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November 5, 2002

Mr. Tony Rutter
Remedial Project Manager
U.S. Environmental Protection Agency
Remedial Response Branch (SR-6J)
77 West Jackson Boulevard
Chicago, IL 60604-3590

Dear Tony:

Subject: Groundwater Sampling Results Technical Memorandum for 2002
Penta Wood Products Site
Town of Daniels, Wisconsin
Work Assignment No. 101-RALR-05WE
Contract No. 68-W6-0025

Enclosed please find a technical memorandum with post-Remedial Action groundwater sampling results for the May and August, 2002 sampling rounds. Please feel free to call me with any questions or concerns.

Sincerely,

CH2M HILL

Regina Bayer

Regina Bayer

Site Manager

c: Stephen Nathan/PO/USEPA (w/o enclosure)
Dave Alberts/CO/USEPA (w/o enclosure)
Bill Schultz/WDNR, Spooner
Ike Johnson/PM/CH2M HILL, Milwaukee
Dan Plomb/DPM/CH2M HILL, Milwaukee
Phil Smith/RTL/CH2M HILL, Milwaukee
Bill Andrae/ASM/CH2M HILL, Milwaukee
Paul Arps/Chemist/CH2M HILL, Milwaukee
Cherie Wilson/AA/CH2M HILL, Milwaukee

# Post-RA Groundwater Sampling Results May 2002 and August 2002 Sampling Events Penta Wood Products Site

**PREPARED FOR:** Tony Rutter, USEPA

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**DATE:** November 4, 2002

## Introduction

Semi-annual groundwater sampling was conducted at the Penta Wood Products site in May 2002 for six monitoring wells, and static water levels were measured in all monitoring wells. The second post-Remedial Action annual groundwater sampling event was conducted in August 2002 and consisted of sampling twenty-one monitoring wells and four residential wells, and measuring static water levels in all monitoring wells. This technical memorandum presents the results from the two groundwater sampling events and includes tables and figures presenting historical groundwater data. The treatment system has been shut down since September 2001 to allow for pilot testing and plant modifications intended to help meet effluent criteria.

## Purpose and Scope

The purpose of the groundwater sampling events is to periodically monitor groundwater contaminant levels and natural attenuation parameters to assess the effectiveness of the ongoing treatment and natural attenuation. Parameters that are analyzed consist of PCP, naphthalene, BTEX, total and dissolved metals, and natural attenuation parameters (see the analytical results in Attachment 1 for the entire list). Water level measurements and oil thickness levels are also collected during each sampling event to assess groundwater flow direction and the groundwater extraction capture zone.

## Water Level Measurements

Water levels in all monitoring wells were measured in May and August 2002. An oil-water interface probe was used to measure the distance from the top of the inner well casing to the

water surface, and where applicable, to the oil surface. The extraction wells were not in operation during either event, therefore the effects of water table drawdown is not reflected in the measured water levels.

Generally, groundwater in the unconfined aquifer was moving to the north-northwest on the eastern half of the site, and to the north-northeast on the western half of the site, however an area of localized radial flow was observed around a line between MW16 and MW09 near the northern part of the CAMU. Groundwater in the semiconfined aquifer on the western edge of the site (west of the infiltration basin) was generally moving toward the west-northwest, and on the remainder of the site the groundwater is moving to the east-southeast.

In May, LNAPL was observed in MW06S (sheen), MW10S (sheen), MW18 (0.29 ft), and MW19 (0.23 ft). In August, LNAPL was observed in MW10 (sheen), MW18 (0.33 ft), MW19 (0.22 ft), and MW20 (visible product while purging). This is generally consistent with observations made in 2001.

Groundwater elevation contour maps for both the unconfined and semi-confined aquifers, as measured in May and August 2002, are included as Attachment 2. Groundwater elevations, oil measurement data and other observations are also included in Attachment 2.

# Well Sampling and Analysis

For the semi-annual sampling round conducted in May 2002, a total of six monitoring wells and four residential wells were sampled. The monitoring wells chosen for this event were MW01, MW12, MW19, MW21, MW22, and MW26. Monitoring well MW19 was chosen to represent the unconfined groundwater in the LNAPL area, MW01, MW12, MW21, and MW22 to assess the impacts of the plant shutdown to the perimeter of the plume, particularly in the direction of residential wells, and MW26 to monitor groundwater quality near the treated water infiltration basin. These wells were sampled on May 13th and May 14th by Paul Arps, Gina Bayer, Keli McKenna, Dave Shekoski, and Mary Wicklund of CH2M HILL. All monitoring wells were purged of three well volumes before sampling. MW12 was purged and sampled with the dedicated Timco bladder pump installed in 1997, and the remaining monitoring wells were purged and sampled using disposable PVC bailers.

For the annual sampling event conducted in August 2002, a total of twenty-one monitoring wells and four residential wells were sampled. Paul Arps, Gina Bayer, Steve Paukner, Dave Shekoski, Rob Stryker, and Mary Wicklund of CH2M HILL sampled the wells between August 5th and August 8th. Monitoring wells MW03, MW07, MW08, MW12, and MW17 were purged and sampled with dedicated Timco bladder pumps that had been installed in 1997, and the remainder of the wells were purged and sampled using disposable PVC bailers.

PDC Laboratories, Inc. of Peoria, Illinois analyzed the samples from both sampling rounds. Quality control samples consisting of field blanks, field duplicate samples, and matrix spike/matrix spike duplicate samples collected at the frequency specified in the Sampling and Analysis Plan (CH2M HILL, November 2000, and revised April 2001).

Preliminary results received from PDC from the May sampling round showed trace levels of PCP in all four residential wells, and one residential well had low levels of toluene and xylenes. For this reason, the annual groundwater sampling event was conducted ahead of schedule to allow a prompt reassessment of the water quality of these wells. The same residential wells sampled in May were again sampled on August 6th, 2002. Analytical results from this sampling round reported PCP in one residential well at a level equal to the detection limit (0.04 ug/L). No other chemicals were detected in the residential well samples. A memorandum reporting the preliminary residential well sample results was submitted to USEPA on August 14, 2002.

Monitoring well and residential well sample result packages were forwarded to USEPA for data validation to the attention of Dennis Wesolowski. The data validation results for May have been received from USEPA, however the August data, which were sent to USEPA on October 14, 2002, have not yet been received. Consequently, the August results presented in this memorandum are considered unvalidated, and thus preliminary.

# Residential Well Analytical Results

The residential well sample information, including names, addresses and telephone numbers, along with the analytical results were submitting under separate cover to the WAM on August 14, 2002. These are included again in this memorandum as Attachment 4 for completeness.

Preliminary results received from PDC from the May 2002 sampling round showed trace levels of PCP in all four residential wells ranging from 0.094 ug/L to 0.23 ug/L. One residential well also had low levels of toluene and xylenes, each reported at a concentration of 2 ug/L.

Resampling of these wells occurred in August 2002, and the preliminary results showed trace levels of PCP in one well at 0.04 ug/L (from 0.23 ug/L in May), equal to the detection limit. No other chemical detects were reported in the residential wells sampled in August.

# Variance for PCP Criteria

CH2MHILL submitted the *PCP WPDES Permit Effluent Criteria Technical Memorandum* to USEPA and WDNR on August 1, 2002, which provided statistical evidence that PCP analytical methods are not reliable around the 0.1 ug/L level at this site. A criterion of 1.0 ug/L is proposed. A conference call was held on October 15, 2002 with Bill Schultz/WDNR Project Manager for the Penta Wood Site, Tony Rutter/USEPA WAM, and Gina Bayer and Bill Andrae of CH2M. During this call, Bill Schultz indicated that the WDNR agreed that a site-specific criterion of 1.0 ug/L for PCP is appropriate for this site.

# Evaluation of Groundwater Contaminant Trends

Trend analysis of historical groundwater data is being presented to evaluate the performance of the remedial action implemented at the Penta Wood site. The objectives of this analysis include:

- Evaluation of the influent data from the groundwater extraction system to determine the amount of PCP removed between September 2000 when the treatment system was started, to September 2002 when it was shut down for evaluation and pilot testing.
- Evaluation of the current monitoring data to determine whether the plume is stable or declining in size, and to determine whether declining trends are occurring in groundwater PCP concentrations within the plume
- Evaluation of the current monitoring data to determine whether natural attenuation has been occurring onsite
- Evaluation of the infiltration basin area to determine effect of reinfiltration on groundwater quality
- Identify any needed changes in groundwater monitoring strategy

## Groundwater Extraction System PCP Removal Estimates

The groundwater extraction system was operated between Sept 27, 2000 to September 27, 2001, for a total of 280 days, with flow rates ranging from 35 gpm to 120 gpm during operation. A total volume of 30,000,000 gallons of groundwater, or about 2 pore volumes of the extraction zone, was removed. The PCP influent concentrations typically were in the 5,000 to 14,000 ug/L range. Based on this information, the estimated PCP mass removed was about 2,500 pounds (see Table 1).

**Table 1**
**PCP Mass Removed by Penta Wood Products Site Groundwater Extraction System**
**September 27, 2000 to September 27, 2001**

| Operation Period | Days Operated | Average Flow Rate (gpm) | Average PCP Influent Concentration (ug/L) | PCP Mass Removed (lbs.) |
|---|---|---|---|---|
| 9/27/00 to 12/18/00 | 83 | 98 | 12,535 | 1,224 |
| 2/2/01 to 2/8/01 | 8 | 60 | 12,535 | 72 |
| 3/16/01 to 6/10/01 | 86 | 75 | 10,356 | 802 |
| 6/15/01 to 9/27/01 | 103 | 46 | 7,535 | 429 |
| **Total PCP Mass Removed** | | | | 2,528 |

This represents about 30% of the dissolved phase PCP mass present prior to operation of the extraction system. However as shown in Table 2, it is estimated that there is considerably more PCP mass adsorbed on the aquifer matrix (11,000 pounds) and present in the LNAPL residual zone (15,000 pounds).

TABLE 2

Estimate of Saturated Zone Contaminant Mass

Penta Wood Products Site

| | | Unconfined MW10S, 19, 20 (Area 1) | Unconfined MW06S, PW01 (Area 2) | Unconfined MW03 (c) (Area 3) | Unconfined MW16 (Area 4) | Semiconfined MW5,10,18 (Area 1) | Semiconfined MW06, PW01 (Area 2) | Semiconfined MW03 (Area 3) | Semiconfined MW12 (Area 4) | Total Contaminant Mass (lb) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Aquifer Media Volume (CF): | 3,540,000 | 2,790,000 | 1,800,000 | 6,100,000 | 5,900,000 | 4,650,000 | 3,000,000 | 10,200,000 | |
| **Contaminant** | Aquifer Water Volume (CF): | 1,416,000 | 1,116,000 | 720,000 | 2,440,000 | 2,360,000 | 1,860,000 | 1,200,000 | 4,080,000 | |
| ***Mass in 1994- Based on Groundwater Sampling in September, 1994*** | | | | | | | | | | |
| PCP | Conc. (ug/L) | 77,300 | 51 | 2.6 | 0.3 | 17,400 | 2,350 | 2.6 | 10,000 | |
| (b) | Mass in soil (lb) | 18,236 | 9 | 0 | 0 | 6,842 | 728 | 1 | 6,798 | 32,614 |
| | Mass in GW (lb) | 6,815 | 4 | 0.1 | 0.05 | 2,557 | 272 | 0.2 | 2,540 | 12,188 |
| | **Total Mass (lb)** | **25,051** | **13** | **0.4** | **0.2** | **9,398** | **1,000** | **0.7** | **9,338** | **44,802** |
| ***Mass in 1997- Based on Groundwater Sampling in October, 1997*** | | | | | | | | | | |
| PCP | Conc. ($\mu$g/L) | 28,000 | 3 | 0.5 | 0.5 | 21,600 | 2,300 | 0.5 | 13,000 | |
| (b) | Mass in soil (lb) | 6,606 | 1 | 0 | 0 | 8,493 | 713 | 0 | 8,837 | 24,649 |
| | Mass in GW (lb) | 2,468 | 0 | 0.0 | 0.08 | 3,174 | 266 | 0.0 | 3,302 | 9,211 |
| | **Total Mass (lb)** | **9,074** | **1** | **0.1** | **0.3** | **11,667** | **979** | **0.1** | **12,139** | **33,860** |
| ***Mass in 2000, Prior to Groundwater Extraction- Based on Groundwater Sampling in April, 2000 a.*** | | | | | | | | | | |
| PCP | Conc. ($\mu$g/L) | 37,000 | | | 0.2 | 15,065 | | | 10,300 | |
| (b) | Mass in soil (lb) | 8,729 | 0 | 0 | 0 | 5,923 | 0 | 0 | 7,002 | 21,654 |
| | Mass in GW (lb) | 3,262 | 0 | 0.0 | 0.03 | 2,214 | 0 | 0.0 | 2,616 | 8,092 |
| | **Total Mass (lb)** | **11,991** | **0** | **0.0** | **0.1** | **8,137** | **0** | **0.0** | **9,618** | **29,746** |
| ***Mass in 2002, Following 1 Year of Groundwater Extraction- Based on Groundwater Sampling in August, 2002*** | | | | | | | | | | |
| PCP | Conc. ($\mu$g/L) | 14,797 | | | 0.0 | 11,255 | | | 4,300 | |
| (b) | Mass in soil (lb) | 3,491 | 0 | 0 | 0 | 4,425 | 0 | 0 | 2,923 | 10,839 |
| | Mass in GW (lb) | 1,305 | 0 | 0.0 | 0.01 | 1,654 | 0 | 0.0 | 1,092 | 4,051 |
| | **Total Mass (lb)** | **4,795** | **0** | **0.0** | **0.0** | **6,079** | **0** | **0.0** | **4,015** | **14,890** |

a. Where April 2000 groundwater data is not available for a MW, April 2001 data is used.

b. Kd = 0.6 (from Hydrogeologic Investigation, Dec., 1994), Soil density = 1.78 g/cm3

c.. Since there is only one well in Area 3, MW03, which is screened in the semiconfined aquifer, was chosen to represent the unconfined aquifer.

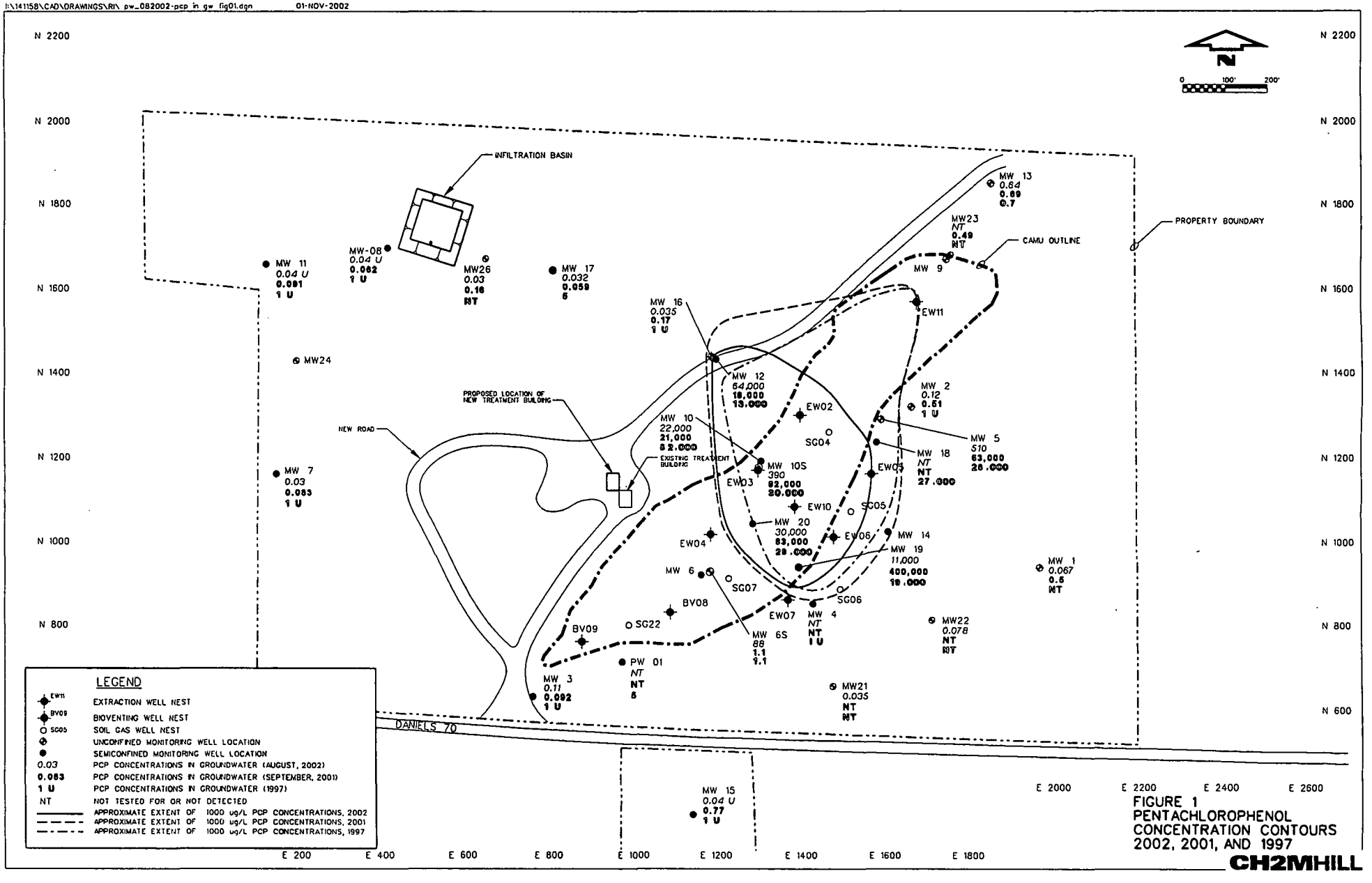


FIGURE 1
PENTACHLOROPHENOL
CONCENTRATION CONTOURS
2002, 2001, AND 1997

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P:\141158\CAD\DRAWINGS\RI\ pw_082002-pcp in gw fig02.dgn 01-NOV-2002

