
H. Screen joint, top ft, MSL or _ 133 ft,	b. Volume added 31 13
I. Well bottom ft. MSL or _ 153ft.	9, Well casing: Flush threaded PVC schedule 40 \(\sigma 23\)
1. Astr pointil	Plush threaded PVC schedule 80 🛘 24
I, Filter pack, bottomft. MSL or _154.5_ft.	6" FJ CS Pipe Other IX
1, Prior pack, bortomtemsbottm	10. Soreen material: 304 SS FJ
72 Table 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
K. Horchole, bottom ft. MSL or _ 154.5_ft.	a. Soreen type: Factory cut [] 1 1 Continuous slot [X 0]
* n + + n = 16 +	
L. Borehole, diameter _ 16 in.	Other 🗆 🎇
	b. Manufacturer Johnson Sercen c. Slot size: 0.065in.
M. O.D. well easing 6.62 in.	40.
	·
N. I.D. well casing _ 6 _ in.	11, Backfill material (below filter pack): None 14
4	Red Flint Well Slot #60 Other IX
I hereby certify that the information on this form is true and correct to	o the best of my knowledge.
Signaturo Pirm	Chaldren Communication
MIII, Lay	yne Christensen Company

Please complete both Forms 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. State, and ch. NR 141, Wis. Adm. Code, in accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. State, failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Jan .

State of Wisconsin. Department of Neural Resources Route to:	Watershed/Wastewater Remediation/Redevelopment	Waste Management	MONITORING WELL CONSTRUCTION Form 4400-113A Rev. 7-98
Pacility/Project Name Pentawood Products	Local Grid Location of Well	IN.	Well Name Penta EW14 4"
Facility License, Permit or Monitoring No.	Local Grid Origin (estima	ated: X) or Well Location	Wis. Unique Wall No. DNR Well ID No.
Facility ID	St. Plane ft. N	ft. B. S/C	
Type of Well Well Code 64 / Ie	Section Location of Waste/Sou 1/4 of1/4 of Sec_	.т. N.R. 🗔	Wolf Installed By: Name (first, last) and Firm
Distance from Waste/ Enf. Stds.		Sidegradient	Layne Christensen Company
Source <u>ft. Apply D</u> A. Protective pipe, top elevation	d Downgradient n D	Not Known	X Yes □ No
	fi, MSL	2. Protective cov	er pipe:
# · · · · · · · · · · · · · · · · · · ·	11	a, Inside diam	48in. 8ft.
C. Land surface elevation	n.MSL	b, Length:	Steel 🗀 04
D. Surface seal, bottom ft. MS	SL or 36, ft.	I A WASSESSEE	elow grade vault Other IX
12. USCS classification of soil near scree.		d. Additional	
GP II GMII CCII GW II 4	SW 🗆 SP 🗀 I 🔪 [] [If yes, desc	ribe:
SM SC ML MHO	ar 🗆 car 🗆 🥌	3. Surface scal:	Bentonite X 30
Bedrock	V 17.	889	Concrete 0 01
	Yes No	Bentonite Ch	ips Other D
	tary [] 50	4, maioriai Dolw	Bentonite 🗀 30
Hollow Stem At	inger 🗆 41		Other 🎞 🎎
	www	5 Annular anace	seal: a. Granular/Chipped Bentonite [] 33
15. Drilling fluid used: Water 1 0 2	Air 🗆 01	Lbs/g	al mud weight Bentonite-sand slurry 📙 🔞 🦠
Drilling Mud □ 03	None 🗆 99	K c Lbs/e	al mud weight Bentonite slamy 📙 31
4 = 20 +015	Yes No	189 A 20 % Bon	tonite Bentonite-cement grout X 50
16. Drilling additives used?	168 🗆 MO		Fi 3 volume added for any of the above
Describe		f, How instal	Tremic pumped IX 02
17. Source of water (attach analysis, if requ			Gravity [] 08
, , ,		6. Bentonite seal	99 . 1. 9 mm ÄÄ
		b , □1/4 in.	IX3/8 in. 1/2 in. Bentonite chips IX 32
E. Bentonite seal, topft. MS	L or _92ft.	/ 0	Other 🗆 🎇
F. Fine sand, top ft. MS	SL orft.	7. Fine sand met	erial: Menufecturor, product name & mesh size
G. Filter pack, top ft, MS	1L or _96 ft.	b, Volume ad	dedfi ³
• • •	- H	8. Filter pack me	cerial: Manufacturer, product name & mesh size
H. Screen joint, top ft. MS	iL or _98 ft.	a, Red Flint V	/ell Slot #20
A MC	SL or _ 128ft.	b. Volume ad 9, Well casing:	Flush threaded PVC schedule 40 🔲 23
I. Well bottom ft. MS		3, Wolf offishing	Plush threaded PVC schedule 80 □ 24
J. Filter pack, bottomft. MS	SL or _132ft.	4" FJ CS P	pe Other IX
K. Borchole, bottom	L or _ 132 ft.	a. Screen typ	·
			Continuous slot IX 01
L. Borehole, diameter16 in.		Manufactor	oer Johnson Sereen
M. O.D. woll easing		o. Slot size: d. Slotted len	ບູ.ບູ <u>.</u> ວິດກຸລ _{າກ} ,
N. 1.D. well casing _ 4 in.		•	ial (below filter pack): None [X 14] Other
I hereby certify that the information on this	form is true and correct to the	pest of my knowledge.	3.00
Signaturo Signaturo	Firm		
		hristensen Company	

Please complete both Forms 4400 113A and 4403-113B and return them to the appropriate DNR affice and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., faiture to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

127 Pare 1734

LAYNE-NORTHWEST COMPANY TEST OF WELL

Albert Hoo CARTEL 159AB 00/ 007 888 á 000 A10 545 シバイジ WATER APPEARANCE. CLEAR, CLOUDY, MURKY, MUDDY, SANDY, TEMP, ODOR TESTED BY: LANGE 4 PUMP SET TO DISCHARGE NOZZIE, 418 CENTER OF GALIGE TO GROUND LEVEL: TO TAIL PIPE inde ٠ ٩ CLEANING برکن مر ای CLEAT Charact W 2 W PAGE RATE OF RECOVERY OR AMPS HEAD PRESSURE PSI 15/2 8 Q W 200 202 00 D 3 i) ଚ 0 O' Ø 0 0 0 Ø SPECIFIC YIELD ĖĖ DRAWDOWN IN FEET STATIC LEVEL 114'6 DIA. ORIFICE: LENGTH OF AIRLINE DRILLED BY: PUMPING LEVEL FT. 115.3 115.7 46.31 ALT-BA IN EBER 14.6 115,3 16.8 | | 5点 157 15,0 15.8 16 64 16.04 15 15 INCHES ON ORIFICE G.P.M. 99 N 300 8 0 33 Š ন OVINER PUTA WAND Q12 C 21 Z U 00,00 12:50 1,20 150 19 5 LOCATION: SIFEN 04:0 21 4:00 800 5/100 11 505 23 8 53 24 5 145 1.10 97.70 13 7715 22 8:14 100 13 8 WELL DEPTH 1 27 READING STAT COUNTY Vide office Wide ored SURF 1:00 4年30年33

HILL

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Was	towater [X]	Waste Management	: 	
Remediation/Re	development	Other 🔲		
Facility/Project Name	County Name		Well Name	
Pentawood Products		BURNETT	1	wood MW#28
Facility License, Permit or Monitoring Number	County Code	Wis, Unique Well N	umber DNR W X855	Vell ID Number
1. Can this well be purged dry?	Yes 🛮 No	11. Depth to Water		nt After Development
surged with bailer and pumped	41 61 42	(from top of well caring) Date		
surged with block and pumped	62 70			$\frac{0}{y} \frac{12}{y} \frac{12}{m} \frac{10}{d} \frac{2010}{y} \frac{2}{y} \frac{1}{y} \frac{1}{y}$
compressed air . 🖂	20 10 51	Time 12, Sediment in well		i and and an an an an an an an an an an an an an
	50	bottom 13. Water clarity	Clear [1 10 Turbid X 15	Clear X 20 Turbid D 25
•	min.	,	(Describe)	(Describe)
,	ft.			
5. Inside diameter of well	in.		•	
6. Volume of water in filter pack and well cashing	gal,	Dill to 16 detillion fluie	ds were used and well is	
7. Volume of water removed from well	gal,			1 mg/1
8. Volume of water added (if any)	gal.	solids		
9. Source of water added		15. COD ·		mg/l
11	***************************************		y: Name (first, last) and Ph	
10. Analysis performed on water added?	Yes 🗌 No	First Name: Scott Firm: Layne Chris		me: Schwerin
17. Additional comments on development:				
Name and Address of Facility Contact/Owner/Responsi First Last McKenna Name: Kelt Name:	ble Pariy	I hereby certify that of my knowledge.	t the above information	is true and correct to the best
Paollity/Firm: CH2M Hill		Signature:		<u> </u>
Street: 135 South 84th Street		Print Namo: Keith M	leyers	· · · · · · · · · · · · · · · · · · ·
City/State/Zip: Milwaukee WI	53214-	Firm; Layne C	Christensen Company	