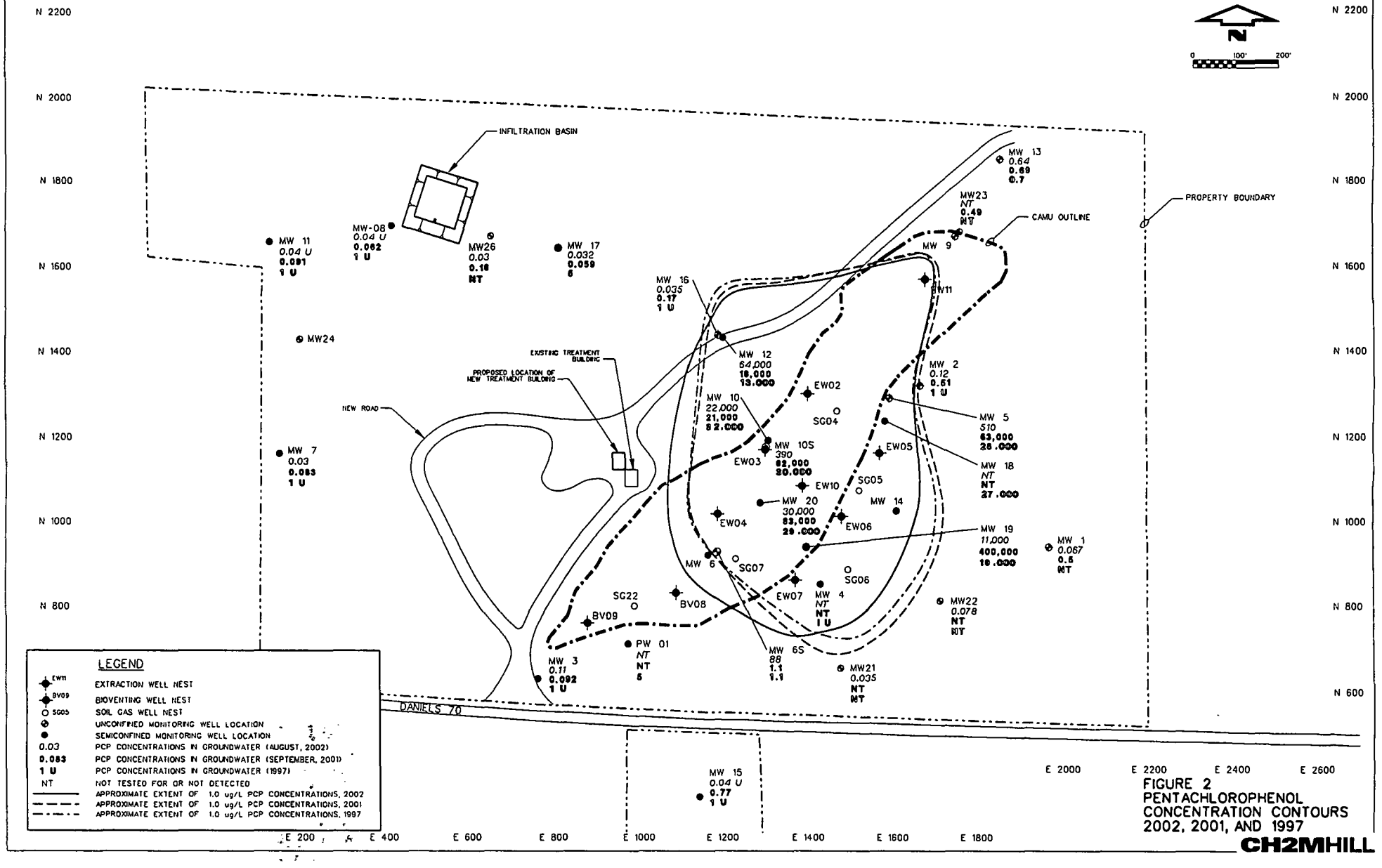



FIGURE 2
PENTACHLOROPHENOL
CONCENTRATION CONTOURS
2002, 2001, AND 1997

CH2MHILL

A summary of the PCP mass estimates for 1994, 1997, 2000 and 2002 at the Penta Wood Products site is presented in Table 3.

**Table 3**
**Summary of PCP Mass Estimates**
**Penta Wood Products Site**

| Location | 1994 PCP Mass (Pounds) | 1997 PCP Mass (Pounds) | April 2000 PCP Mass (Pounds) | August 2002 PCP Mass (Pounds) | Notes |
|---|---|---|---|---|---|
| **Unsaturated Zone** | 115,389 | 115,389 | 115,389 | 115,389 | No additional data to estimate actual degradation of PCP in unsaturated zone. |
| **LNAPL Residual Zone** | 15,001 | 15,001 | 15,001 | 15,001 | No additional data to estimate actual degradation of PCP in LNAPL zone. |
| **Saturated Zone- Adsorbed** | 32,614 | 24,649 | 21,654 | 10,839 | Based on Groundwater concentration and a PCP kd of 0.6. |
| **Saturated Zone- Dissolved** | 12,188 | 9,211 | 8,092 | 4,051 | Based on weighted average groundwater concentrations. |
| **Total PCP Mass** | 175,192 | 164,251 | 160,136 | 145,280 | |
| ***Removed by GW Extraction System 2000-2001*** | -- | -- | -- | ***2,528*** | |

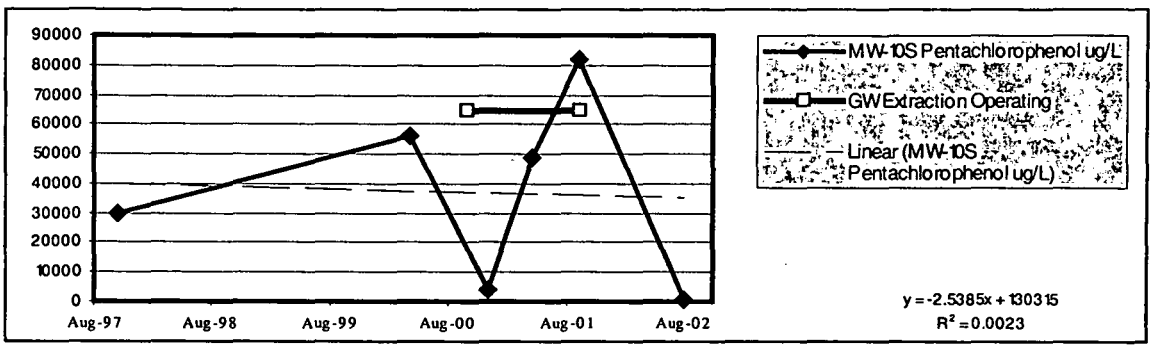
The volume of liquid waste that was obtained from the separator can be used to make a rough estimate of the volume of LNAPL that was removed by groundwater extraction. While the plant was operating, approximately 1,870 gallons of liquid waste was captured in the separator, and if the assumption is made that half of this waste was water, then approximately 935 gallons of LNAPL was removed.

## PCP Plume

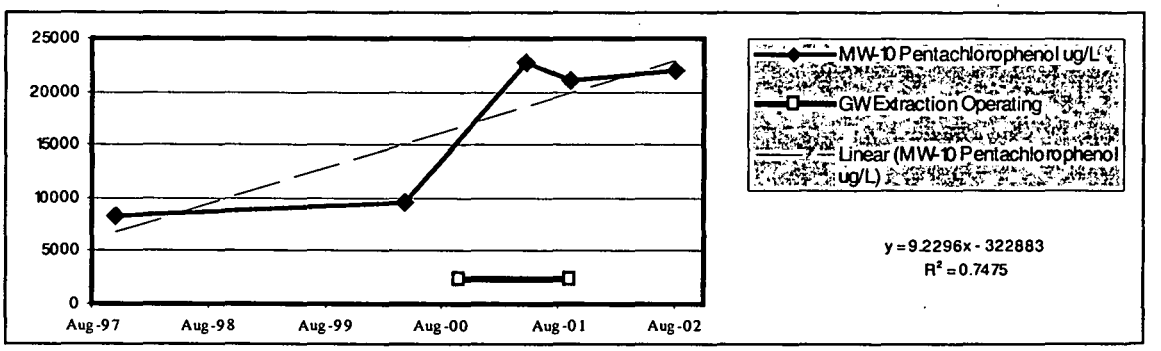
The monitoring well analytical results tables presented in Attachment 1 are formatted into three unique tables; the May 2002 quarterly sampling results, the August 2002 annual sampling results, and a compilation table that presents annual sampling results from 1997, 2000, 2001 and 2002.

In order to observe PCP trends over time, PCP concentration contours that exceed 1,000 ug/L are presented in Figure 1. The Wisconsin NR 140 enforcement standard of 1 ug/L were plotted and presented in Figure 2. A comparison of the 1,000 ug/L contour lines in Figure 1 for 1997, 2001 and 2002 shows that the plume has shrunk slightly between 1997 and 2002, as a result of the operation of the groundwater extraction system. The extent, as defined by the 1 ug/L contour in Figure 2, has diminished only slightly, possibly due to ongoing desorption into groundwater. Monitoring wells with LNAPL present in the lower half of screen do not show declines, most likely because of LNAPL entrainment in samples.

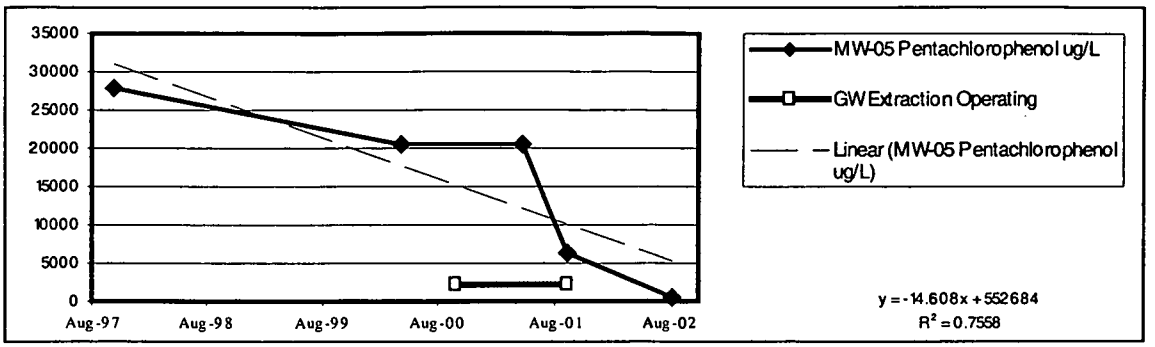
Monitoring well MW10S shows a sharp drop in PCP from 56,100 ug/L prior to groundwater extraction to 390 ug/L after operation. MW10S is likely near the perimeter of the high concentration PCP plume in the unconfined aquifer, where relatively clean groundwater has been drawn past the well screen by nearby extraction well EW-03. Because of its close proximity to the plume, random globules of product migrating with the groundwater could be responsible for the observed variability and occasional high PCP levels in this well.




PCP in monitoring well MW10 increased from 9,530 ug/L shortly before the start up of the treatment system to 22,000 ug/L in August 2002. Since concentrations in this well did not drop, it appears that the semiconfined aquifer in the vicinity of MW10 is contaminated in a wide area, and PCP may be migrating toward MW10 under the influence of EW-03.

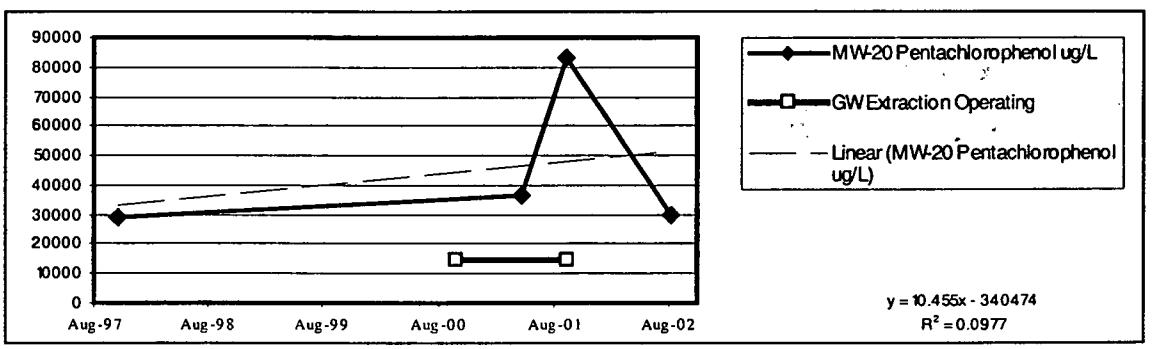



PCP in monitoring well MW05 dropped sharply from 20,600 ug/L to 510 ug/L, most likely because it is near the perimeter of the high concentration PCP plume. This area of the plume is remediated relatively quickly because of the nearby uncontaminated groundwater being drawn toward EW-02 and EW-05, thus purging the aquifer of PCP. Note the strong downward trend line with a very high coefficient of determination ($R^2 = 0.76$) indicating a good fit of the trend line to the data.




PCP in monitoring well MW19 increased from 11,000 ug/L to 14,000 ug/L. This well most likely has LNAPL within the lower half of the screen. The PCP concentrations are most likely indicative of the LNAPL and not the dissolved phase groundwater. A very large hit of 400,000 occurred in Sept 2001 most likely because of LNAPL entrainment in the groundwater sample. Because MW19 is "perched" over a low permeability till, the area around the well may be more difficult to quickly clean up.

Monitoring well MW20 increased slightly from 29,000 ug/L prior to the start of the extraction system, to 30,000 ug/L after operation. Although MW20 appears to have less fluctuation in PCP concentrations, similar trends were observed. It may also be influenced by the occasional presence of LNAPL seeping into the well.




The 2002 PCP concentrations in the perimeter areas are similar to 2001 indicating that the groundwater in the perimeter areas has not been adversely impacted by the shutdown of the treatment system in September 2001.

## Naphthalene

Naphthalene was detected in only 4 monitoring wells in 2002 (MW10, MW12, MW19 and MW20) at levels above reporting limits. Concentrations ranged from 32 ug/L to 1,400 ug/L. All four of the wells where naphthalene was detected are within the area of concentrated PCP.

## BTEX

Benzene was not detected in 2002 above reporting limits. Ethylbenzene and toluene were detected in MW10 and MW20 at concentrations below 15 ug/L. Xylene was detected in 5 monitoring wells in the concentrated PCP plume area at concentrations of 120 ug/L or less.

## Arsenic

Dissolved and total arsenic were analyzed in May and August 2002. Dissolved arsenic provides the best indicator of arsenic present in groundwater because total metal results are often biased high as a result of the presence of suspended solids in samples. When the groundwater sample is acidified for preservation the metals present as suspended solids are dissolved into the water. The suspended solids are typically orders of magnitude higher in metal concentrations compared to groundwater. As a result, even a very small amount of suspended solids can have a large effect on total metal concentrations. Turbidity was observed in some of the samples and in those cases, metals may not be representative of groundwater.

The evaluation of arsenic is made more difficult because dissolved arsenic may be biased low because dissolved arsenic may co-precipitate with iron as oxygen diffuses into the sample after removal from the well. The precipitated arsenic then is filtered out of the sample. As discussed earlier, many of the wells had to be bailed for purging and sampling. This method results in aeration of the samples and could bias the dissolved arsenic results low.

Dissolved arsenic in May and August samples was below the WDNR PAL of 5 ug/L in all samples except the August sample from MW10 (7.3 ug/L). MW10 is in the area of the reducing plume where dissolved arsenic is expected to be present at low levels.

Total arsenic did not exceed the WDNR Enforcement standard (ES) of 50 ug/L in any well in 20002. It did exceed the PAL in seven wells in 2002 (MW22, MW02, MW06S, MW10, MW13, MW19 and MW20), although all results less than 10 ug/L. The effect of suspended solids on metal results can also be discerned by comparing metal results within a sample. Typically suspended solids results in the elevation of several metals, such as iron and copper, in similar proportions. This appears to be the case in nearly all the samples where arsenic exceeded the PAL. A third line of evidence is the horizontal distribution of metals. If suspended solids are the source of elevated metals, the distribution of elevated metals will be random and not associated with the reducing portion of the PCP plume as expected if actually present in groundwater. This is the case as three of the seven wells with total arsenic above the PAL are in the aerobic plume perimeter. In summary, arsenic is known to be marginally exceeding the PAL in MW10 and possibly MW06S within the reducing portion of the plume and is below the ES in all wells.

## Copper

All samples were below the WDNR PAL for copper, which is 130 ug/L. The maximum measured dissolved copper concentration was 10.1 ug/L, and the maximum measured total copper was 87.4 ug/L in 2002.

## Evaluation of Natural Attenuation

Natural attenuation is a remediation approach that relies on natural processes that work to reduce mass and concentration of contaminants in soil and groundwater. Natural attenuation processes include dispersion, dilution, abiotic transformation, volatilization, sorption, and biodegradation. Biodegradation is often the most important process for compounds that can be transformed by indigenous microorganisms.

Attachment 3 contains a table presenting the natural attenuation parameters for each well as measured in 1997, 2000, 2001 and 2002.

### Limitations in Field Measurements of Natural Attenuation Parameters

The natural attenuation parameters measured in the field may not be truly representative of groundwater because of limitations that exist in the measurement methods.

Initially, dedicated pumps were installed in the wells, which would allow accurate measurement of down-hole parameters. However, due to the large hydraulic head (over 100 feet in some areas), dedicated pumps could not pump at sufficient rates to allow efficient purging to occur. As a result, bailing was used to purge and sample many of the wells. This process can aerate the groundwater and change ORP, DO and pH readings. The oxygenation may cause the precipitation of iron, arsenic and manganese with the subsequent removal from dissolved samples during field filtering. As a result, dissolved metals may not be representative of groundwater. Total metals can be useful in the evaluation of dissolved metal concentrations because the majority of total metals are expected to be in the dissolved phase in reducing areas of the plume. However if samples are turbid (such as MW03) or if metal casings in wells have corroded, total metals data may not be representative of groundwater. Because of these concerns, further evaluation of dedicated down-hole pumps for groundwater sampling is being undertaken.

### Oxidation/Reduction

Data generated during the RI suggested that the LNAPL area was reducing and the surrounding areas were oxidizing. The data from select wells was reviewed to determine if there is a substantial change in the reducing zone.