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Was	stowater [X]	Wasto Managemen	ıt 🔲	
Remediation/R	edovelopment	Other 🔲		
Facility/Project Name	County Name		Well Name	
Pentawood Products		BURNETT		ood MW#27
Pacility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	Number DNR W	ell ID Number
1. Can this well be purged dry?	Үез 🗆 No	11. Depth to Water		t After Development
surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly	41 61 42 62 70 20 10 51	(from top of well casing) Dato Time 12. Sediment in well bottom 13. Water clarity	b. \frac{12}{m} / \frac{20}{d} / \frac{201!}{y} \frac{1}{y} \text{c.} \text{a.m.} \text{p.m.} \text{p.m.} \text{p.m.} \text{p.m.} \text{p.m.} \text{p.m.} \text{p.m.} \q	12 / 20 / 2010 y y m m d d y y y y y y y y y y y y y y
3. Time spent developing well30_	min.		Turbid X 15 (Describe)	Turbid 25 (Describe)
4. Depth of well (from top of well easisng) 137	ft.			
5. Inside diameter of well2	in.			
6. Volume of water in filter pack and well casing	gal, ·		·	400
7. Yolume of water removed from well 100	gal. gal.		ds were used and well is	•
9. Source of water added		15. COD	mg/l	mg/l
		16. Well developed b	y: Name (first, last) and Fire	
10. Analysis performed on water added?	Yes 🗀 No	First Name: Scot	t Last Nam	 16; Schwerin
17. Additional comments on development:			•	
		·		
Name and Address of Facility Contact/Owner/Responsi First Last McKenna Name: Keli Name:	ble Party	I hereby cortify that of my knowledge.	at the above information i	s true and correct to the best
Pacility/Firm; CH2M Hill		Signature:		M
Street: 135 South 84th Street	·	Print Name; Keith &	leyers /	<u></u>
City/State/Zip: Milwaukee WI	53214-	Firm: Layne (Christensen Company	·

MONITORING WELL DEVELOPMENT Form 4400-113B Roy, 7-98

Route to: Watershed/Wes	stowater [X]	Waste Management	t 🗀	
Remediation/R	edevelopment 🗔	Other 🔲		
Facility/Project Name	County Name		Well Name	******
Pentawood Products	-	BURNETT	· Penta	EW12 6"
Facility License, Permit or Monitoring Number	County Cods	Wis. Unique Well N	Number DNR W X857	eil ID Number
1. Can this well be purged dry?	Yes IX No	11. Depth to Water		nt After Development
2. Well development method		(from top of	n, _103 ft.	_1 <u>08</u> n.
	41	well casing)		
-	61	1	04 00 401	4 00 00 0011
	42	Date .	b. 02 / 09 / 201	$\frac{1}{y} = \frac{02}{m} / \frac{09}{d} / \frac{2011}{y} = \frac{1}{y}$
	62		, .	
	70	Time	e.m	; p.m.
compressed air	20	Time	C i LI Pair	
	10	12, Sediment in well	inches	inches
• • •	51	bottom		mvmv
pumped slowly Other	5.0	13. Water clarity	Clear 1 1 0 Turbid X 1 5	Clear X 20 Turbid□ 25
3. Time spent developing well 300	min,		(Describe)	(Describe)
	ft.			
5. Inside diameter of well $\frac{6}{2}$	in.			
6. Volume of water in filter pack and well casing	gal.			
7. Volume of water removed from well 999	gal.		ds were used and well is	
8. Volume of water added (if any)	gal.	14. Total suspended solids	mg/l	mg/l
9. Source of water added		15. COD	mg/l	mg/l
		16 Well developed b	y: Name (first, last) and Pir	T11
10. Analysis performed on water added?	Yes 🗆 No	First Name: Dan		ne: Passamani
(ar yes, mann and an		Firm: Layne Chris	stensen Company	
17, Additional comments on development:			4 !	
Name and Address of Facility Contact/Owner/Responsi	blo Patty	Thereby cortify the	t the above information	is true and correct to the best
First Keli Last McKenna Name: Name: McKenna		of my knowledge.	A. A.	7
Paollity/Firm: CH2M Hill		Signature:		<u> </u>
Street: 135 South 84th Street		Print Name: Kelth M	leyers	.
City/State/Zip: Milwaukee WI	53214-	Firm: Layne C	Christensen Company	

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Was	stewater [X]	Wasio Management	: <u> </u>	
Remediation/R	edevelopment 🔲	Other 🔲		
Facility/Project Name	County Name		Well Name	
Pentawood Products		BURNETT	Per	nta EW12 4º
Pacility License, Permit or Monitoring Number	County Code	Wis, Unique Well N	umber DNI X858	R Well ID Number
1. Can this well be purged dry?	Yes 🗆 No	11, Depth to Water		ment After Development
surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only	61 42 62 70 20	well casing) Date Time	b. $\frac{02}{m \ m} / \frac{10}{d} / \frac{2}{y}$ o: \Box	108 ft. 2011 02 / 10 / 2011 y y y m m d d y y y a.m.
	5 1 5 0	12. Sediment in well bottom 13. Water clarity	Clear [] 10 Turbid [] 15	ches inches Clear _ 20 Turbid
3. Time spent developing well 300	min.		(Describe)	(Describe)
4. Depth of well (from top of well casising) 123	ft,			
5. Inside diameter of well $\frac{4}{2}$	in.		****	
7. Volume of water removed from well 300	gal. gal. gal.	· · · · · · · · · · · · · · · · · · ·		Il is at solid waste facility: ng/lmg/l
9. Source of water added	· — · · — ·	15. COD		ng/l mg/l
		2719 11 1		
10. Analysis performed on water added?	Yes 🛚 No	16. Well developed by First Name: Dan Firm: Layne Christ	Last	d Firm Name; Passamani
17. Additional comments on development:				
•			,	
Name and Address of Facility Contact/Owner/Responsi Pirst Kell Last McKenna Namo; Name;	ble Party	I hereby certify that of my knowledge.	t the above informat	ion is true and correct to the best
Facility/Firm: CH2M Hill		Signature:		//
Sirest: 135 South 84th Street		Print Name: Keith M	leyers	
City/State/Zip: Milwaukee WI	53214-		Christensen Company	
				•

MONITORING WELL DEVELOPMENT Form 4400-113B Rov. 7-98

<u>Koute to:</u> Watershed/Was	towater [X]	Wasto Management	t[]		
Remediation/Re	edevelopment	Other 🔲			
Facility/Project Name	County Name		Well Name		
Pentawood Products		BURNETT		Penta EW13 6"	
Pacility License, Permit or Monitoring Number	County Code	Wis, Unique Well N	X859	DNR Well ID Number	•
1. Can this well be purged dry?	Yes IX No	11. Depth to Water		lopment After Deve	
2. Well development method surged with bailer and bailed	4 1	(from top of well casing)	a109	n <u>109</u>	ft.
surged with bailer and pumped X					
surged with block and bailed		Date	$b_{1} = \frac{02}{1} / \frac{08}{1}$	$\frac{2011}{y} = \frac{02}{m} \frac{m}{m}$	_08_/_2011
surged with block and pumped			mm dd	yyyy m m	
	70	70 1	_	□ a.m:	□ a.m.
·	20	Time	c,:	□ b.m:	[7] b.ur.
bailed only pumped only		12. Sediment in well		_inohes	inches
• • • • • • • • • • • • • • • • • • • •		bottom			
Other	5.0	13. Water clarity	Clear 10 Turbid X 15	Clear (X 2 0 Turbid□ 2 3	
3. Time spent developing well 300°	min.		(Describe)	(Desoribe)	
4. Depth of well (from top of well easieng) 153	ft,				
5, Inside diameter of well $\underline{6}$	in.		<u>-</u>		
6. Volume of water in filter pack and well easing	gal,				
	8a1,	Fill in if drilling fluk	ds were used and	well is at solid waste fa	acility:
7. Volume of water removed from well 999	gal.				
8. Volume of water added (if any)	gal,	14. Total suspended solids		mg/l	mg/l
9. Source of water added		15, COD		_ mg/l	, mg/l
		16. Well developed b	we Money (first Inch) and Him	***************************************
10 Australia and an outland of the state of	Yes 🗆 No	First Name: Dan	-	asi Namo: Passamani	
10. Analysis performed on water added?	Kez 🗆 No	Lust Mante: Dan	I.	Wal Idaille: I neamign	·
(xx) and commer sometimes		Firm: Layne Chris	stensen Company		- 1-1-1-1
17. Additional comments on development:					
			•		
	 	I	······	<u></u>	
Name and Address of Pacility Contact/Owner/Responsit First Kell Last McKenna	ble Party	I hereby certify that of my knowledge.	t the above infon	mation is true and corre	ct to the best
Name: Name: Name:				10//	·····
Paollity/Firm: CH2M Hill	<u>,</u>	Signature:		<i>H</i>	
Street: 135 South 84th Street		Print Name: Keith M	feyers	<i>V</i>	
City/State/Zip: Milwaukee WI	53214-	Firm: Layne C	Aristensen Comp	any	

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Waster	water [X]	Waste Management			
Remediation/Redo	velopment	Othor			
Facility/Project Namo	County Name		Well Name		
Pentawood Products]	BURNETT	1		W13 4"
Pacility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	umber X860	DNR We	II ID Number
1. Can this well be purged dry? (X. Ye	s 🗆 No	11. Depth to Water			t After Development
4. Depth of well (from top of well easising) 123	1 2 2 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0	well casing) Date	b. <u>02</u> / <u>08</u> c;	2011 y y y 3 a.m. p.m. inches	109 ft. 109 ft. 100
6. Volume of water in filter pack and well	gai, gai,	Pill in if drilling fluid 14. Total suspended solids 15. COD 16. Well developed by		mg/l	mg/l
10. Analysis performed on water added? (If yes, attach results)		First Name: Dan Firm: Layne Chris		Last Name	e; Passamant
17. Additional comments on development:					
Name and Address of Facility Contact/Owner/Responsible First		of my knowledge. Signature: Print Name: Kelth M	11,		s true and correct to the best