In monitoring well MW10S, iron, manganese and sulfide are elevated, and nitrate is depressed (other than what appears to be an outlier in September 2001). This is suggestive that this well continues to be reducing.

In monitoring well MW10, iron, manganese and sulfide are elevated, and nitrate is depressed. This is suggestive that this well continues to be reducing.

In monitoring well MW05, iron, manganese and sulfide are elevated, and nitrate is depressed. This is suggestive that this well continues to be reducing.

Monitoring well MW19 is somewhat unusual because it appears to be isolated by a layer of glacial till that exists immediately below the well, and results are effected by the LNAPL layer resting on the till layer. In this well, manganese is elevated and nitrate is depressed, but iron has dropped significantly as has sulfate and chloride. This is indicative of a changing contaminant profile.

In monitoring well MW20, iron and manganese are elevated and nitrate is depressed. This is suggestive that this well continues to be reducing.

Although dissolved oxygen measurements are questionable for the reasons discussed earlier, a review of the DO data in traditionally aerobic wells failed to show a shift toward anaerobic conditions, with one exception. The DO in MW09 appears to be very low in August 2002, however other wells in the same environment are fairly consistent indicating a possible inaccuracy in measurement.

In summary, based on current information, there is no substantial change in the reducing zone.

### Chloride

Chloride production is an indicator of PCP degradation, as about 700 ug/L of chloride is produced for each 1,000 ug/L of PCP degraded. Chloride concentrations contours for 1997, 2001 and 2002 are shown on Figure 2. Except for MW12, MW03, and MW21, chloride is generally higher in the vicinity of the interior wells than the perimeter wells. MW12 is in an isolated PCP plume, where concentrations as high as 18,000 ug/L were reported, with chloride levels ranging from 37 ug/L to 54 mg/L. MW03 and MW21 are traditionally higher than background.

Since the beginning of groundwater extraction, correlation between PCP degradation and chloride production has been difficult because as chloride is produced by biological degradation, it is removed by the extraction system, creating a net effect that is difficult to discern.

### Nitrate

In May, nitrate levels in were similar to previously detected levels. In August 2002, nitrate levels were less than the detection limit (0.15 mg/L) in all samples except MW12 (0.46 mg/L) and MW19 (0.16 mg/L). Since nitrate was not detected in many of the wells where it has been traditionally detected at much higher levels, nitrate data in August 2002 may be biased low.

### Methane

Methane, a product of anaerobic degradation, was detected in two wells in 2002, MW06S (0.27 ug/mL ) and MW10 (0.01 ug/mL), both in August. The absence of methane at or above the detection limit in most wells suggests that degradation is occurring primarily under aerobic conditions.

### Sulfate

Once oxygen and nitrate are depleted, sulfate can also be used as an electron acceptor. A comparison of sulfate in wells sampled in 2002 compared to wells sampled earlier show that sulfate reduction is not occurring at significant rates.

## Effects of Reinfiltration on Groundwater Quality

Large quantities of treated groundwater were re-injected at the infiltration basin. During the one-year of operation, about 30 million gallons of groundwater were re-infiltrated. This

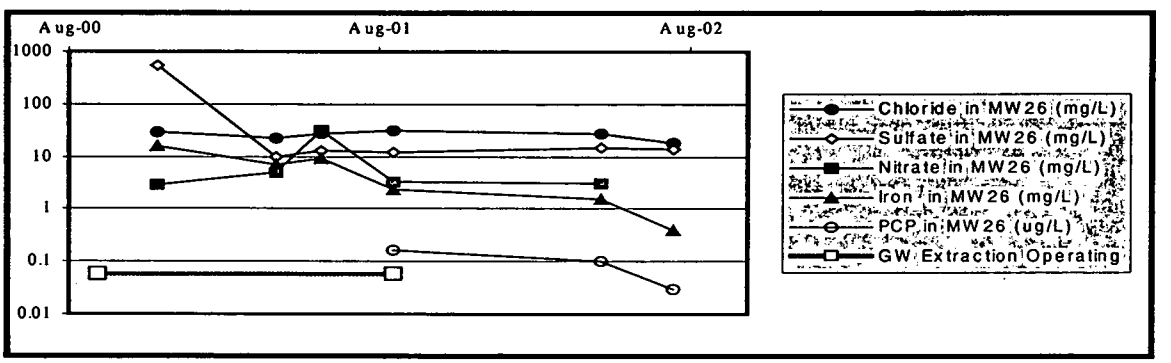
water would be expected to displace groundwater over a considerable area. Assuming that a 20-foot thickness of the aquifer is affected, the area occupied by 30 million gallons equates to about 15 acres.

Monitoring well MW26 is used to determine the effects the infiltration basin has on groundwater in the area. This well however was not sampled prior to discharge of groundwater. As a result, MW08, which is located about 200 feet upgradient, is used to establish the local background concentrations.

PCP in MW26 has remained similar to background levels during extraction well operation and after plant shutdown. During treatment system operation, PCP ranged from "below detection limits" to 0.16 ug/L in September 2001. In 2002, PCP was detected at 0.1 ug/L in May, and 0.03 ug/L in August.

Based on surrounding background concentrations, chloride has increased from an expected background of about 5 mg/L to a range of 20 to 30 mg/L. Sulfate increased from a background of about 7 mg/L to 14 mg/L. These are expected because the treated groundwater from the source area is elevated in chloride and sulfate. Iron has dropped significantly at MW26. This is also expected because the aeration of the groundwater results in precipitation and removal of iron from the treated groundwater. Nitrate has also dropped as expected because the source area groundwater has minimal nitrate.

Another beneficial aspect of re-infiltrating groundwater is that treatment results in aeration and re-oxygenation of the water. The estimated 30 million gallons of treated groundwater supplies about 2,000 pounds of oxygen (assuming an average of 8 mg/L oxygen) for aerobic biodegradation of PCP, once this re-infiltrated groundwater arrives at the PCP plume. Assuming all the oxygen is used for PCP degradation, about 2,900 pounds of PCP would be degraded. This is an amount similar to the 2,500 pounds of PCP that was removed in the extraction system.




In summary, infiltration of treated groundwater has not increased PCP in groundwater but has increased chloride and sulfate, and depressed iron and nitrate, as expected. In the future the re-injection of treated groundwater is expected to accelerate the decline in PCP groundwater concentrations through increased aerobic biological degradation.

# Summary

Semiannual groundwater sampling was conducted at the Penta Wood Products site in May 2002 for six monitoring wells and four residential wells. The second post-Remedial Action annual groundwater sampling event was conducted in August 2002 and consisted of twenty-one monitoring wells and the same four residential wells.

Water level measurements taken in the western part of the site during plant shutdown show that current flow directions are consistent with past in both the unconfined and semiconfined aquifers. The majority of the groundwater in the unconfined aquifer is flowing in a northerly direction, and in a northwesterly direction in the semiconfined aquifer.

East of the infiltration basin, the semiconfined groundwater flow is consistent with past flow directions, which is generally toward the west; however, the shallow unconfined groundwater shows a distinct change from flows encountered during the operation of the extraction system. Currently, groundwater is generally flowing toward the north, however during plant operation, shallow groundwater flows converge from all directions toward the extraction well system. LNAPL was measured in MW18 and MW19 at levels less than 0.5 feet thickness. LNAPL in MW18 is consistent with past measurements, but LNAPL thickness dropped by about 0.3 ft. in MW19. A sheen was observed in MW06S and MW10S, and product was observed in MW20, however the interface probe did not measure LNAPL in these wells in 2002.

Preliminary results for the four residential wells sampled in August 2002 showed trace levels of PCP in one well at 0.04 ug/L, equal to the detection limit. No other chemical detects were reported in the residential wells sampled in August.

The groundwater extraction system was operated from Sept 27, 2000 to September 27, 2001 and removed 30,000,000 gallons of groundwater, or about 2 pore volumes of the extraction zone. The corresponding mass of PCP removed was about 2,500 pounds.

The PCP plume exceeding 1,000 ug/L has shrunk slightly between 1997 and 2002 as a result of groundwater extraction. The extent, as defined by the 1 ug/L contour, has diminished only slightly, possibly due to ongoing desorption into groundwater. The 2002 PCP concentrations in the perimeter areas are similar to 2001 indicating that the groundwater in the perimeter areas has not been adversely impacted by the shutdown of the treatment system in September 2001.

Naphthalene, ethylbenzene, toluene and xylene are present in several of the wells in the area of concentrated PCP. They are not present in the monitoring wells along the plume perimeter.

Arsenic marginally exceeds the PAL in MW10 and MW06S within the reducing portion of the plume and is below the ES in all wells. Copper does not exceed the PAL.

Evaluation of the natural attenuation parameters revealed no significant changes in the groundwater conditions from those previously measured during the RI. The reducing zone below the CAMU remains substantially unchanged.

Infiltration of treated groundwater has not increased PCP in groundwater but has increased chloride, sulfate and depressed iron and nitrate as expected. In the future the re-injection of

treated groundwater is expected to accelerate the decline in PCP groundwater concentrations through increased aerobic biological degradation.

# Recommendations

Some changes to the sampling methodology are recommended based on this evaluation. Dedicated pumps capable of lifting groundwater over 100 feet will be researched and, if available, will be recommended for purchase and installation. This will allow more accurate measurement of natural attenuation parameters, minimize suspended solids in samples for total metals analysis and minimize aeration of samples during collection. Also in the future groundwater samples with turbidity in excess of 10 NTUs should not be submitted for total metals analysis.

# Attachment 1

# Analytical Results

# Quarterly Groundwater Sampling Analytical Results

## May 2002

# Penta Wood Products
# May 2002 Quarterly GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-01 | MW-01 | MW-12 | MW-12 | MW-12 | MW-12 | MW-12 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water, Dup | Water, Dup | Water, Dup | Water | Water |
| **Sample Collection Date:** | | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 |
| **Field Sample Identification:** | | 02CB14-05 | 02CB14-06 | 02CB14-03 | 02CB14-03DIL | 02CB14-04 | 02CB14-07 | 02CB14-07DIL |
| **Laboratory Sample Identification:** | | 02052485-24 | 02052485-25 | 02052485-11 | 02052485-11 | 02052485-12 | 02052485-9 | 02052485-9 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 1.4 U | NA | 1.4 U | NA | NA | 2 J | NA |
| Arsenic, Dissolved | ug/L | NA | 1.4 U | NA | NA | 1.5 J | NA | NA |
| Copper | ug/L | 12.1 J | NA | 5.3 J | NA | NA | 5.3 J | NA |
| Copper, Dissolved | ug/L | NA | 1.6 J | NA | NA | 5 J | NA | NA |
| Iron | ug/L | 2700 = | NA | 44.5 = | NA | NA | 67.6 = | NA |
| Iron, Dissolved | ug/L | NA | 11.2 U | NA | NA | 11.2 U | NA | NA |
| Manganese | ug/L | 247 = | NA | 1670 = | NA | NA | 1670 = | NA |
| Manganese, Dissolved | ug/L | NA | 0.48 J | NA | NA | 1670 = | NA | NA |
| Zinc | ug/L | 8.1 J | NA | 7.4 J | NA | NA | 14.1 J | NA |
| Zinc, Dissolved | ug/L | NA | 5.4 J | NA | NA | 9.3 J | NA | NA |
| Alkalinity, Total | mg/L | 160 = | NA | 490 = | NA | NA | 490 = | NA |
| Chloride | mg/L | 9.3 = | NA | 39 = | NA | NA | 40 = | NA |
| Hardness (As CaCO3) | mg/L | 200 = | NA | 520 = | NA | NA | 510 = | NA |
| Nitrogen, Nitrate (As N) | mg/L | 2.7 J | NA | 0.68 J | NA | NA | 0.67 J | NA |
| Sulfide | mg/L | 2 U | NA | 2 U | NA | NA | 2 U | NA |
| Sulfate | mg/L | 7.8 = | NA | 16 = | NA | NA | 17 = | NA |
| Total Organic Carbon | mg/L | 6.1 = | NA | 31 = | NA | NA | 32 = | NA |
| Pentachlorophenol | ug/L | 0.13 J | NA | 4000 = | 4000 R | NA | 4300 = | 4300 R |
| Naphthalene | ug/L | 5 U | NA | 33 = | NA | NA | 32 = | NA |
| Benzene | ug/L | 1 U | NA | 1 U | NA | NA | 1 U | NA |
| Ethylbenzene | ug/L | 5 U | NA | 2 J | NA | NA | 2 J | NA |
| Toluene | ug/L | 5 U | NA | 2 J | NA | NA | 2 J | NA |
| Xylenes (Total) | ug/L | 5 U | NA | 14 = | NA | NA | 15 = | NA |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# May 2002 Quarterly GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-12 | MW-19 | MW-19 | MW-19 | MW-21 | MW-21 | MW-22 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 05/14/2002 | 05/13/2002 | 05/13/2002 | 05/13/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 |
| **Field Sample Identification:** | | 02CB14-08 | 02CB14-09 | 02CB14-09DIL | 02CB14-10 | 02CB14-11 | 02CB14-12 | 02CB14-13 |
| **Laboratory Sample Identification:** | | 02052485-10 | 02052485-6 | 02052485-6 | 02052485-7 | 02052485-3 | 02052485-4 | 02052485-26 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 1.9 J | NA | NA | 3.7 = | NA | 7.2 = |
| Arsenic, Dissolved | ug/L | 1.4 U | NA | NA | 1.4 U | NA | 1.9 J | NA |
| Copper | ug/L | NA | 12.9 J | NA | NA | 81.7 = | NA | 73.2 = |
| Copper, Dissolved | ug/L | 4.9 J | NA | NA | 5.1 J | NA | 1.3 J | NA |
| Iron | ug/L | NA | 108 = | NA | NA | 14200 = | NA | 16900 = |
| Iron, Dissolved | ug/L | 11.2 U | NA | NA | 11.2 U | NA | 130 = | NA |
| Manganese | ug/L | NA | 2110 = | NA | NA | 1100 = | NA | 1080 = |
| Manganese, Dissolved | ug/L | 1680 = | NA | NA | 2070 = | NA | 9.7 J | NA |
| Zinc | ug/L | NA | 7.3 J | NA | NA | 50.8 = | NA | 38.7 = |
| Zinc, Dissolved | ug/L | 12 J | NA | NA | 9.4 J | NA | 11 J | NA |
| Alkalinity, Total | mg/L | NA | 150 = | NA | NA | 110 = | NA | 130 = |
| Chloride | mg/L | NA | 33 = | NA | NA | 69 = | NA | 18 = |
| Hardness (As CaCO3) | mg/L | NA | 250 = | NA | NA | 140 = | NA | 240 = |
| Nitrogen, Nitrate (As N) | mg/L | NA | 2 J | NA | NA | 2 J | NA | 3.7 J |
| Sulfide | mg/L | NA | 2 U | NA | NA | 2 U | NA | 0.7 J |
| Sulfate | mg/L | NA | 16 = | NA | NA | 7.3 = | NA | 14 = |
| Total Organic Carbon | mg/L | NA | 45 = | NA | NA | 3.1 = | NA | 2 = |
| Pentachlorophenol | ug/L | NA | 14000 = | 14000 R | NA | 0.07 J | NA | 0.12 = |
| Naphthalene | ug/L | NA | 190 = | 190 R | NA | 5 U | NA | 5 U |
| Benzene | ug/L | NA | 1 U | NA | NA | 1 U | NA | 1 U |
| Ethylbenzene | ug/L | NA | 2 J | NA | NA | 5 U | NA | 5 U |
| Toluene | ug/L | NA | 1 J | NA | NA | 5 U | NA | 5 U |
| Xylenes (Total) | ug/L | NA | 31 = | NA | NA | 5 U | NA | 5 U |

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# Penta Wood Products
# May 2002 Quarterly GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-22 | MW-26 | MW-26 | RW-01 | RW-02 | RW-03 | RW-04 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 | 05/14/2002 |
| **Field Sample Identification:** | | 02CB14-14 | 02CB14-15 | 02CB14-16 | 02CB14-17 | 02CB14-18 | 02CB14-19 | 02CB14-20 |
| **Laboratory Sample Identification:** | | 02052485-27 | 02052485-19 | 02052485-23 | 02052485-14 | 02052485-15 | 02052485-16 | 02052485-17 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 1.4 J | NA | NA | NA | NA | NA |
| Arsenic, Dissolved | ug/L | 1.4 U | NA | 1.4 U | NA | NA | NA | NA |
| Copper | ug/L | NA | 5 J | NA | NA | NA | NA | NA |
| Copper, Dissolved | ug/L | 0.3 U | NA | 1.2 J | NA | NA | NA | NA |
| Iron | ug/L | NA | 1530 = | NA | NA | NA | NA | NA |
| Iron, Dissolved | ug/L | 22.9 J | NA | 11.2 U | NA | NA | NA | NA |
| Manganese | ug/L | NA | 57.2 = | NA | NA | NA | NA | NA |
| Manganese, Dissolved | ug/L | 3.5 J | NA | 0.73 J | NA | NA | NA | NA |
| Zinc | ug/L | NA | 9.7 J | NA | NA | NA | NA | NA |
| Zinc, Dissolved | ug/L | 2.7 J | NA | 9.3 J | NA | NA | NA | NA |
| Alkalinity, Total | mg/L | NA | 260 = | NA | NA | NA | NA | NA |
| Chloride | mg/L | NA | 27 = | NA | NA | NA | NA | NA |
| Hardness (As CaCO3) | mg/L | NA | 300 = | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 3 J | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | 2 U | NA | NA | NA | NA | NA |
| Sulfate | mg/L | NA | 15 = | NA | NA | NA | NA | NA |
| Total Organic Carbon | mg/L | NA | 5 = | NA | NA | NA | NA | NA |
| Pentachlorophenol | ug/L | NA | 0.1 = | NA | 0.23 = | 0.1 = | 0.094 J | 0.13 = |
| Naphthalene | ug/L | NA | 5 U | NA | 5 U | 5 U | 5 U | 5 U |
| Benzene | ug/L | NA | 1 U | NA | 1 U | 1 U | 1 U | 1 U |
| Ethylbenzene | ug/L | NA | 5 U | NA | 5 U | 5 U | 5 U | 5 U |
| Toluene | ug/L | NA | 5 U | NA | 2 J | 5 U | 5 U | 5 U |
| Xylenes (Total) | ug/L | NA | 5 U | NA | 2 J | 5 U | 5 U | 5 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Annual Groundwater Sampling Analytical Results