MONITORING WELL DEVELOPMENT Form 4400-113B Rev, 7-98

Route to: Watershed/Was	tewater [X]	Waste Managemen	t□	
Remediation/Re	edovolopment 🔲	Other 🔲		
Facility/Project Name	County Name		Well Name	
Pentawood Products		BURNETT		EW14 6"
Pacility License, Permit or Monitoring Number	County Code	Wis, Unique Well N	Number DNR W X861	ell TD Number ———
1. Can this well be purged dry?	Yes IX No	11. Depth to Water		nt After Development
surged with baller and pumped surged with block and balled surged with block and pumped surged with block, balled and pumped compressed alr balled only pumped only pumped slowly Other 3. Time spent developing well 4. Depth of well (from top of well casisng)	4 1 6 1 4 2 6 2 7 0 2 0 1 0 5 1 5 0	(from top of well casing) Date Time 12. Sediment in well bottom 13. Water clarity	a. $\frac{112}{m}$ ft. b. $\frac{01}{m}$ / $\frac{13}{d}$ / $\frac{201}{y}$ y c. $\frac{1}{m}$ p.m	
6. Volume of water in filter pack and well casing 7. Volume of water removed from well 999	gal, gal,			at solid waste facility:mg/lmg/l
10. Analysis performed on water added? (If yes, attach results)		16. Well developed b First Name: Dan Pirm: Layne Chris		m ne: Passamani
17. Additional comments on development:			,	
Name and Address of Facility Contact/Owner/Responsi First Last McKenna Name: Keli Name:	ble Party	I hereby certify the of my knowledge.	at the above information	is true and correct to the best
Facility/Firm: CH2M Hill	·	Signature:		4
Street: 135 South 84th Street		Print Name: Keith A	leyers	
City/State/Zip; Milwaukee WI	53214-	Firm: Layne C	Christensen Company	.!

MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

Route to: Watershed/Wastew	vator [X]	Waste Management		
Remediation/Rede	velopment 🗀	Other [
Facility/Project Name	County Name		Well Name	
Pentawood Products		BURNETT	1	EW14 4"
Pacility License, Permit or Monitoring Number	County Code	Wis. Unique Well N	umber DNR W X862	éli ID Number
1. Can this well be purged dry?	ı □ No	11. Depth to Water	1	nt After Development
2. Well development method surged with bailer and bailed surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, balled and pumped compressed air bailed only pumped only pumped slowly Other 1 1 1	1 2 2 0 0 0 0 1	well casing) Date	b, 01 / 13 / 201 m m / d d / y y c inches Clear [7 10 Turbid IX 15	Turbid 🗖 25
3. Time spent developing well 300 4. Depth of well (from top of well casisng) 126			(Describe)	(Describe)
1				
5. Inside diameter of well	in.			
6. Volume of water in filter pack and well casing 7. Volume of water removed from well 8. Volume of water added (if any) 9. Source of water added	gal.	14. Total suspended solids		mg/l
10. Analysis performed on water added? (If yes, attach results)	□ No	First Name: Dan Firm: Layne Christ		ne; Passaniani
17. Additional comments on development:		·		,
Name and Address of Facility Contact/Owner/Responsible First		of my knowledge, Signature: Print Name: Keith Me	eyers	ls true and correct to the best
City/State/Zip: Milwaukee WI 53;	214-	Firm: Layne Cl	hristensen Company	·

Appendix D
Pump installation Records

energeteksteletetetetetetetetetetetetekskieletetetetetetetete

	1 -			
1 Job Name	Penta wood Pi		6 Motor or Gear Dr	VO Motor CD
Address	3682 Daniel	570		Gear Drive CD
City, State	Siren WI		Make Hicdi	
2 Date	2 /7 Month Day	2011 Job Completed Year	Speed	Volts
3 Pump No.	<i>Ew-13 (4")</i> Qil. qr Wa	ter Lube	Or Gear Drive Rat	O Standard Combination
Pump Trout	(New or R	epair	Running Amps Running Volts	Non-Reverse Yes No
		Control of the Contro	Serial No. (Vnable	To road
4 PUMP SIZE			7 WELL Roadings	are From Top of casing
	Diameter	Lengths	Number Ewi3/9	"Year Drilled 2011
Discharge	が (Above) Below		Location 4/57	Vauly
	Below Screw		Diameter 4/	Depth /25/9/57
Column	Poly Flance	,	Measured from top of 4	"diameter casing which is
Tubing	Air Supply Line: Vy" Exhauct: 3/5"		HPT VaulT feet abov	
	Stainless		Tape to Water	07.09
Shaft	Carbon		Air Line Length 108 P1	A.L. Material PVC Statio Level Airling For Builder
water is at	107.09 FT / Product ive	I sheen at this time	Pumping Gage	Pumping Level
Column settir	ng to bowl Around 107 f	Depending on Product.	Discharge Pressure	feet when pumping into System
		· '']		paripaly into system
BOWL FF	1C-42372 QED	Auto Pump (Airdrive)	8 Installer Dan	V Bob
	or 196" Shaft D	ameter N/A	***	, and the same of
Type	e <u>Airdrive</u> Stages	NIR	Rig Used None	<u> </u>
	SS. Diameter			
Special Paints	or Coating on:	no Sleaver in:	Foreman Hours to:	<u> </u>
abaciás a estar a			Repair	
	Golumn fotal Len Tubing with fittings inc	Judget: 32"	Izchaii	To Set
PUMP REPAIR				
OME ICEAN	Condition of Pump When	Pulled	No. 0	
Column	Notes there is			arts Installed
from Dump	To Top of casing,	The state of the s	79	, "4" poly
ubing /			Futing ///inch	cable, air supply,
39 Exh	noust line is under u		Littings, etc., as	per work order
hafting NoTE		neasurments are:	Shafting 10 FT	Airline For Bubbler
2 , 3/8 , 44	<u>" </u>			
OWL	hine are toped i	W. J. T. B. Communication of the Communication of t	Bowl New	
uction-	hayne Tape	The second secon	well cap, sitti	ngs, erc.
				fety cable + s.s.
achine Work		A CONTRACTOR OF THE PARTY OF TH	1. Drain Ports Open	e Connected to pump. Yes No
~#**	1		2. Chiorinate Well	Yes (No
			3. Pump Runs	acad
		ALCOHOL: MAKENIDA	4. Align Pump Head w	ith Dial Indicator Yes No
			5. Grouted Head-Base	Plate Yes 😡
			•	,



1 Job Name Pentawood Products	6 Motor or Gear Drive Motor CD
Address 3687 Paniels 70	Gear Drive CD
City, State Sicen W.F.	Make fix drive HP
2 Date 2 /7 2e// Job Completed Month Day Year	Speed Volts
	Or Gear Drive Ratio
3 Pump No. <u>Ewil (4")</u> Oil or Water Lube	Frame Size Non-Reverse Yes No
Pump Trouble	Running Amps N/H
	Running Amps W/# Running Volts
	Serial No. 4-3000
4 PUMP SIZE	7 WELL Keadings Top or casing
Diameter Lengths	Number Fu-14 H Year Drilled 2011
Discharge Above Below	Location 4" VaulT Diameter 4" Depth 12 7,477
AL & Screw	Diameter 9" Depth 12 7 4/7 Measured from top of 4" diameter casing which is
Flange	4FT VavIT feet above ground
Tubing His Supply Line: 36"	Tape to Water 1/3 /0 ==
Shaff Stainless .	Air Line Length // AHA A L. Material AND POVE State Care State Level Air I'me For Bubblar
Garbon	Stolle Gagarh ativer Stolle Level Air line For Bubbler
Water is at 113,19FT Peroductut 113,18FT T.O.C. Column setting to bow! Acound 113 ft. Depending on Product	Pumping Gage Pumping Level
	Discharge Pressure feet when pumping into System
BOWL AP4+ QEO ANTOPUMP (Air drive)	8 Installer Qua + Bob
Diameter 35/8" Shaft Diameter V/A	
Type <u>Air drive</u> Stages <u>N/A</u> Gast Iron or Bronze, S, S.	Rig Used <u>None</u>
Suction Ft. Long Stm.	Foreman Hours to: Rig Up
Special Paint or Coating on: Zinc Sleeves in:	To Pull Inspect
Golumn Total Length of Pump with Tubing fittings included: 43"	Repair To Set
Tubing fittings included: 43"	The second secon
PUMP REPAIR	
Golumn Note: There is 34" 14", 38" poly	New Parts Installed
From pump To Top of casing.	Column 3/4", 1/2", 3/8" poly
Tubing	Fubing Winch cable fittings.
's Exhaust line is under well cap.	air supply, etc., as per work order.
Shafting Note: All poly line measurments are: 34" ID. %" FD. 38" FO	Shafting 115 FT Hicking For
Bowl Lines are taped Together with	Bubbler Bowl New Pump
- 2" havne tupe	well cap, fittings, etc.
Buction	Suction 5.5. safety cable + 5. S. cable
Aschine Work	for winch line connected to pump
DOMESTIC WILLY	1. Drain Ports Open Yes No.
	3. Pump Runs 4.0d
	4. Align Pump Head with Dial Indicator Yes (6)
	5. Grouted Head-Base Plate Yes (No)