# August 2002

# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-01 | MW-01 | MW-01 | MW-01 | MW-02 | MW-02 | MW-03 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water, Dup | Water, Dup | Water | Water | Water |
| **Sample Collection Date:** | | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/07/2002 |
| **Field Sample Identification:** | | 02CB18-09 | 02CB18-10 | 02CB18-11 | 02CB18-12 | 02CB18-13 | 02CB18-14 | 02CB18-15 |
| **Laboratory Sample Identification:** | | 02081571-27 | 02081571-28 | 02081571-29 | 02081571-30 | 02081571-9 | 02081571-10 | 02081571-35 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | 2 U | NA | 2 U | NA | 2 U | NA | 2 U |
| Methane | ug/ml | 0.01 U | NA | 0.01 U | NA | 0.01 U | NA | 0.01 U |
| Arsenic | ug/L | 1.4 U | NA | 1.8 =B | NA | 6.4 = | NA | 1.7 =B |
| Arsenic, Dissolved | ug/L | NA | 1.7 =B | NA | 1.4 U | NA | 1.4 U | NA |
| Copper | ug/L | 7.6 =B | NA | 9.5 =B | NA | 30 = | NA | 2.3 =B |
| Copper, Dissolved | ug/L | NA | 0.3 U | NA | 0.3 U | NA | 0.3 U | NA |
| Iron | ug/L | 1700 = | NA | 2200 = | NA | 10000 = | NA | 480 = |
| Iron, Dissolved | ug/L | NA | 11 U | NA | 11 U | NA | 48 = | NA |
| Manganese | ug/L | 180 = | NA | 230 = | NA | 420 = | NA | 15 =B |
| Manganese, Dissolved | ug/L | NA | 0.95 =B | NA | 2.2 =B | NA | 18 = | NA |
| Zinc | ug/L | 5.8 =B | NA | 6.5 =B | NA | 26 =B | NA | 1.4 =B |
| Zinc, Dissolved | ug/L | NA | 3.9 =B | NA | 2.9 =B | NA | 9.1 =B | NA |
| Alkalinity, Total | mg/L | 170 = | NA | 160 = | NA | 66 = | NA | 420 = |
| Chloride | mg/L | 7.4 = | NA | 7.3 = | NA | 3 = | NA | 69 = |
| Hardness (As CaCO3) | mg/L | 190 = | NA | 190 = | NA | 98 = | NA | 540 = |
| Nitrogen, Nitrate (As N) | mg/L | 0.15 U | NA | 0.15 U | NA | 0.15 U | NA | 0.15 U |
| Sulfate | mg/L | 7.9 = | NA | 7.7 = | NA | 10 = | NA | 16 = |
| Total Organic Carbon | mg/L | 2.6 = | NA | 3.7 = | NA | 3.2 = | NA | 1.4 = |
| Pentachlorophenol | ug/L | 0.067 = | NA | 0.063 = | NA | 0.12 = | NA | 0.11 = |
| Naphthalene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 5 U |
| Benzene | ug/L | 1 U | NA | 1 U | NA | 1 U | NA | 1 U |
| Ethylbenzene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA | 2.5 U |
| O-Xylene | ug/L | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA | 2.5 U |
| Toluene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 5 U |
| Xylenes (Total) | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 5 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-03 | MW-05 | MW-05 | MW-06S | MW-06S | MW-07 | MW-07 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 08/07/2002 | 08/07/2002 | 08/07/2002 | 08/07/2002 | 08/07/2002 | 08/07/2002 | 08/07/2002 |
| **Field Sample Identification:** | | 02CB18-16 | 02CB18-17 | 02CB18-18 | 02CB18-19 | 02CB18-20 | 02CB18-21 | 02CB18-22 |
| **Laboratory Sample Identification:** | | 02081571-36 | 02081836-7 | 02081836-8 | 02081836-10 | 02081836-11 | 02081571-32 | 02081571-33 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | NA | 2 U | NA | 2 U | NA | 2 U | NA |
| Methane | ug/ml | NA | NA | NA | 0.27 = | NA | 0.01 U | NA |
| Arsenic | ug/L | NA | 4.1 = | NA | 5.5 = | NA | 1.5 =B | NA |
| Arsenic, Dissolved | ug/L | 1.9 =B | NA | 2 =B | NA | 2.7 = | NA | 1.4 U |
| Copper | ug/L | NA | 28 = | NA | 69.1 = | NA | 0.3 U | NA |
| Copper, Dissolved | ug/L | 0.58 =B | NA | 1.5 =B | NA | 9.9 =B | NA | 0.3 U |
| Iron | ug/L | NA | 34500 = | NA | 7570 = | NA | 730 = | NA |
| Iron, Dissolved | ug/L | 160 = | NA | 7900 = | NA | 3330 = | NA | 300 = |
| Manganese | ug/L | NA | 8130 = | NA | 2210 = | NA | 6.5 =B | NA |
| Manganese, Dissolved | ug/L | 12 =B | NA | 7840 = | NA | 1790 = | NA | 4 =B |
| Zinc | ug/L | NA | 104 = | NA | 18.3 =B | NA | 2.8 =B | NA |
| Zinc, Dissolved | ug/L | 4.8 =B | NA | 26.9 =B | NA | 9.7 =B | NA | 0.98 U |
| Alkalinity, Total | mg/L | NA | 220 = | NA | 270 = | NA | 390 = | NA |
| Chloride | mg/L | NA | 26 = | NA | 17 = | NA | 21 = | NA |
| Hardness (As CaCO3) | mg/L | NA | 4 U | NA | 4 U | NA | 450 = | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 0.15 U | NA | 0.15 U | NA | 0.15 U | NA |
| Sulfate | mg/L | NA | 21 = | NA | 18 = | NA | 10 = | NA |
| Total Organic Carbon | mg/L | NA | 25 = | NA | 5.8 = | NA | 1.5 = | NA |
| Pentachlorophenol | ug/L | NA | 510 =B | NA | 88 =B | NA | 0.03 J | NA |
| Naphthalene | ug/L | NA | 3.2 J | NA | 5 U | NA | 5 U | NA |
| Benzene | ug/L | NA | 1 U | NA | 1 U | NA | 1 U | NA |
| Ethylbenzene | ug/L | NA | 5 U | NA | 5 U | NA | 5 U | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA |
| O-Xylene | ug/L | NA | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA |
| Toluene | ug/L | NA | 5 U | NA | 5 U | NA | 5 U | NA |
| Xylenes (Total) | ug/L | NA | 5 U | NA | 5 U | NA | 5 U | NA |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-08 | MW-08 | MW-09 | MW-09 | MW-10 | MW-10 | MW-10S |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 08/08/2002 | 08/08/2002 | 08/06/2002 | 08/06/2002 | 08/07/2002 | 08/07/2002 | 08/07/2002 |
| **Field Sample Identification:** | | 02CB18-23 | 02CB18-24 | 02CB18-25 | 02CB18-26 | 02CB18-27 | 02CB18-28 | 02CB18-29 |
| **Laboratory Sample Identification:** | | 02081571-38 | 02081571-39 | 02081571-11 | 02081571-12 | 02081836-1 | 02081836-2 | 02081836-5 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | 2 U | NA | 2 U | NA | 2 U | NA | 2 U |
| Methane | ug/ml | 0.01 U | NA | 0.01 U | NA | 0.011 = | NA | 0.01 U |
| Arsenic | ug/L | 1.4 U | NA | 1.4 U | NA | 9.5 = | NA | 3.9 = |
| Arsenic, Dissolved | ug/L | NA | 1.8 =B | NA | 1.4 U | NA | 7.3 = | NA |
| Copper | ug/L | 0.3 U | NA | 1.6 =B | NA | 48.2 = | NA | 53.3 = |
| Copper, Dissolved | ug/L | NA | 0.27 U | NA | 0.3 U | NA | 10.1 =B | NA |
| Iron | ug/L | 98 = | NA | 200 = | NA | 24400 = | NA | 9490 = |
| Iron, Dissolved | ug/L | NA | 11 =B | NA | 11 U | NA | 10700 = | NA |
| Manganese | ug/L | 6.4 =B | NA | 14 =B | NA | 2730 = | NA | 7560 = |
| Manganese, Dissolved | ug/L | NA | 5.3 =B | NA | 6.3 =B | NA | 2540 = | NA |
| Zinc | ug/L | 12 =B | NA | 6.4 =B | NA | 2.8 =B | NA | 22.4 =B |
| Zinc, Dissolved | ug/L | NA | 2.3 =B | NA | 9.6 =B | NA | 6.1 =B | NA |
| Alkalinity, Total | mg/L | 180 = | NA | 64 = | NA | 400 = | NA | 170 = |
| Chloride | mg/L | 4.2 = | NA | 11 = | NA | 56 = | NA | 10 = |
| Hardness (As CaCO3) | mg/L | 310 = | NA | 95 = | NA | 480 = | NA | 4 U |
| Nitrogen, Nitrate (As N) | mg/L | 0.15 U | NA | 0.15 U | NA | 0.15 U | NA | 0.11 J |
| Sulfate | mg/L | 6 = | NA | 22 = | NA | 20 = | NA | 14 = |
| Total Organic Carbon | mg/L | 1.1 = | NA | 8.4 = | NA | 110 = | NA | 10 = |
| Pentachlorophenol | ug/L | 0.04 U | NA | 0.54 = | NA | 22000 =B | NA | 390 =B |
| Naphthalene | ug/L | 5 U | NA | 5 U | NA | 120 = | NA | 5 U |
| Benzene | ug/L | 1 U | NA | 1 U | NA | 1 U | NA | 1 U |
| Ethylbenzene | ug/L | 5 U | NA | 5 U | NA | 7 = | NA | 1 J |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2.5 U | NA | 2.5 U | NA | 32 = | NA | 5 = |
| O-Xylene | ug/L | 2.5 U | NA | 2.5 U | NA | 22 = | NA | 5 = |
| Toluene | ug/L | 5 U | NA | 5 U | NA | 11 = | NA | 5 U |
| Xylenes (Total) | ug/L | 5 U | NA | 5 U | NA | 54 = | NA | 10 = |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-10S | MW-11 | MW-11 | MW-12 | MW-12 | MW-13 | MW-13 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 08/07/2002 | 08/06/2002 | 08/06/2002 | 08/08/2002 | 08/08/2002 | 08/05/2002 | 08/05/2002 |
| **Field Sample Identification:** | | 02CB18-30 | 02CB18-31 | 02CB18-32 | 02CB18-33 | 02CB18-34 | 02CB18-03 | 02CB18-04 |
| **Laboratory Sample Identification:** | | 02081836-6 | 02081571-14 | 02081571-15 | 02081836-12 | 02081836-13 | 02081571-6 | 02081571-7 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | NA | 2 U | NA | 2 U | NA | 2 U | NA |
| Methane | ug/ml | NA | 0.01 U | NA | 0.01 U | NA | 0.01 U | NA |
| Arsenic | ug/L | NA | 4.7 = | NA | 2.8 = | NA | 9.1 = | NA |
| Arsenic, Dissolved | ug/L | 3.1 = | NA | 1.5 =B | NA | 1.4 U | NA | 2.2 =B |
| Copper | ug/L | NA | 0.83 =B | NA | 5.6 =B | NA | 55.3 = | NA |
| Copper, Dissolved | ug/L | 2.3 =B | NA | 0.3 U | NA | 2.9 =B | NA | 2.5 =B |
| Iron | ug/L | NA | 46 = | NA | 123 = | NA | 19000 = | NA |
| Iron, Dissolved | ug/L | 67.3 = | NA | 11.2 U | NA | 105 = | NA | 1300 = |
| Manganese | ug/L | NA | 2.3 =B | NA | 1620 = | NA | 580 = | NA |
| Manganese, Dissolved | ug/L | 7070 = | NA | 1.2 =B | NA | 1600 = | NA | 45 = |
| Zinc | ug/L | NA | 6.4 =B | NA | 7.7 =B | NA | 39.5 = | NA |
| Zinc, Dissolved | ug/L | 0.98 U | NA | 8.5 =B | NA | 3.3 =B | NA | 9.1 =B |
| Alkalinity, Total | mg/L | NA | 210 = | NA | 460 = | NA | 86 = | NA |
| Chloride | mg/L | NA | 7.8 = | NA | 37 = | NA | 6.8 = | NA |
| Hardness (As CaCO3) | mg/L | NA | 230 = | NA | 4 U | NA | 110 = | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 0.15 U | NA | 0.46 = | NA | 0.15 U | NA |
| Sulfate | mg/L | NA | 7.6 = | NA | 15 = | NA | 8.4 = | NA |
| Total Organic Carbon | mg/L | NA | 18 = | NA | 28 = | NA | 6.3 = | NA |
| Pentachlorophenol | ug/L | NA | 0.04 U | NA | 6400 =B | NA | 0.64 = | NA |
| Naphthalene | ug/L | NA | 5 U | NA | 28 = | NA | 5 U | NA |
| Benzene | ug/L | NA | 1 U | NA | 1 U | NA | 1 U | NA |
| Ethylbenzene | ug/L | NA | 5 U | NA | 2 J | NA | 5 U | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 2.5 U | NA | 8 = | NA | 2.5 U | NA |
| O-Xylene | ug/L | NA | 2.5 U | NA | 7 = | NA | 2.5 U | NA |
| Toluene | ug/L | NA | 5 U | NA | 2 J | NA | 5 U | NA |
| Xylenes (Total) | ug/L | NA | 5 U | NA | 15 = | NA | 5 U | NA |

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# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-15 | MW-15 | MW-16 | MW-16 | MW-17 | MW-17 | MW-19 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/08/2002 | 08/08/2002 | 08/08/2002 |
| **Field Sample Identification:** | | 02CB18-35 | 02CB18-36 | 02CB18-37 | 02CB18-38 | 02CB18-39 | 02CB18-40 | 02CB18-43 |
| **Laboratory Sample Identification:** | | 02081571-24 | 02081571-25 | 02081571-19 | 02081571-20 | 02081571-46 | 02081571-47 | 02081836-14 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | 2 U | NA | 2 U | NA | 2 U | NA | 2 U |
| Methane | ug/ml | 0.01 U | NA | 0.01 U | NA | 0.01 U | NA | 0.01 U |
| Arsenic | ug/L | 3.7 = | NA | 3.5 = | NA | 3 = | NA | 7 = |
| Arsenic, Dissolved | ug/L | NA | 2.6 = | NA | 1.4 U | NA | 1.9 =B | NA |
| Copper | ug/L | 1.6 =B | NA | 25 =B | NA | 0.47 =B | NA | 30.2 = |
| Copper, Dissolved | ug/L | NA | 0.3 U | NA | 0.3 U | NA | 0.3 U | NA |
| Iron | ug/L | 130 = | NA | 6800 = | NA | 11 U | NA | 719 = |
| Iron, Dissolved | ug/L | NA | 11 U | NA | 78 = | NA | 11 U | NA |
| Manganese | ug/L | 2.8 =B | NA | 14 = | NA | 0.42 U | NA | 3100 = |
| Manganese, Dissolved | ug/L | NA | 0.42 U | NA | 9.1 =B | NA | 0.42 U | NA |
| Zinc | ug/L | 17 =B | NA | 760 =B | NA | 0.98 U | NA | 290 = |
| Zinc, Dissolved | ug/L | NA | 11 =B | NA | 13 =B | NA | 15 =B | NA |
| Alkalinity, Total | mg/L | 230 = | NA | 130 = | NA | 200 = | NA | 130 = |
| Chloride | mg/L | 16 = | NA | 2 = | NA | 4.6 = | NA | 22 = |
| Hardness (As CaCO3) | mg/L | 250 = | NA | 120 = | NA | 210 = | NA | 4 U |
| Nitrogen, Nitrate (As N) | mg/L | 0.15 U | NA | 0.15 U | NA | 0.15 U | NA | 0.16 = |
| Sulfate | mg/L | 4.7 = | NA | 13 = | NA | 7.4 = | NA | 16 = |
| Total Organic Carbon | mg/L | 53 = | NA | 1.3 = | NA | 0.73 = | NA | 65 = |
| Pentachlorophenol | ug/L | 0.04 U | NA | 0.035 J | NA | 0.032 J | NA | 11000 =B |
| Naphthalene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 210 = |
| Benzene | ug/L | 1 U | NA | 1 U | NA | 1 U | NA | 1 U |
| Ethylbenzene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 2 J |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA | 12 = |
| O-Xylene | ug/L | 2.5 U | NA | 2.5 U | NA | 2.5 U | NA | 17 = |
| Toluene | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 1 J |
| Xylenes (Total) | ug/L | 5 U | NA | 5 U | NA | 5 U | NA | 29 = |