	The state of the s	The state of the s	grident de la company de la co
1 Job Name	Pentawood Prod	vots.	6 Motor or Gear Drive Motor CD
Address	3687 Daniels 70		Gear Drive CD
Ι			
City, State	Siren WI		Make <u>Airdrive</u> HP
2 Date	2 17	2011 Job Completed	Speed Volts
Z Date	Month Day	Year	
<u></u>			Or Gear Drive Ratio
3 Pump No.	Ew-12 (4" Oil or Water	er Lube	ينبر (Continuitori) يتر
	New or Re	pair .	Frame Size Non-Reverse Yes No
Pump Troub	le		Running Amps N/A
			Running Volts//A
			Serial No. 4/- 3001
	- Lewis - Lewi	A Section of the sect	7131711
PUMP SIZE			7 WELL Readings Top of Casing Number Fund 4"Year Drilled 2011
<u> </u>	Diameter	Lengths	Number Emply Year Drilled 3010
Discharge	3/4' (Above)		Location 4 Vacit
Distriction	Below		Diameter 4" Depth /28,7FT
Column	Black Screw		Measured from top of 4 "diameter casing which is
Oolanni	Poly Flange		4/7. VaulT feet above ground
Tubing	Air supply line : 38"		Tape to Water 100.91 FT
210 -	Stainless		Air Line Length Acound 101 A L Material PVC
Shaft	Carbon		Air Line Length Acound 101 A L Material PVC
water is at	100,91PT/Product at 10	10,90 T.O.C.	Pumping Gage Pumping Level
Column settir	ng to bowl Around 100 PT ft	Depending in Perduct	Discharge Pressure feet when pumping into System
1		, ,	
BOWN ARH	+ QED Auto Pump (Air er 358" Shaft Di	drive)	8 Installer Dan & Bob
Diamete	Shaft Di	ameter N/A	
Tun	e Airdrive Stages	NA	Rig Used None
- wh	or Bronze S. S.	P. Carlotte	
	5.5 Diameter	Ft. Long Strn.	Foreman Hours to: Rig Up
Quenental Bataka	or Coating on: Zi	Ft, Long Strn. nc Sleeves in:	To Pull Inspect
Special rante		4	Repair To Set
	Tubing fittings include	of pump with	
	Harmy FITTINGS THE WAR	<u> </u>	
PUMP REPAIR			page and the same
, and the second	Condition of Pump When	Pulled	New Parts Installed
Golumn	Note: There is 3/4	15/2, 38" poly	Column 3/4/5 /3 38" poly
From Fump	To Top of casing.		The state of the s
r ubin g	- Washington		Tubing Winch, cable, fittings,
15 6		er well cap.	air supply etc., as per work order
Shafting No7	es All polyline my	easurments are	Shafting 105 FT PVC airline For
3/4", IO. 1/2	"ID, 3/8" IO		Bubbler use
36W	Lines are tapped	lwith on	Bowl New
	Layne Tage		well cap, sittings, etc
uction			Suction S.S. Safety cable & S.S.
***			Cable for winch line connected To pump
lachine Work	The second secon		1. Drain Ports Open Yes No
····			2. Chlorinate Well Yes 🐠
	- Company in the contract of t		3. Pump Runs
			4. Align Pump Head with Dial Indicator Yes 10
			5. Grouted Head-Base Plate Yes No
		, , , , , , , , , , , , , , , , , , ,	



1	Job Name	Pentawood Pr	odocts	6 Motor or Gear Drive Motor CD
, 	Address	3682 Daniels	<u> Zo-</u>	6 Motor or Gear Drive Motor CD Mod # 23432523/8 Gear Drive CD
]	City, State	Siren WF		Make Franklin HP 2
2	Date	Month Day	20 // Job Completed Year	Speed 3450 Volts 460 #12 wire (chemical resistationard)
,	Pump No. Pump Trouble	EW 13(6") Oil or W New or I	Repair	Frame Size Non-Reverse - Yes No Running Amps HIMA 3.4 Run
) E				Running Volts 460 551.25 Serial No. 10m 14-02-01013C
4 F	PUMP SIZE	Diameter	Lengths	7 WELL (6") Number Ew 13 Year Drilled 2011
ב	Discharge	/'/y" Above	EFA: ATT	Location 3682 Daniels 70 Diameter 6" Depth 153,477.0.
C	Column	//// Screw	GFA: 21. 1.	Measured from top of 6 "diameter casing which is in. ### VacIT feet above ground 5 4" 1,0,0, 7,
T	ubing			Tape to Water 108.78 FT 7.06.
s	haft	Stainless Carbon	1	Air Line Length WA A L Material WA
-	Mad# B100	10018-11103	H366 FT	Static Gage Static Level 208 34/17 Pumping Gage Pumping Level
1	olumn setting OWL <u>Geund</u> Diameter	Fos From Botton	Diameter 1/A	Discharge Pressure leet when pumping thato System 8 Installer
	Type	<u>/6820-/</u> € Stages Bronze 5.5. Pump+m	1701	Rig Used 7-35
•	ictio <u>n 5,5,</u>		356" Ft. Long Strn.	Foreman Hours to: Rig Up
St	ecial Päint ör)		Zinc Sleeves in:	To Pull Inspect Repair To Set
	1	Tubing		
PU	MP REPAIR			
Co	lumn	Condition of Pump Whe	iu kaliea	New Parts Installed Column 6 E月: スノーノー メリター
Tu	bing			Tubing
Sh	afting _			Shafting wire is Taped with 2"
Bo	wi			Bowl New Bowl + motor and #12 Chemical resistant wire
Suc	tion			Suction 11/4" Pitless and 6" well caps as per work order
Mad	chine Work			1. Drain Ports Open Yes No 2. Chlorinate Well Yes No 3. Pump Runs Abo A 4. Align Pump Head with Dial Indicator Yes No 5. Grouted Head-Base Plate Yes No
الجنواني ولنهاجت	Welley was in the second			