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# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-19 | MW-20 | MW-20 | MW-21 | MW-21 | MW-22 | MW-22 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 08/08/2002 | 08/07/2002 | 08/07/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 |
| **Field Sample Identification:** | | 02CB18-44 | 02CB18-45 | 02CB18-46 | 02CB18-47 | 02CB18-48 | 02CB18-49 | 02CB18-50 |
| **Laboratory Sample Identification:** | | 02081836-15 | 02081836-3 | 02081836-4 | 02081571-21 | 02081571-22 | 02081571-16 | 02081571-17 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | NA | 2 U | NA | 2 U | NA | 2 U | NA |
| Methane | ug/ml | NA | 0.01 U | NA | NA | NA | 0.01 U | NA |
| Arsenic | ug/L | NA | 8.9 = | NA | 4.4 = | NA | 2.2 =B | NA |
| Arsenic, Dissolved | ug/L | 1.4 U | NA | 2.6 = | NA | 1.6 =B | NA | 1.4 U |
| Copper | ug/L | NA | 87.4 = | NA | 50 = | NA | 9.8 =B | NA |
| Copper, Dissolved | ug/L | 7.1 =B | NA | 5.8 =B | NA | 0.3 U | NA | 0.3 U |
| Iron | ug/L | NA | 4910 = | NA | 10000 = | NA | 2500 = | NA |
| Iron, Dissolved | ug/L | 218 = | NA | 206 = | NA | 11 U | NA | 25 =B |
| Manganese | ug/L | NA | 3520 = | NA | 930 = | NA | 170 = | NA |
| Manganese, Dissolved | ug/L | 3110 = | NA | 3280 = | NA | 0.63 =B | NA | 0.42 U |
| Zinc | ug/L | NA | 16.6 =B | NA | 29 = | NA | 7.3 =B | NA |
| Zinc, Dissolved | ug/L | 5.7 =B | NA | 15.4 =B | NA | 6.8 =B | NA | 4.9 =B |
| Alkalinity, Total | mg/L | NA | 220 = | NA | 120 = | NA | 150 = | NA |
| Chloride | mg/L | NA | 22 = | NA | 49 = | NA | 7.2 = | NA |
| Hardness (As CaCO3) | mg/L | NA | 4 U | NA | 150 = | NA | 170 = | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 0.15 U | NA | 0.15 U | NA | 0.15 U | NA |
| Sulfate | mg/L | NA | 25 = | NA | 9.6 = | NA | 12 = | NA |
| Total Organic Carbon | mg/L | NA | 71 = | NA | 8.3 = | NA | 1.3 = | NA |
| Pentachlorophenol | ug/L | NA | 30000 =B | NA | 0.035 J | NA | 0.078 = | NA |
| Naphthalene | ug/L | NA | 1400 = | NA | 5 U | NA | 5 U | NA |
| Benzene | ug/L | NA | 1 U | NA | 1 U | NA | 1 U | NA |
| Ethylbenzene | ug/L | NA | 12 = | NA | 5 U | NA | 5 U | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 68 = | NA | 2.5 U | NA | 2.5 U | NA |
| O-Xylene | ug/L | NA | 54 = | NA | 2.5 U | NA | 2.5 U | NA |
| Toluene | ug/L | NA | 9 = | NA | 5 U | NA | 5 U | NA |
| Xylenes (Total) | ug/L | NA | 120 = | NA | 5 U | NA | 5 U | NA |

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# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-26 | MW-26 | MW-26 | MW-26 | RW-01 | RW-02 | RW-02 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water, Dup | Water, Dup | Water | Water | Water |
| **Sample Collection Date:** | | 08/05/2002 | 08/05/2002 | 08/05/2002 | 08/05/2002 | 08/06/2002 | 08/06/2002 | 08/06/2002 |
| **Field Sample Identification:** | | 02CB18-01 | 02CB18-02 | 02CB18-53 | 02CB18-54 | 02CB18-55 | 02CB18-57 | 02CB18-99 |
| **Laboratory Sample Identification:** | | 02081571-3 | 02081571-4 | 02081571-1 | 02081571-2 | 02081721-5 | 02081721-2 | 02081721-3 |
| **Parameter** | **Units** | | | | | | | |
| Sulfide | mg/L | 2 U | NA | 2 U | NA | NA | NA | NA |
| Methane | ug/ml | 0.01 U | NA | 0.01 U | NA | NA | NA | NA |
| Arsenic | ug/L | 3 = | NA | 2.7 = | NA | NA | NA | NA |
| Arsenic, Dissolved | ug/L | NA | 1.4 U | NA | 3.2 = | NA | NA | NA |
| Copper | ug/L | 2.5 =B | NA | 3.9 =B | NA | NA | NA | NA |
| Copper, Dissolved | ug/L | NA | 0.3 U | NA | 0.3 U | NA | NA | NA |
| Iron | ug/L | 385 = | NA | 728 = | NA | NA | NA | NA |
| Iron, Dissolved | ug/L | NA | 11.2 U | NA | 11.2 U | NA | NA | NA |
| Manganese | ug/L | 17.2 = | NA | 26 = | NA | NA | NA | NA |
| Manganese, Dissolved | ug/L | NA | 0.56 =B | NA | 0.42 U | NA | NA | NA |
| Zinc | ug/L | 16.3 =B | NA | 18.7 =B | NA | NA | NA | NA |
| Zinc, Dissolved | ug/L | NA | 13.7 =B | NA | 7.4 =B | NA | NA | NA |
| Alkalinity, Total | mg/L | 270 = | NA | 280 = | NA | NA | NA | NA |
| Chloride | mg/L | 18 = | NA | 19 = | NA | NA | NA | NA |
| Hardness (As CaCO3) | mg/L | 310 = | NA | 310 = | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.15 U | NA | 0.15 U | NA | NA | NA | NA |
| Sulfate | mg/L | 14 = | NA | 11 = | NA | NA | NA | NA |
| Total Organic Carbon | mg/L | 4.5 = | NA | 24 = | NA | NA | NA | NA |
| Pentachlorophenol | ug/L | 0.03 J | NA | 0.035 J | NA | 0.04 = | 0.04 U | 0.04 U |
| Naphthalene | ug/L | 5 U | NA | 5 U | NA | 5 U | 5 U | 5 U |
| Benzene | ug/L | 1 U | NA | 1 U | NA | 1 U | 1 U | 1 U |
| Ethylbenzene | ug/L | 5 U | NA | 5 U | NA | 5 U | 5 U | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2.5 U | NA | 2.5 U | NA | NA | NA | NA |
| O-Xylene | ug/L | 2.5 U | NA | 2.5 U | NA | NA | NA | NA |
| Toluene | ug/L | 5 U | NA | 5 U | NA | 5 U | 5 U | 5 U |
| Xylenes (Total) | ug/L | 5 U | NA | 5 U | NA | 5 U | 5 U | 5 U |

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# Penta Wood Products
# August 2002 Annual GW Sampling
# Analytical Results

| | | | |
|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA |
| **Field Sample Location:** | | RW-03 | RW-04 |
| **Sample Interval:** | | N/A | N/A |
| **Matrix:** | | Water | Water |
| **Sample Collection Date:** | | 08/06/2002 | 08/06/2002 |
| **Field Sample Identification:** | | 02CB18-59 | 02CB18-61 |
| **Laboratory Sample Identification:** | | 02081721-6 | 02081721-1 |
| **Parameter** | **Units** | | |
| Sulfide | mg/L | NA | NA |
| Methane | ug/ml | NA | NA |
| Arsenic | ug/L | NA | NA |
| Arsenic, Dissolved | ug/L | NA | NA |
| Copper | ug/L | NA | NA |
| Copper, Dissolved | ug/L | NA | NA |
| Iron | ug/L | NA | NA |
| Iron, Dissolved | ug/L | NA | NA |
| Manganese | ug/L | NA | NA |
| Manganese, Dissolved | ug/L | NA | NA |
| Zinc | ug/L | NA | NA |
| Zinc, Dissolved | ug/L | NA | NA |
| Alkalinity, Total | mg/L | NA | NA |
| Chloride | mg/L | NA | NA |
| Hardness (As CaCO3) | mg/L | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA |
| Sulfate | mg/L | NA | NA |
| Total Organic Carbon | mg/L | NA | NA |
| Pentachlorophenol | ug/L | 0.04 U | 0.04 U |
| Naphthalene | ug/L | 5 U | 5 U |
| Benzene | ug/L | 1 U | 1 U |
| Ethylbenzene | ug/L | 5 U | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | NA |
| O-Xylene | ug/L | NA | NA |
| Toluene | ug/L | 5 U | 5 U |
| Xylenes (Total) | ug/L | 5 U | 5 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Historical Groundwater Sampling Analytical Results