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Layne Northwest adv. of Layne Christensen Company

		1	The state of the s
Job Name	Pentawood Pro	ducts	6 Motor or Gear Drive
Address	3682 Daniels 7	<u> </u>	#11 Chesical and of Tarker CD
City, State	Siren WF		Make Franklin HP 2
Date	2 /5 Month Day	Jol Completed Year	Speed <u>3450</u> Volts <u>460</u>
Pump No. <u>Ew-/2 (6 ")</u> Oil or Water Lube New or Repair			Gr Gear Drive Ratio 3 PH Combination Frame Size Non-Reverse Yes No
Pump Trouble	<u></u> ,		Running Amps 4./ MAX 3.4 Run Running Volts 460 5.F. 1,25 Serial No. / OM 14-02-010 18C
			7 WELL (6") Readings Typ or wasing
PUMP SIZE	Diameter	Lengths	Number Ew/2 Year Drilled 2011
Discharge	Above/		Location 3682 Daniels 70
Discharge		I	Diameter 6" Depth 147.8"xo.c.
Column	1/4" Screw	05 EA: 21'1" EA: 14 FT	Measured from top of "diameter casing which is "n 4.FT vaul T feet above ground 5.6.FT 7.o.c. To ATT1655
Tubing			Tape to Water 102.5 FT T.o.C.
Shaft	Stainless		Air Line Length WA A.L. Material W/A
· T	Carbon		Static Gage Static Level
Mod # B1001.	0018-P11103	H 366 FT of Head	Pumping Gage Pumping Level
Column setting	to bowl <u>//9.5</u>	H. From Bottom of Pitless	Discharge Pressure feet when pumping into System
	I - i GON	1:0/605	8 Installer Can + Bob
BOWL Grund	TOS Shaff	Diameter V/A	8 Installer Lan + Bob
Diameter	35/8" Shaft 16 820 - 18 Stages		Rig Used
Cost-Iron o	r Bronze 55. Pump d- L		
Suction 5.5. on Pump Diameter 35/8" Ft. Long Strn.			Foreman Hours to: Rig Up
Special Paint or Coating on: Zinc Sleeves in:			To Pull Inspect
	Column Total La	nath of motor + pump: 33/2	Repair To Set
	Tubing	4.5	
PUMP REPAIR		an a a dadi danada kanamatahangilipajilihilihilihi ka ka ka ka ka ka ka ka ka ka ka ka ka	
A Carrie IVES / GIV	Condition of Pump Wi	en Pülled	New Parts Installed
Column	· ·		Column <u>5EA: 21'1"</u>
	-Camerous and a second		JEA! DIYET
Tubing			Tubing
Shafting			Shatting wire is Taped with 2"
			Laya Tape
Bowl			Bowl New Bowl + Motor and #12
Suction			Suction 1/4" PiTless and 6" well
			to the are unak ander
Wachine Work			1. Drain Ports Open Yes No
rannania - Time Maria			2. Chlorinate Well Yes No
			3. Pump Runs 4. Align Pump Head with Dial Indicator Yes No
			5. Grouted Head-Base Plate Yes
Www.mindowsto.			o. Givaled Head-Dase Flate 165 MW.



6 Motor or Gear Drive Motor CD
6 Motor or Gear Drive Motor CD
#12 Chemical resistant wife CD Make Fore It in HP
7.188.1311
Speed 3450. Volts 460
Or Gear Drive Ratio 3.PH Combination
Frame Size Non-Reverse Yes (No
Running Amps 4/MAx 3.4 Run
Running Volts 460 S.A.105
Serial No. 104 14-05-010046
7 WELL
Number <u>Ew-14</u> (6° Year Drilled <u>3011</u>
Location 3682 Naniels >0 Diameter 6 Depth 150.7 FT 7.0.0
Diameter 6 "diameter casing which is 1"
Measured from top of 6 "diameter casing which is in the form top of casing which is in the form top of casing the form to find the first of the form to find the first of the
Tape to Water
Air Line Length With A.L. Material W/A
Static Gage Static Level
Pumping Gage Pumping Level
Discharge Pressure feet when pumping into System
8 Installer Dan + Bob
Rig Used
Rig Useu 7 3
Foreman Hours to: Rig Up
To Pull Inspect
Repair To Set
New Parts Installed
Column 5EA: 194" x 21' 1"
IEA: 14" X 17 FT
Tubing
Shafting wire is Taped with 2"
Layne Tape
Bowl Now Bowl + motor and
#12 Chemical resistant wire
Suction 1/4" Pitless Adaptor and
1. Drain Ports Open Yes No
2. Chlorinate Well Yes No
3 Pump Runs and
4. Align Pump Head with Dial Indicator Yes No
5. Grouted Head-Base Plate Yes No