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-01 | MW-01 | MW-01 | MW-01 | MW-01 | MW-02 | MW-02 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water, Dup | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 10/09/1997 | 10/09/1997 | 04/05/2000 | 04/24/2001 | 04/24/2001 | 10/09/1997 | 04/05/2000 |
| **Field Sample Identification:** | | 98ZR01-05 | 98ZR01-26 | 00CB09-01 | 01CB07-64 | 01CB07-65 | 98ZR01-06 | 00CB09-02 |
| **Laboratory Sample Identification:** | | 26300*12 | 26300*14 | 200403802 | 210420901 | 210420902 | 26300*4 | 200403810 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 2 UJ | 2.3 = | 2.4 = | 2.4 = | NA | 2 U | 2.1 U |
| Arsenic, Dissolved | ug/L | 2 UJ | 2 UJ | 2.6 = | NA | 1 U | 2 UJ | 2.1 U |
| Copper | ug/L | 61.6 = | 70.9 = | 23.9 = | 33 = | NA | 11.4 J | 64.2 = |
| Copper, Dissolved | ug/L | 2 UJ | 3.5 J | NA | NA | 25 U | 10.2 J | NA |
| Iron | ug/L | NA | NA | 5670 = | 9830 = | NA | NA | 21700 = |
| Iron, Dissolved | ug/L | 20 U | 20 U | 50 U | NA | 25 U | 20 U | 50 U |
| Manganese | ug/L | 1070 = | 1180 = | NA | 642 = | NA | 50.6 = | NA |
| Manganese, Dissolved | ug/L | NA | NA | 2 U | NA | 15 U | NA | 3.4 = |
| Zinc | ug/L | 32.8 J | 36 J | 10.6 = | 16 J | NA | 10.7 J | 33.7 = |
| Zinc, Dissolved | ug/L | 3 J | 3.8 J | NA | NA | 25 U | 10 J | NA |
| Alkalinity, Total | mg/L | 190 = | 190 = | 208 = | 140 = | NA | 300 = | 50 = |
| Chloride | mg/L | 18 = | 16 = | 8.72 = | 24 = | NA | 3.5 = | 1.01 = |
| Hardness (As CaCO3) | mg/L | NA | NA | 226 = | 218 = | NA | NA | 89.4 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | 0.14 = | 0.1 U | NA | NA | NA | 0.1 U | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | 0.1 U | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 6.5 = | 4.5 J | 1.66 = | 6.5 = | NA | 1.1 J | 0.1 U |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | 1 U | 1 U | NA | NA | 1 U |
| Sulfate | mg/L | 6.3 J | 5.8 = | 2.54 = | 13 = | NA | 17 = | 58.3 = |
| Total Organic Carbon | mg/L | 20 J | 43.5 J | 3.36 = | 3.89 = | NA | 2.6 J | 1.97 = |
| Pentachlorophenol | ug/Kg | 2 = | 1 = | 0.5 U | 0.1 U | NA | 1 U | 0.5 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | 11 U | 5.6 U | NA | NA | 10 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | 0.1 U | 0.15 U | 0.1 U | NA | 0.1 U | 0.15 U |
| Ethylbenzene | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 1 U | 1 U | 1 U | 2 U | NA | 1 U | 1 U |
| O-Xylene | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 1 U | 1 U |
| Toluene | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 1 U | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 1 U | 1 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-02 | MW-03 | MW-03 | MW-03 | MW-03 | MW-04 | MW-04 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 06/18/2001 | 10/08/1997 | 04/04/2000 | 04/25/2001 | 04/25/2001 | 10/09/1997 | 04/04/2000 |
| **Field Sample Identification:** | | 01CB08-66 | 98ZR01-07 | 00CB09-03 | 01CB07-83 | 01CB07-84 | 98ZR01-30 | 00CB09-04 |
| **Laboratory Sample Identification:** | | 210611201 | 26300*1 | 200402501 | 210422706 | 210422707 | 26300*20 | 200402511 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 6.7 = | NA | 2.1 U | 1 U | NA | 2 U | 2.1 U |
| Arsenic, Dissolved | ug/L | 0.37 J | 2 UJ | 5 U | NA | 1 U | 2 UJ | 5 U |
| Copper | ug/L | 109 = | NA | 5 U | 25 U | NA | 2.4 J | 5 U |
| Copper, Dissolved | ug/L | 25 U | 2 UJ | NA | NA | 25 U | 2 UJ | NA |
| Iron | ug/L | 39900 = | NA | 719 = | 147 = | NA | NA | 1040 = |
| Iron, Dissolved | ug/L | 24 J | 257 = | 498 J | NA | 142 = | 35.9 J | 50 U |
| Manganese | ug/L | 1230 = | NA | NA | 7.3 J | NA | 55.9 = | NA |
| Manganese, Dissolved | ug/L | 8.3 = | 10.9 = | 10.3 = | NA | 7.9 J | NA | 47 = |
| Zinc | ug/L | 64 = | NA | 10 U | 25 U | NA | 4.5 J | 10 U |
| Zinc, Dissolved | ug/L | 25 U | 2 UJ | NA | NA | 25 U | 2 UJ | NA |
| Alkalinity, Total | mg/L | 36 = | 370 = | 468 = | 442 = | NA | 94 = | 120 = |
| Chloride | mg/L | 5.73 = | 42 = | 64 = | 47 = | NA | 7.3 = | 9.59 = |
| Hardness (As CaCO3) | mg/L | 66 = | NA | 548 = | 544 = | NA | NA | 119 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | 0.28 = | NA | NA | NA | 0.42 = | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 38 = | 4.4 J | 2.84 = | 4.42 = | NA | 0.1 UJ | 0.1 U |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | NA | 1 U | 1 U | NA | NA | 1 U |
| Sulfate | mg/L | 105 = | 16 = | 12.5 = | 11 = | NA | 6.3 = | 10.8 = |
| Total Organic Carbon | mg/L | 5.57 = | 1.2 J | 2.18 = | 1 U | NA | 12.3 J | 2.4 = |
| Pentachlorophenol | ug/Kg | 0.1 UJ | 1 U | 0.6 U | 0.11 U | NA | 1 U | 0.5 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5 U | NA | 12 U | 6.1 R | NA | NA | 10 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | 0.1 U | 0.1 U | 0.1 U | NA | 2 J | 0.1 U |
| Ethylbenzene | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 3 J | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2 U | 1 U | 1 U | 2 U | NA | 2 J | 1 U |
| O-Xylene | ug/L | 1 U | 1 U | 1 U | 1 U | NA | 1 J | 1 U |
| Toluene | ug/L | 1 U | 1 U | 1 U | 0.46 J | NA | 1 J | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | 1 U | 1 U | NA | NA | 3 J | 1 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-05 | MW-05 | MW-05 | MW-05 | MW-05 | MW-06S | MW-06S |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water, Dup | Water | Water | Water | Water | WQ |
| **Sample Collection Date:** | | 10/10/1997 | 10/10/1997 | 04/07/2000 | 04/26/2001 | 04/26/2001 | 10/09/1997 | 04/07/2000 |
| **Field Sample Identification:** | | 98ZR01-09 | 98ZR01-10 | 00CB09-05 | 01CB08-05 | 01CB08-06 | 98ZR01-11 | 00CB09-06 |
| **Laboratory Sample Identification:** | | 26300*9 | 26300*10 | 200405120 | 210423416 | 210423417 | 26300*5 | 200405113 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 3.8 = | 4.6 = | 4.9 = | 5.6 = | NA | 5.1 = | NA |
| Arsenic, Dissolved | ug/L | 3.2 J | 4.3 J | 5.4 = | NA | 3.9 = | 2 UJ | NA |
| Copper | ug/L | 48.5 J | 4835 J | 142.8 = | 74 = | NA | 473 = | NA |
| Copper, Dissolved | ug/L | 24 J | 26.2 J | NA | NA | 25 U | 2 UJ | NA |
| Iron | ug/L | NA | NA | 17500 = | 20400 = | NA | NA | NA |
| Iron, Dissolved | ug/L | 4860 = | 5070 = | 3370 = | NA | 7630 = | 20 U | NA |
| Manganese | ug/L | 12900 = | 15500 = | NA | 11200 = | NA | 4720 = | NA |
| Manganese, Dissolved | ug/L | NA | NA | 3350 = | NA | 11300 = | NA | NA |
| Zinc | ug/L | 3.7 J | 2.7 J | 10 U | 25 U | NA | 258 J | NA |
| Zinc, Dissolved | ug/L | 2 U | 2 UJ | NA | NA | 25 U | 2.2 J | NA |
| Alkalinity, Total | mg/L | 370 = | 370 = | 308 = | 352 = | NA | 62 = | NA |
| Chloride | mg/L | 50 = | 50 = | 49.2 = | 42 = | NA | 72 = | NA |
| Hardness (As CaCO3) | mg/L | NA | NA | 330 = | 349 = | NA | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | 0.1 U | 0.1 U | NA | NA | NA | 0.1 U | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.1 UJ | 0.1 UJ | 0.1 U | 0.13 U | NA | 4.5 J | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | 1 U | 1.52 = | NA | NA | NA |
| Sulfate | mg/L | 15 = | 16 = | 34.3 = | 28 = | NA | 0.9 = | NA |
| Total Organic Carbon | mg/L | 115 J | 160 J | 74.1 = | 43 = | NA | 1.6 J | NA |
| Pentachlorophenol | ug/Kg | 28000 = | 31000 = | 20600 = | 20600 = | NA | 1 U | NA |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | 76 U | 38 = | NA | NA | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | 0.1 U | 0.33 = | 0.22 = | NA | 0.1 U | 0.1 U |
| Ethylbenzene | ug/L | 3 = | 2 = | 3.6 = | 0.84 J | NA | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 12 = | 10 = | 8.3 = | 4.5 = | NA | 1 U | 1 U |
| O-Xylene | ug/L | 9 = | 8 = | 6.9 = | 3.6 = | NA | 1 U | 1 U |
| Toluene | ug/L | 5 = | 4 = | 3 = | 1.8 = | NA | 1 U | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 21 = | 18 = | 15 = | 8.1 = | NA | 1 U | 1 U |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| Field Site Identifier: | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
|---|---|---|---|---|---|---|---|---|
| Field Sample Location: | | MW-06S | MW-06S | MW-07 | MW-07 | MW-07 | MW-07 | MW-07 |
| Sample Interval: | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Matrix: | | Water | Water | Water | Water | Water, Dup | Water | Water |
| Sample Collection Date: | | 04/26/2001 | 04/26/2001 | 10/14/1997 | 04/04/2000 | 04/04/2000 | 04/25/2001 | 04/25/2001 |
| Field Sample Identification: | | 01CB08-11 | 01CB08-12 | 98ZR01-12 | 00CB09-07 | 00CB09-20 | 01CB07-87 | 01CB07-88 |
| Laboratory Sample Identification: | | 210423404 | 210423405 | 26308*20 | 200402505 | 200402507 | 210422708 | 210422709 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 15 = | NA | 2 U | 2.1 U | 2.1 U | 1 U | NA |
| Arsenic, Dissolved | ug/L | NA | 0.26 J | 2 U | 5 U | 5 U | NA | 1 U |
| Copper | ug/L | 202 = | NA | 2 UJ | 5 U | 5 U | 25 U | NA |
| Copper, Dissolved | ug/L | NA | 25 U | 6.2 J | NA | NA | NA | 25 U |
| Iron | ug/L | 82800 = | NA | NA | 505 = | 456 = | 352 = | NA |
| Iron, Dissolved | ug/L | NA | 25 U | 622 J | 359 J | 357 J | NA | 154 = |
| Manganese | ug/L | 1950 = | NA | 13.4 = | NA | NA | 5.4 J | NA |
| Manganese, Dissolved | ug/L | NA | 347 = | NA | 26.2 = | 26.5 = | NA | 6.6 J |
| Zinc | ug/L | 131 = | NA | 3.5 = | 47.5 = | 10 U | 25 U | NA |
| Zinc, Dissolved | ug/L | NA | 25 U | 11.4 = | NA | NA | NA | 25 U |
| Alkalinity, Total | mg/L | 148 = | NA | 350 = | 384 = | 330 = | 352 = | NA |
| Chloride | mg/L | 14 = | NA | 7.6 = | 4.82 = | 4.72 = | 8.36 = | NA |
| Hardness (As CaCO3) | mg/L | 285 = | NA | NA | 398 = | 393 = | 388 = | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | 0.1 U | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.87 = | NA | 4.9 J | 2.72 = | 2.67 = | 3.63 = | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | NA | NA | 1 U | 1 U | 1 U | NA |
| Sulfate | mg/L | 12 = | NA | 6 = | 6.06 = | 4.23 = | 6.54 J | NA |
| Total Organic Carbon | mg/L | 5.29 = | NA | 1.6 J | 2 = | 2.69 = | 2.8 = | NA |
| Pentachlorophenol | ug/Kg | 2.5 = | NA | 1 U | 0.5 U | 0.5 U | 0.1 U | NA |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5.4 U | NA | NA | 10 U | 10 U | 5.2 U | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | NA | 0.1 U | 0.1 U | 0.1 U | 0.1 U | NA |
| Ethylbenzene | ug/L | 1 U | NA | 1 U | 1 U | 1 U | 1 U | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2 U | NA | 1 U | 1 U | 1 U | 2 U | NA |
| O-Xylene | ug/L | 1 U | NA | 1 U | 1 U | 1 U | 1 U | NA |
| Toluene | ug/L | 1 U | NA | 1 U | 1 U | 1 U | 1 U | NA |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | NA | 1 U | 1 U | 1 U | NA | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-08 | MW-08 | MW-08 | MW-08 | MW-08 | MW-08 | MW-09 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water, Dup | Water, Dup | Water |
| **Sample Collection Date:** | | 10/14/1997 | 04/05/2000 | 04/25/2001 | 04/25/2001 | 04/25/2001 | 04/25/2001 | 10/08/1997 |
| **Field Sample Identification:** | | 98ZR01-13 | 00CB09-08 | 01CB07-93 | 01CB07-94 | 01CB07-95 | 01CB07-96 | 98ZR01-14 |
| **Laboratory Sample Identification:** | | 26308*19 | 200403807 | 210422715 | 210422716 | 210422717 | 210422718 | 26300*2 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 2 U | 2.1 U | 0.99 J | NA | 0.97 J | NA | 2 U |
| Arsenic, Dissolved | ug/L | 2 U | 2.1 U | NA | 0.75 J | NA | 0.57 J | NA |
| Copper | ug/L | 2 J | 5 U | 25 U | NA | 25 U | NA | 4.2 J |
| Copper, Dissolved | ug/L | 2 U | NA | NA | 25 U | NA | 25 U | NA |
| Iron | ug/L | NA | 1040 = | 829 = | NA | 711 = | NA | NA |
| Iron, Dissolved | ug/L | 148 J | 50 U | NA | 25 U | NA | 25 U | 20 U |
| Manganese | ug/L | 17.8 = | NA | 32 = | NA | 25 = | NA | 19.7 = |
| Manganese, Dissolved | ug/L | NA | 5.3 = | NA | 27 = | NA | 22 = | NA |
| Zinc | ug/L | 7.4 = | 473 = | 25 U | NA | 25 U | NA | 5.6 J |
| Zinc, Dissolved | ug/L | 4.6 = | NA | NA | 25 U | NA | 25 U | NA |
| Alkalinity, Total | mg/L | 170 = | 122 = | 154 = | NA | 160 = | NA | 60 = |
| Chloride | mg/L | 4.2 = | 6.26 = | 3.25 = | NA | 3.19 = | NA | 45 = |
| Hardness (As CaCO3) | mg/L | NA | 147 = | 181 = | NA | 182 = | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | 1.1 = | NA | NA | NA | NA | NA | 0.14 = |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 1.4 J | 3.55 = | 1.52 = | NA | 1.5 = | NA | 4.2 J |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | 1 U | 1 U | NA | 1 U | NA | NA |
| Sulfate | mg/L | 4.5 = | 6.5 = | 7.47 J | NA | 6.76 J | NA | 3.4 = |
| Total Organic Carbon | mg/L | 2.3 J | 2.22 = | 1.46 = | NA | 1.35 = | NA | 6.5 J |
| Pentachlorophenol | ug/Kg | 1 U | 0.5 U | 0.2 = | NA | 0.1 U | NA | 1 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | 10 U | 5 U | NA | 5.2 U | NA | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | 0.15 U | 0.1 U | NA | 0.1 U | NA | 0.1 U |
| Ethylbenzene | ug/L | 1 U | 1 U | 1 U | NA | 1 U | NA | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 1 U | 1 U | 2 U | NA | 2 U | NA | 1 U |
| O-Xylene | ug/L | 1 U | 1 U | 1 U | NA | 1 U | NA | 1 U |
| Toluene | ug/L | 1 U | 1 U | 1 U | NA | 1 U | NA | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | 1 U | 1 U | NA | 1 U | NA | 1 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-09 | MW-09 | MW-09 | MW-10 | MW-10 | MW-10 | MW-10 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 04/05/2000 | 04/23/2001 | 04/24/2001 | 10/15/1997 | 04/06/2000 | 04/26/2001 | 04/26/2001 |
| **Field Sample Identification:** | | 00CB09-09 | 01CB07-46 | 01CB07-47 | 98ZR01-15 | 00CB09-10 | 01CB07-97 | 01CB07-98 |
| **Laboratory Sample Identification:** | | 200403803 | 210419501 | 210419504 | 26308*23 | 200405118 | 210423401 | 210423402 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 2.1 U | 0.38 J | NA | 2 U | 2.1 U | 3.1 = | NA |
| Arsenic, Dissolved | ug/L | 3.9 = | NA | 0.28 J | 1.4 J | 5 = | NA | 2.4 = |
| Copper | ug/L | 6.8 = | 25 U | NA | 9.1 J | 12 = | 98 = | NA |
| Copper, Dissolved | ug/L | NA | NA | 25 U | 2.8 J | NA | NA | 5.9 J |
| Iron | ug/L | 757 = | 470 = | NA | NA | 3530 = | 25200 = | NA |
| Iron, Dissolved | ug/L | 50 U | NA | 25 U | 2190 J | 115.9 J | NA | 5650 = |
| Manganese | ug/L | NA | 46 = | NA | 2510 = | NA | 2560 = | NA |
| Manganese, Dissolved | ug/L | 21.7 = | NA | 34 = | NA | 1590 = | NA | 2380 = |
| Zinc | ug/L | 10 U | 25 U | NA | 4.4 = | 10 U | 44 = | NA |
| Zinc, Dissolved | ug/L | NA | NA | 25 U | 9.2 = | NA | NA | 25 U |
| Alkalinity, Total | mg/L | 58 = | 60 = | NA | 340 = | 440 = | 472 = | NA |
| Chloride | mg/L | 3.15 = | 3.22 = | NA | 35 = | 55.9 = | 48 = | NA |
| Hardness (As CaCO3) | mg/L | 55.4 = | 59 = | NA | NA | 447 = | 505 = | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | NA | 0.1 U | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 1.97 = | 2.46 = | NA | 4.9 J | 1.72 = | 0.18 = | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | 1 U | NA | NA | 1 U | 1.25 = | NA |
| Sulfate | mg/L | 8.46 = | 27 = | NA | 13 = | 13.8 = | 22 = | NA |
| Total Organic Carbon | mg/L | 5.46 = | 9.94 = | NA | 20 J | 31.8 = | 26 = | NA |
| Pentachlorophenol | ug/Kg | 0.6 = | 0.12 = | NA | 8200 = | 9530 J | 22800 = | NA |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 10 U | 5.3 U | NA | NA | 60 = | 5.2 U | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.15 U | 0.1 U | NA | 0.2 J | 0.35 = | 0.4 = | NA |
| Ethylbenzene | ug/L | 1 U | 1 U | NA | 2 = | 4.4 = | 3.3 = | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | 1 U | 2 U | NA | 10 = | 20 = | 16 = | NA |
| O-Xylene | ug/L | 1 U | 1 U | NA | 7 = | 14 = | 11 = | NA |
| Toluene | ug/L | 1 U | 1 U | NA | 3 = | 6.4 = | 5.3 = | NA |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | 1 U | NA | 17 = | 34 = | 27 = | NA |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-10S | MW-10S | MW-10S | MW-10S | MW-10S | MW-11 | MW-11 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 10/15/1997 | 04/07/2000 | 12/05/2000 | 04/25/2001 | 04/25/2001 | 10/15/1997 | 04/04/2000 |
| **Field Sample Identification:** | | 98ZR01-16 | 00CB09-18 | 01CB01-44 | 01CB07-85 | 01CB07-86 | 98ZR01-17 | 00CB09-11 |
| **Laboratory Sample Identification:** | | 26308*27 | 200405109 | 201202302 | 210422711 | 210422712 | 26308*14 | 200402509 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 2 U | 5.3 = | 9.36 = | 18 = | NA | 2 U | 2.1 U |
| Arsenic, Dissolved | ug/L | 2 U | 2.1 U | 0.74 J | NA | 2.3 = | 2 U | 5 U |
| Copper | ug/L | 28.5 J | 199.2 = | 160 = | 409 = | NA | 4.2 J | 5.6 = |
| Copper, Dissolved | ug/L | 10.9 J | NA | 13 J | NA | 46 = | 2 U | NA |
| Iron | ug/L | NA | 32800 = | 11000 = | 131000 = | NA | NA | 351 = |
| Iron, Dissolved | ug/L | 45.4 J | 50 U | 610 J | NA | 11300 = | 10 UJ | 50 U |
| Manganese | ug/L | 10700 = | NA | 7100 = | 7990 = | NA | 2 U | NA |
| Manganese, Dissolved | ug/L | NA | 10100 = | 6900 = | NA | 6030 = | NA | 2 U |
| Zinc | ug/L | 11.6 = | 73 = | 35 = | 216 = | NA | 10.3 = | 16.4 = |
| Zinc, Dissolved | ug/L | 8.4 = | NA | 25 U | NA | 45 = | 5.3 = | NA |
| Alkalinity, Total | mg/L | 260 = | 218 = | 31 = | 142 = | NA | 190 = | 220 = |
| Chloride | mg/L | 38 = | 53 = | 15 = | 11 = | NA | 7.5 = | 6.98 = |
| Hardness (As CaCO3) | mg/L | NA | 359 = | 570 = | 425 = | NA | NA | 238 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | 0.1 U | NA | NA | NA | NA | 0.1 U | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.1 UJ | 0.1 U | 1 = | 1.49 = | NA | 5 J | 3.09 = |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | 1 U | 1 U | 1.15 = | NA | NA | 1 U |
| Sulfate | mg/L | 23 = | 138 = | 11 = | 8.64 J | NA | 12 = | 9.41 = |
| Total Organic Carbon | mg/L | 49.7 J | 249 = | 300 = | 503 = | NA | 1.3 J | 10.1 = |
| Pentachlorophenol | ug/Kg | 30000 = | 56100 J | 3810 B | 49000 = | NA | 1 U | 0.6 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | 512 = | 152 = | 306 = | NA | NA | 11 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.4 J | 0.1 U | 0.1 U | 10 U | NA | 0.3 J | 0.1 U |
| Ethylbenzene | ug/L | 0.9 J | 6.5 = | 5.9 = | 3.5 R | NA | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 4 = | 36 = | NA | 24 R | NA | 0.4 J | 1 U |
| O-Xylene | ug/L | 4 = | 28 = | NA | 21 R | NA | 0.2 J | 1 U |
| Toluene | ug/L | 1 = | 4.2 = | 2.9 = | NA | NA | 0.2 J | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 8 = | 64 = | 70 = | NA | NA | 0.5 J | 1 U |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-11 | MW-11 | MW-11 | MW-11 | MW-12 | MW-12 | MW-12 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water, Dup | Water, Dup | Water | Water | Water | Water | Water, Dup |
| **Sample Collection Date:** | | 04/24/2001 | 04/24/2001 | 04/24/2001 | 04/24/2001 | 10/15/1997 | 04/06/2000 | 04/06/2000 |
| **Field Sample Identification:** | | 01CB07-74 | 01CB07-75 | 01CB07-76 | 01CB07-77 | 98ZR01-18 | 00CB09-12 | 00CB09-21 |
| **Laboratory Sample Identification:** | | 210420914 | 210420915 | 210420916 | 210420917 | 26308*28 | 200405103 | 200405116 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 1.4 = | NA | 1.4 = | NA | 2 U | 2.1 U | 2.1 U |
| Arsenic, Dissolved | ug/L | NA | 1.2 = | NA | 1.3 = | 2 U | 5.8 = | 2.7 = |
| Copper | ug/L | 25 U | NA | 25 U | NA | 6.1 J | 9.4 = | 7.3 = |
| Copper, Dissolved | ug/L | NA | 25 U | NA | 25 U | 5 J | NA | NA |
| Iron | ug/L | 58 = | NA | 151 = | NA | NA | 222 = | 216 = |
| Iron, Dissolved | ug/L | NA | 25 U | NA | 25 U | 267 J | 112.8 J | 50 U |
| Manganese | ug/L | 15 U | NA | 15 U | NA | 1660 = | NA | NA |
| Manganese, Dissolved | ug/L | NA | 15 U | NA | 15 U | NA | 1590 = | 2 U |
| Zinc | ug/L | 25 J | NA | 126 = | NA | 16.3 = | 10 U | 10 U |
| Zinc, Dissolved | ug/L | NA | 20 J | NA | 25 U | 10.6 = | NA | NA |
| Alkalinity, Total | mg/L | 185 = | NA | 225 = | NA | 490 = | 500 = | 528 = |
| Chloride | mg/L | 6.16 = | NA | 6.25 = | NA | 50 = | 54.5 = | 74.2 = |
| Hardness (As CaCO3) | mg/L | 231 = | NA | 231 = | NA | NA | 559 = | 557 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | NA | NA | 0.1 U | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 3.59 = | NA | 3.74 = | NA | 0.1 UJ | 0.483 = | 0.515 = |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | NA | 1 U | NA | NA | 1 U | 1 U |
| Sulfate | mg/L | 4.57 J | NA | 3.48 J | NA | 15 = | 11.9 = | 11.7 = |
| Total Organic Carbon | mg/L | 7.9 = | NA | 4.67 = | NA | 21.7 J | 24.9 = | 27.2 = |
| Pentachlorophenol | ug/Kg | 0.1 U | NA | 0.11 U | NA | 13000 = | 10300 J | 10600 J |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5.3 U | NA | 5.4 U | NA | NA | 47 = | 45 = |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | NA | 0.1 U | NA | 1 J | 0.28 = | 0.3 = |
| Ethylbenzene | ug/L | 1 U | NA | 1 U | NA | 2 = | 2.8 = | 2.8 = |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2 U | NA | 2 U | NA | 8 = | 13 = | 13 = |
| O-Xylene | ug/L | 1 U | NA | 1 U | NA | 7 = | 9.6 = | 9.8 = |
| Toluene | ug/L | 1 U | NA | 1 U | NA | 3 = | 3.6 = | 3.7 = |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | NA | NA | NA | NA | 14 = | 22 = | 23 = |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-12 | MW-12 | MW-13 | MW-13 | MW-13 | MW-13 | MW-13 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 04/26/2001 | 04/26/2001 | 10/08/1997 | 04/05/2000 | 12/05/2000 | 01/10/2001 | 04/23/2001 |
| **Field Sample Identification:** | | 01CB08-03 | 01CB08-04 | 98ZR01-19 | 00CB09-13 | 01CB01-52 | 01CB01-64 | 01CB07-44 |
| **Laboratory Sample Identification:** | | 210423413 | 210423414 | 26300*3 | 200403805 | 201202701 | 210109501 | 210419508 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 1 J | NA | NA | 27 = | 1 U | NA | 14 = |
| Arsenic, Dissolved | ug/L | NA | 0.91 J | 2 UJ | 3.8 = | NA | NA | NA |
| Copper | ug/L | 25 U | NA | NA | 429 = | 92 = | NA | 140 = |
| Copper, Dissolved | ug/L | NA | 25 U | 3.32 J | NA | 25 U | NA | NA |
| Iron | ug/L | 151 = | NA | NA | 158000 = | 26000 = | NA | 56300 = |
| Iron, Dissolved | ug/L | NA | 131 = | 6.7 U | 50 U | 230 = | NA | NA |
| Manganese | ug/L | 1540 = | NA | NA | NA | 870 = | NA | 1300 = |
| Manganese, Dissolved | ug/L | NA | 1570 = | 27.3 = | 111.8 = | 66 = | NA | NA |
| Zinc | ug/L | 25 U | NA | NA | 257 = | 52 = | NA | 89 = |
| Zinc, Dissolved | ug/L | NA | 25 U | 2.7 J | NA | 25 U | NA | NA |
| Alkalinity, Total | mg/L | 564 = | NA | 70 = | 82000 = | 72 = | NA | 70 = |
| Chloride | mg/L | 48 = | NA | 2.7 = | 4.37 = | 4.2 = | NA | 3.52 = |
| Hardness (As CaCO3) | mg/L | 556 = | NA | NA | 247 = | 140 = | NA | 146 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | 0.1 U | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.43 = | NA | 1.4 J | 0.1 U | 0.45 = | NA | 1.77 = |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | 1 U | 1 U | NA | 8.48 = |
| Sulfate | mg/L | 16 = | NA | 1.4 = | 431 = | 8.2 J | NA | 35 = |
| Total Organic Carbon | mg/L | 23 = | NA | 17.9 J | 8.68 = | 7.9 = | NA | 18 = |
| Pentachlorophenol | ug/Kg | 1500 = | NA | 0.7 J | 0.8 = | 114 B | 0.312 = | 0.18 = |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 44 = | NA | NA | 10 U | 5.5 U | NA | 5.3 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.34 = | NA | 0.1 U | 0.15 U | 0.1 U | NA | 0.1 U |
| Ethylbenzene | ug/L | 2.5 = | NA | 1 U | 1 U | 1 U | NA | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 12 = | NA | 1 U | 1 U | NA | NA | 2 U |
| O-Xylene | ug/L | 9.7 = | NA | 1 U | 1 U | NA | NA | 1 U |
| Toluene | ug/L | 4.1 = | NA | 1 U | 1 U | 1 U | NA | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 22 = | NA | 1 U | 1 U | 1 U | NA | 1 U |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-13 | MW-13 | MW-14 | MW-14 | MW-14 | MW-15 | MW-15 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 04/23/2001 | 06/19/2001 | 10/09/1997 | 04/06/2000 | 06/19/2001 | 10/16/1997 | 04/04/2000 |
| **Field Sample Identification:** | | 01CB07-45 | 01CB08-69 | 98ZR01-20 | 00CB09-14 | 01CB08-70 | 98ZR01-21 | 00CB09-15 |
| **Laboratory Sample Identification:** | | 210419509 | 210613201 | 26300*6 | 200405101 | 210613202 | 26308*21 | 200402503 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 9.1 = | 2 U | 2.1 U | 2 = | 2 U | 2.1 U |
| Arsenic, Dissolved | ug/L | 0.24 J | 1.1 = | 2 UJ | 2.6 = | 1.4 = | 2 U | 5 U |
| Copper | ug/L | NA | 68 = | 2 J | 5 U | 5.4 J | 3.5 J | 7.1 = |
| Copper, Dissolved | ug/L | 25 U | 6.1 J | 2 UJ | NA | 25 UJ | 2 U | NA |
| Iron | ug/L | NA | 32800 = | NA | 50 U | 1070 = | NA | 652 = |
| Iron, Dissolved | ug/L | 25 U | 141 = | 20 U | 50 U | 25 U | 8.2 J | 50 U |
| Manganese | ug/L | NA | 848 = | 4 J | NA | 57 = | 62.2 = | NA |
| Manganese, Dissolved | ug/L | 110 = | 26 = | NA | 2 U | 4.4 J | NA | 2 U |
| Zinc | ug/L | NA | 45 = | 4 J | 10 U | 25 U | 13.9 = | 13.9 = |
| Zinc, Dissolved | ug/L | 25 U | 25 U | 2 UJ | NA | 25 U | 2 U | NA |
| Alkalinity, Total | mg/L | NA | 68 = | 120 = | 112 = | 104 = | 190 = | 340 = |
| Chloride | mg/L | NA | 5.73 = | 8 = | 15.7 = | 12 = | 6.5 = | 12.3 = |
| Hardness (As CaCO3) | mg/L | NA | 112 = | NA | 140 = | 124 = | NA | 263 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | 0.1 U | NA | NA | 0.1 U | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 2.87 = | 1.6 J | 2.16 = | 2.06 = | 4.1 J | 3.52 = |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | 1 U | 1 U | NA | 1 U |
| Sulfate | mg/L | NA | 11 = | 2.4 = | 4.12 = | 3.48 J | 6.3 = | 10 = |
| Total Organic Carbon | mg/L | NA | 13 = | 1 UJ | 1.5 U | 6.41 = | 1.2 J | 2.05 = |
| Pentachlorophenol | ug/Kg | NA | 0.11 U | 1 U | 0.5 U | 0.96 = | 1 U | 0.5 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | 5.3 UJ | NA | 11 U | 239 = | NA | 11 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | NA | 0.12 = | 0.1 UJ | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| Ethylbenzene | ug/L | NA | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 2 U | 1 UJ | 1 U | 2 U | 1 U | 1 U |
| O-Xylene | ug/L | NA | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U |
| Toluene | ug/L | NA | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | NA | 1 U | 1 UJ | 1 U | 1 U | 1 U | 1 U |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-15 | MW-15 | MW-15 | MW-15 | MW-16 | MW-16 | MW-16 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water, Dup | Water, Dup | Water | Water | Water |
| **Sample Collection Date:** | | 04/25/2001 | 04/25/2001 | 04/25/2001 | 04/25/2001 | 10/14/1997 | 04/06/2000 | 04/23/2001 |
| **Field Sample Identification:** | | 01CB07-70 | 01CB07-71 | 01CB07-72 | 01CB07-73 | 98ZR01-22 | 00CB09-16 | 01CB07-58 |
| **Laboratory Sample Identification:** | | 210422701 | 210422702 | 210422703 | 210422704 | 26308*18 | 200405114 | 210419510 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 0.5 J | NA | 0.56 J | NA | 17.1 = | 5.4 = | 6.5 = |
| Arsenic, Dissolved | ug/L | NA | 0.31 J | NA | 0.42 J | 2 U | 2.1 U | NA |
| Copper | ug/L | 25 U | NA | 25 U | NA | 438 J | 34.6 = | 62 = |
| Copper, Dissolved | ug/L | NA | 25 U | NA | 25 U | 2.7 J | NA | NA |
| Iron | ug/L | 58 = | NA | 174 = | NA | NA | 11800 = | 22300 = |
| Iron, Dissolved | ug/L | NA | 25 U | NA | 25 U | 15.3 J | 50 U | NA |
| Manganese | ug/L | 4.8 J | NA | 4.1 J | NA | 10300 = | NA | 1460 = |
| Manganese, Dissolved | ug/L | NA | 15 U | NA | 15 U | NA | 1690 = | NA |
| Zinc | ug/L | 50 = | NA | 25 U | NA | 210 = | 14.1 = | 136 = |
| Zinc, Dissolved | ug/L | NA | 15 J | NA | 16 J | 1.9 J | NA | NA |
| Alkalinity, Total | mg/L | 240 = | NA | 246 = | NA | 170 = | 48 = | 90 = |
| Chloride | mg/L | 15 = | NA | 16 = | NA | 6.1 = | 6.45 = | 3.57 = |
| Hardness (As CaCO3) | mg/L | 276 = | NA | 276 = | NA | NA | 97.2 = | 164 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | NA | NA | 0.1 U | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 3.97 = | NA | 3.92 = | NA | 2.6 J | 3.86 = | 8.69 = |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | NA | 1 U | NA | NA | 1 U | 8.56 = |
| Sulfate | mg/L | 2.61 J | NA | 4.05 J | NA | 8.1 = | 24.1 = | 29 = |
| Total Organic Carbon | mg/L | 5.24 = | NA | 3.7 = | NA | 3 J | 2.5 = | 4.4 = |
| Pentachlorophenol | ug/Kg | 0.11 U | NA | 0.11 U | NA | 1 U | 0.5 U | 0.11 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5.3 U | NA | 5.6 R | NA | NA | 10 U | 5.6 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 0.1 U | NA | 0.1 U | NA | 0.1 U | 0.1 U | 0.1 U |
| Ethylbenzene | ug/L | 1 U | NA | 1 U | NA | 1 U | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2 U | NA | 2 U | NA | 1 U | 1 U | 2 U |
| O-Xylene | ug/L | 1 U | NA | 1 U | NA | 1 U | 1 U | 1 U |
| Toluene | ug/L | 1 U | NA | 1 U | NA | 1 U | 1 U | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 1 U | NA | NA | NA | 1 U | 1 U | 1 U |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-16 | MW-17 | MW-17 | MW-17 | MW-17 | MW-17 | MW-18 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 04/23/2001 | 10/15/1997 | 10/28/1997 | 04/06/2000 | 04/26/2001 | 04/26/2001 | 10/10/1997 |
| **Field Sample Identification:** | | 01CB07-59 | 98ZR01-23 | 98ZR01-71 | 00CB09-17 | 01CB08-01 | 01CB08-02 | 98ZR01-25 |
| **Laboratory Sample Identification:** | | 210419511 | 26308*15 | 26341*8 | 200405107 | 210423411 | 210423412 | 26300*11 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 2 U | NA | 2.1 U | 0.6 J | NA | 8.9 = |
| Arsenic, Dissolved | ug/L | 1 U | 2 U | NA | 2.5 = | NA | 0.69 J | 8.2 J |
| Copper | ug/L | NA | 2.3 J | NA | 5 U | 25 U | NA | 62.5 = |
| Copper, Dissolved | ug/L | 25 U | 2 U | NA | NA | NA | 25 U | 43.5 J |
| Iron | ug/L | NA | NA | NA | 50 U | 33 = | NA | NA |
| Iron, Dissolved | ug/L | 26 = | 10 UJ | NA | 50 U | NA | 25 U | 32000 = |
| Manganese | ug/L | NA | 2 U | NA | NA | 15 U | NA | 10600 = |
| Manganese, Dissolved | ug/L | 9.4 J | NA | NA | 2 U | NA | 15 U | NA |
| Zinc | ug/L | NA | 2.5 = | NA | 10 U | 12 J | NA | 5.3 J |
| Zinc, Dissolved | ug/L | 23 J | 17.6 = | NA | NA | NA | 25 U | 2.6 J |
| Alkalinity, Total | mg/L | NA | 180 = | NA | 206 = | 202 = | NA | 260 = |
| Chloride | mg/L | NA | 4.8 = | NA | 4.89 = | 4.12 = | NA | 49 = |
| Hardness (As CaCO3) | mg/L | NA | NA | NA | 232 = | 228 = | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | 0.14 = | NA | NA | NA | NA | 0.14 = |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | 4.1 J | NA | 4.21 = | 4.98 = | NA | 0.1 UJ |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | 1 U | 1 U | NA | NA |
| Sulfate | mg/L | NA | 10 = | NA | 3 U | 6.82 J | NA | 11 = |
| Total Organic Carbon | mg/L | NA | 0.7 J | NA | 1.5 U | 1.57 = | NA | 154 J |
| Pentachlorophenol | ug/Kg | NA | 1 U | 5 = | 0.5 U | 0.72 = | NA | 27000 = |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | NA | 11 U | 54 = | NA | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | NA | 0.1 U | NA | 0.1 U | 0.1 U | NA | 0.1 U |
| Ethylbenzene | ug/L | NA | 1 U | NA | 1 U | 1 U | NA | 2 = |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 0.4 J | NA | 1 U | 2 U | NA | 11 = |
| O-Xylene | ug/L | NA | 0.2 J | NA | 1 U | 1 U | NA | 8 = |
| Toluene | ug/L | NA | 1 U | NA | 1 U | 1 U | NA | 16 = |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | NA | 0.6 J | NA | 1 U | 1 U | NA | 19 = |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-18 | MW-19 | MW-19 | MW-19 | MW-19 | MW-20 | MW-20 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 06/19/2001 | 10/16/1997 | 04/07/2000 | 04/26/2001 | 04/26/2001 | 10/15/1997 | 04/26/2001 |
| **Field Sample Identification:** | | 01CB08-71 | 98ZR01-44 | 00CB09-19 | 01CB08-15 | 01CB08-16 | 98ZR01-45 | 01CB08-08 |
| **Laboratory Sample Identification:** | | 210613203 | 26308*25 | 200405111 | 210423409 | 210423410 | 26308*26 | 210423407 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 4.9 = | 2 U | 3.4 = | 2.2 = | NA | NA | 8.2 = |
| Arsenic, Dissolved | ug/L | 5 = | 2 U | 3.7 = | NA | 1 U | NA | NA |
| Copper | ug/L | 43 = | 38 J | 96.8 = | 38 = | NA | NA | 196 = |
| Copper, Dissolved | ug/L | 21 J | 3.4 J | NA | NA | 25 U | NA | NA |
| Iron | ug/L | 15200 = | NA | 28300 = | 10000 = | NA | NA | 33200 = |
| Iron, Dissolved | ug/L | 13700 = | 10 UJ | 50 U | NA | 25 U | NA | NA |
| Manganese | ug/L | 6540 = | 2690 = | NA | 1840 = | NA | NA | 3120 = |
| Manganese, Dissolved | ug/L | 6650 = | NA | 2 U | NA | 1790 = | NA | NA |
| Zinc | ug/L | 25 U | 46 = | 48.4 = | 27 = | NA | NA | 126 = |
| Zinc, Dissolved | ug/L | 25 U | 2 U | NA | NA | 25 U | NA | NA |
| Alkalinity, Total | mg/L | 168 = | 180 = | 182 = | 236 = | NA | NA | 198 = |
| Chloride | mg/L | 19 = | 47 = | 37.4 = | 39 = | NA | NA | 24 = |
| Hardness (As CaCO3) | mg/L | 182 = | NA | 345 = | 323 = | NA | NA | 301 = |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | 0.28 = | NA | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 0.13 U | 3.8 J | 6.97 = | 3.37 = | NA | NA | 0.13 U |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1.7 = | NA | 1 U | 1 U | NA | NA | 1 U |
| Sulfate | mg/L | 33 J | 19 = | 90 = | 47 = | NA | NA | 67 = |
| Total Organic Carbon | mg/L | 6.63 = | 32.8 J | 54.2 = | 33 = | NA | NA | 478 = |
| Pentachlorophenol | ug/Kg | 27400 = | 19000 = | 11000 J | 25600 = | NA | 29000 = | 36600 = |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5 U | NA | 22 = | 325 = | NA | NA | 9970 = |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 1.1 = | 0.2 J | 0.1 U | 1 R | NA | 0.1 U | 10 U |
| Ethylbenzene | ug/L | 14 = | 1 U | 1.3 = | 10 R | NA | 1 U | 10 R |
| M,P-Xylene (Sum Of Isomers) | ug/L | 11 J | 1 U | 5.4 = | 4.3 R | NA | 1 U | 15 R |
| O-Xylene | ug/L | 9.3 J | 0.2 J | 6.7 = | 6.1 R | NA | 0.1 J | 35 J |
| Toluene | ug/L | 10 U | 1 U | 0.6 J | NA | NA | 1 U | NA |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 20 = | 0.2 J | 12 = | NA | NA | 0.1 J | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-20 | MW-21 | MW-21 | MW-21 | MW-21 | MW-22 | MW-22 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Water, Dup | Water, Dup | Water | Water |
| **Sample Collection Date:** | | 04/26/2001 | 02/09/1998 | 02/09/1998 | 02/09/1998 | 02/09/1998 | 02/09/1998 | 02/09/1998 |
| **Field Sample Identification:** | | 01CB08-09 | 98ZR01-88 | 98ZR01-89 | 98ZR01-98 | 98ZR01-99 | 98ZR01-90 | 98ZR01-91 |
| **Laboratory Sample Identification:** | | 210423408 | DA*26693*12 | DA*26693*13 | DA*26693*10 | DA*26693*11 | DA*26693*6 | DA*26693*7 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 3 J | NA | 3.1 J | NA | 4 = | NA |
| Arsenic, Dissolved | ug/L | 1.1 = | NA | 2 U | NA | 2 U | NA | 2 U |
| Copper | ug/L | NA | 70.1 = | NA | 83.9 = | NA | 255 = | NA |
| Copper, Dissolved | ug/L | 14 J | NA | 9.5 U | NA | 9.5 U | NA | 9.5 U |
| Iron | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron, Dissolved | ug/L | 841 = | NA | 5.5 U | NA | 7.3 J | NA | 5.5 U |
| Manganese | ug/L | NA | 1210 = | NA | 1380 = | NA | 3700 = | NA |
| Manganese, Dissolved | ug/L | 2250 = | NA | NA | NA | NA | NA | NA |
| Zinc | ug/L | NA | 113 = | NA | 98.9 = | NA | 121 = | NA |
| Zinc, Dissolved | ug/L | 23 J | NA | 32.6 = | NA | 33.8 = | NA | 12.6 = |
| Alkalinity, Total | mg/L | NA | 176 = | NA | 196 = | NA | 186 = | NA |
| Chloride | mg/L | NA | 70.6 = | NA | 67.3 = | NA | 56.3 = | NA |
| Hardness (As CaCO3) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | 0.083 U | NA | 3.08 J | NA | 0.84 J | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | 4.23 J | NA | 4.17 J | NA | 6.52 J | NA |
| Sulfide | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | mg/L | NA | 9.1 = | NA | 8.9 = | NA | 17.9 = | NA |
| Total Organic Carbon | mg/L | NA | 0.47 U | NA | 0.47 U | NA | 0.47 U | NA |
| Pentachlorophenol | ug/Kg | NA | 1 U | NA | 1 U | NA | 1 U | NA |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | NA | 0.1 UJ | NA | 0.1 UJ | NA | 0.1 UJ | NA |
| Ethylbenzene | ug/L | NA | 1 UJ | NA | 1 UJ | NA | 1 UJ | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| O-Xylene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | ug/L | NA | 1 UJ | NA | 1 UJ | NA | 1 UJ | NA |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | NA | 1 UJ | NA | 1 UJ | NA | 1 UJ | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-23 | MW-23 | MW-24 | MW-24 | MW-24 | MW-24 | MW-24 |
| **Sample Interval:** | | N/A | N/A | 17' - 19' | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Soil | Water | Water | Water | Water |
| **Sample Collection Date:** | | 02/26/1998 | 02/26/1998 | 01/27/1998 | 02/08/1998 | 02/08/1998 | 12/06/2000 | 04/24/2001 |
| **Field Sample Identification:** | | 98ZR01-92 | 98ZR01-93 | 98ZR01-86 | 98ZR01-94 | 98ZR01-95 | 01CB01-55 | 01CB07-68 |
| **Laboratory Sample Identification:** | | DA*26782*1 | DA*26782*2 | DA*26613*6 | DA*26693*1 | DA*26693*2 | 201206501 | 210420905 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 2 U | NA | NA | 4.3 = | NA | 1.6 = | 2.4 = |
| Arsenic, Dissolved | ug/L | NA | 2 U | NA | NA | 2 U | 0.29 J | NA |
| Copper | ug/L | 17.6 J | NA | NA | 53 = | NA | 27 = | 30 = |
| Copper, Dissolved | ug/L | NA | 14.2 J | NA | NA | 9.5 U | 25 U | NA |
| Iron | ug/L | NA | NA | NA | NA | NA | 6500 = | 7310 = |
| Iron, Dissolved | ug/L | NA | 5.5 U | NA | NA | 5.5 U | 25 U | NA |
| Manganese | ug/L | 128 = | NA | NA | 1030 = | NA | 530 = | 508 = |
| Manganese, Dissolved | ug/L | NA | NA | NA | NA | NA | 15 U | NA |
| Zinc | ug/L | 43.6 = | NA | NA | 50.7 = | NA | 11 J | 23 J |
| Zinc, Dissolved | ug/L | NA | 6.6 = | NA | NA | 23 = | 25 U | NA |
| Alkalinity, Total | mg/L | 120 J | NA | NA | 253 = | NA | 180 = | 256 = |
| Chloride | mg/L | 8.7 J | NA | NA | 18.7 = | NA | 21 = | 36 = |
| Hardness (As CaCO3) | mg/L | NA | NA | NA | NA | NA | 310 = | 348 = |
| Moisture, Percent | percent | NA | NA | 9.9 = | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | 0.1 UJ | NA | NA | 0.083 U | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA | NA | NA | NA | 2.3 = | 3.64 = |
| Nitrogen, Nitrate-Nitrite | mg/L | 1.47 J | NA | NA | 3.93 J | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | NA | NA | 1 U | 1 U |
| Sulfate | mg/L | 7.6 J | NA | NA | 5.2 = | NA | 7.1 J | 12 = |
| Total Organic Carbon | mg/L | 0.47 UJ | NA | NA | 1.8 = | NA | 5.5 = | 3.36 = |
| Pentachlorophenol | ug/Kg | 1 UJ | NA | 190000 = | 4 = | NA | 123 B | 0.11 = |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | NA | NA | NA | 5.9 U | 5.3 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | 2 J | NA | NA | 3 J | NA | 0.1 U | 0.1 U |
| Ethylbenzene | ug/L | 1 UJ | NA | NA | 2 J | NA | 1 U | 1 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | NA | NA | NA | NA | NA | 2 U |
| O-Xylene | ug/L | NA | NA | NA | NA | NA | NA | 1 U |
| Toluene | ug/L | 77 J | NA | NA | 3 J | NA | 0.29 J | 1 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | 2 J | NA | NA | 5 J | NA | 1 U | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| Field Site Identifier: | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
|---|---|---|---|---|---|---|---|---|
| Field Sample Location: | | MW-24 | MW-25 | MW-25 | MW-26 | MW-26 | MW-26 | MW-26 |
| Sample Interval: | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Matrix: | | Water | Water | Water | Water | Water, Dup | Water | Water, Dup |
| Sample Collection Date: | | 04/24/2001 | 02/09/1998 | 02/09/1998 | 12/06/2000 | 12/06/2000 | 01/10/2001 | 01/10/2001 |
| Field Sample Identification: | | 01CB07-69 | 98ZR01-96 | 98ZR01-97 | 01CB01-53 | 01CB01-54 | 01CB01-60 | 01CB01-61 |
| Laboratory Sample Identification: | | 210420906 | DA*26693*8 | DA*26693*9 | 201205801 | 201205802 | 210107204 | 210107201 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | 6.6 = | NA | 2.8 = | 4 = | NA | NA |
| Arsenic, Dissolved | ug/L | 0.29 J | NA | 2 U | 1.1 = | 1.1 = | NA | NA |
| Copper | ug/L | NA | 462 = | NA | 27 = | 25 J | NA | NA |
| Copper, Dissolved | ug/L | 5.2 J | NA | 9.5 U | 21 J | 25 U | NA | NA |
| Iron | ug/L | NA | NA | NA | 16000 = | 16000 = | NA | NA |
| Iron, Dissolved | ug/L | 25 U | NA | 30.2 J | 25 U | 25 U | NA | NA |
| Manganese | ug/L | NA | 4480 = | NA | 300 = | 290 = | NA | NA |
| Manganese, Dissolved | ug/L | 2.4 J | NA | NA | 94 = | 89 = | NA | NA |
| Zinc | ug/L | NA | 321 = | NA | 35 = | 33 = | NA | NA |
| Zinc, Dissolved | ug/L | 11 J | NA | 16.4 = | 17 J | 25 U | NA | NA |
| Alkalinity, Total | mg/L | NA | 455 = | NA | 230 = | 270 = | NA | NA |
| Chloride | mg/L | NA | 15.6 = | NA | 29 = | 28 = | NA | NA |
| Hardness (As CaCO3) | mg/L | NA | NA | NA | 350 = | 330 = | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | 0.84 J | NA | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA | NA | 2.8 = | 2.8 = | NA | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | 3.96 J | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | 1 U | 1 U | NA | NA |
| Sulfate | mg/L | NA | 9.9 = | NA | 540 J | 770 J | NA | NA |
| Total Organic Carbon | mg/L | NA | 0.47 U | NA | 8 = | 6.1 = | NA | NA |
| Pentachlorophenol | ug/Kg | NA | 1 U | NA | 118 B | 115 B | 0.1 U | 0.16 = |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | NA | 5 U | 5 U | NA | NA |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Benzene | ug/L | NA | 0.1 UJ | NA | 0.1 U | 0.1 U | NA | NA |
| Ethylbenzene | ug/L | NA | 1 UJ | NA | 1 U | 1 U | NA | NA |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| O-Xylene | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Toluene | ug/L | NA | 1 UJ | NA | 1 U | 1 U | NA | NA |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Xylenes (Total) | ug/L | NA | 1 UJ | NA | 1 U | 1 U | NA | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | MW-26 | MW-26 | MW-26 | MW-26FIL | MW-26FIL | RW-01 | RW-01 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water | Water | Soil | Water | Water | Water |
| **Sample Collection Date:** | | 04/24/2001 | 04/24/2001 | 06/18/2001 | 01/10/2001 | 01/10/2001 | 10/09/1997 | 04/23/2001 |
| **Field Sample Identification:** | | 01CB07-66 | 01CB07-67 | 01CB08-67 | 01CB01-62S | 01CB01-62W | 98ZR01-01 | 01CB07-62 |
| **Laboratory Sample Identification:** | | 210420907 | 210420910 | 210611202 | 210107206 | 210107202 | 26300*15 | 210419612 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | 3 = | NA | 3.6 = | NA | NA | NA | NA |
| Arsenic, Dissolved | ug/L | NA | 0.24 J | 1.1 = | NA | NA | NA | NA |
| Copper | ug/L | 13 J | NA | 18 J | NA | NA | NA | NA |
| Copper, Dissolved | ug/L | NA | 25 U | 25 U | NA | NA | NA | NA |
| Iron | ug/L | 6980 = | NA | 9140 = | NA | NA | NA | NA |
| Iron, Dissolved | ug/L | NA | 36 = | 25 UJ | NA | NA | NA | NA |
| Manganese | ug/L | 132 = | NA | 232 = | NA | NA | NA | NA |
| Manganese, Dissolved | ug/L | NA | 15 U | 15 U | NA | NA | NA | NA |
| Zinc | ug/L | 24 J | NA | 28 = | NA | NA | NA | NA |
| Zinc, Dissolved | ug/L | NA | 19700 = | 25 U | NA | NA | NA | NA |
| Alkalinity, Total | mg/L | 240 = | NA | 230 = | NA | NA | NA | NA |
| Chloride | mg/L | 22 = | NA | 27 = | NA | NA | NA | NA |
| Hardness (As CaCO3) | mg/L | 294 = | NA | 326 = | NA | NA | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | 5 = | NA | 30 = | NA | NA | NA | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | 1 U | NA | 1 U | NA | NA | NA | NA |
| Sulfate | mg/L | 10 J | NA | 13 = | NA | NA | NA | NA |
| Total Organic Carbon | mg/L | 2.79 = | NA | 6.67 = | NA | NA | NA | NA |
| Pentachlorophenol | ug/Kg | 0.1 U | NA | 1 UJ | 12 = | 1.6 = | 1 U | 0.1 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | 5.4 U | NA | 5 U | NA | NA | NA | 5.3 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | 5 U |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | 5 U |
| Benzene | ug/L | 0.1 U | NA | 0.1 U | NA | NA | NA | 0.5 U |
| Ethylbenzene | ug/L | 1 U | NA | 1 U | NA | NA | NA | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | 2 U | NA | 2 U | NA | NA | NA | 5 U |
| O-Xylene | ug/L | 1 U | NA | 1 U | NA | NA | NA | 5 U |
| Toluene | ug/L | 1 U | NA | 1 U | NA | NA | NA | 5 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | 10 U |
| Xylenes (Total) | ug/L | 1 U | NA | 1 U | NA | NA | NA | NA |

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# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Field Site Identifier:** | | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA | PENTA |
| **Field Sample Location:** | | RW-02 | RW-02 | RW-02 | RW-02 | RW-03 | RW-04 | RW-04 |
| **Sample Interval:** | | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| **Matrix:** | | Water | Water, Dup | Water | Water | Water | Water | Water |
| **Sample Collection Date:** | | 10/09/1997 | 10/09/1997 | 10/24/1997 | 04/24/2001 | 10/09/1997 | 10/09/1997 | 04/23/2001 |
| **Field Sample Identification:** | | 98ZR01-02 | 98ZR01-24 | 98ZR01-67 | 01CB07-80 | 98ZR01-03 | 98ZR01-04 | 01CB07-61 |
| **Laboratory Sample Identification:** | | 26300*16 | 26300*17 | 26341*5 | 210420904 | 26300*18 | 26300*19 | 210419611 |
| **Parameter** | **Units** | | | | | | | |
| Arsenic | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Arsenic, Dissolved | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Copper, Dissolved | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Iron, Dissolved | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Manganese, Dissolved | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Zinc, Dissolved | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Alkalinity, Total | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Chloride | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Hardness (As CaCO3) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Moisture, Percent | percent | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfide | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Sulfate | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Total Organic Carbon | mg/L | NA | NA | NA | NA | NA | NA | NA |
| Pentachlorophenol | ug/Kg | 0.9 J | 2 = | 1 U | 0.1 U | 1 U | 1 U | 0.1 U |
| Pentachlorophenol | ug/L | NA | NA | NA | NA | NA | NA | NA |
| Naphthalene | ug/L | NA | NA | NA | 5.4 U | NA | NA | 5 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | 5 U |
| 1,3,5-Trimethylbenzene | ug/L | NA | NA | NA | NA | NA | NA | 5 U |
| Benzene | ug/L | NA | NA | NA | 0.1 U | NA | NA | 0.5 U |
| Ethylbenzene | ug/L | NA | NA | NA | 1 U | NA | NA | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | NA | NA | 2 U | NA | NA | 5 U |
| O-Xylene | ug/L | NA | NA | NA | 1 U | NA | NA | 5 U |
| Toluene | ug/L | NA | NA | NA | 1 U | NA | NA | 5 U |
| Trimethylbenzene (Total) | ug/L | NA | NA | NA | NA | NA | NA | 10 U |
| Xylenes (Total) | ug/L | NA | NA | NA | 1 U | NA | NA | NA |

*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

# Penta Wood Products
# Historical Groundwater Sampling Results
# Analytical Results

| | | | |
|---|---|---|---|
| | **Field Site Identifier:** | PENTA | PENTA |
| | **Field Sample Location:** | RW-05 | RW-05 |
| | **Sample Interval:** | N/A | N/A |
| | **Matrix:** | Water | Water |
| | **Sample Collection Date:** | 10/15/1997 | 04/23/2001 |
| | **Field Sample Identification:** | 98ZR01-65 | 01CB07-63 |
| | **Laboratory Sample Identification:** | 26308*24 | 210419613 |
| **Parameter** | **Units** | | |
| Arsenic | ug/L | NA | NA |
| Arsenic, Dissolved | ug/L | NA | NA |
| Copper | ug/L | NA | NA |
| Copper, Dissolved | ug/L | NA | NA |
| Iron | ug/L | NA | NA |
| Iron, Dissolved | ug/L | NA | NA |
| Manganese | ug/L | NA | NA |
| Manganese, Dissolved | ug/L | NA | NA |
| Zinc | ug/L | NA | NA |
| Zinc, Dissolved | ug/L | NA | NA |
| Alkalinity, Total | mg/L | NA | NA |
| Chloride | mg/L | NA | NA |
| Hardness (As CaCO3) | mg/L | NA | NA |
| Moisture, Percent | percent | NA | NA |
| Nitrogen, Ammonia (As N) | mg/L | NA | NA |
| Nitrogen, Nitrite | mg/L | NA | NA |
| Nitrogen, Nitrate (As N) | mg/L | NA | NA |
| Nitrogen, Nitrate-Nitrite | mg/L | NA | NA |
| Sulfide | mg/L | NA | NA |
| Sulfate | mg/L | NA | NA |
| Total Organic Carbon | mg/L | NA | NA |
| Pentachlorophenol | ug/Kg | 1 U | 0.1 U |
| Pentachlorophenol | ug/L | NA | NA |
| Naphthalene | ug/L | NA | 5 U |
| 1,2,4-Trimethylbenzene | ug/L | NA | 5 U |
| 1,3,5-Trimethylbenzene | ug/L | NA | 5 U |
| Benzene | ug/L | NA | 0.5 U |
| Ethylbenzene | ug/L | NA | 5 U |
| M,P-Xylene (Sum Of Isomers) | ug/L | NA | 5 U |
| O-Xylene | ug/L | NA | 5 U |
| Toluene | ug/L | NA | 5 U |
| Trimethylbenzene (Total) | ug/L | NA | 10 U |
| Xylenes (Total) | ug/L | NA | NA |

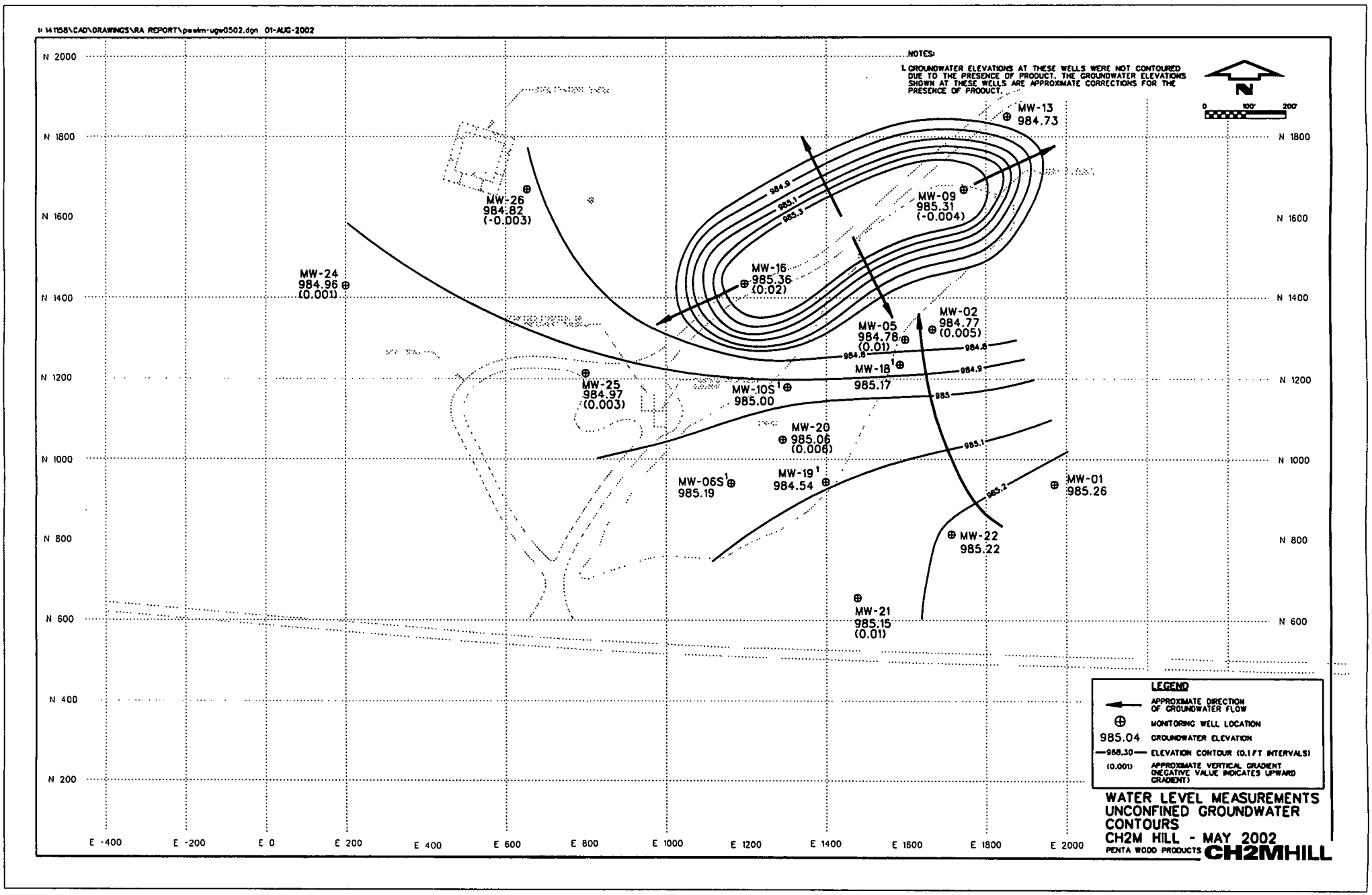
*QUALIFIER KEY: "U" - Analyte not found at the listed detection limit; "J" - Estimated Result; "B" - Analyte detected in Blank; "=" - Analyte found; "R" - Rejected; "NA" - Not Analyzed*

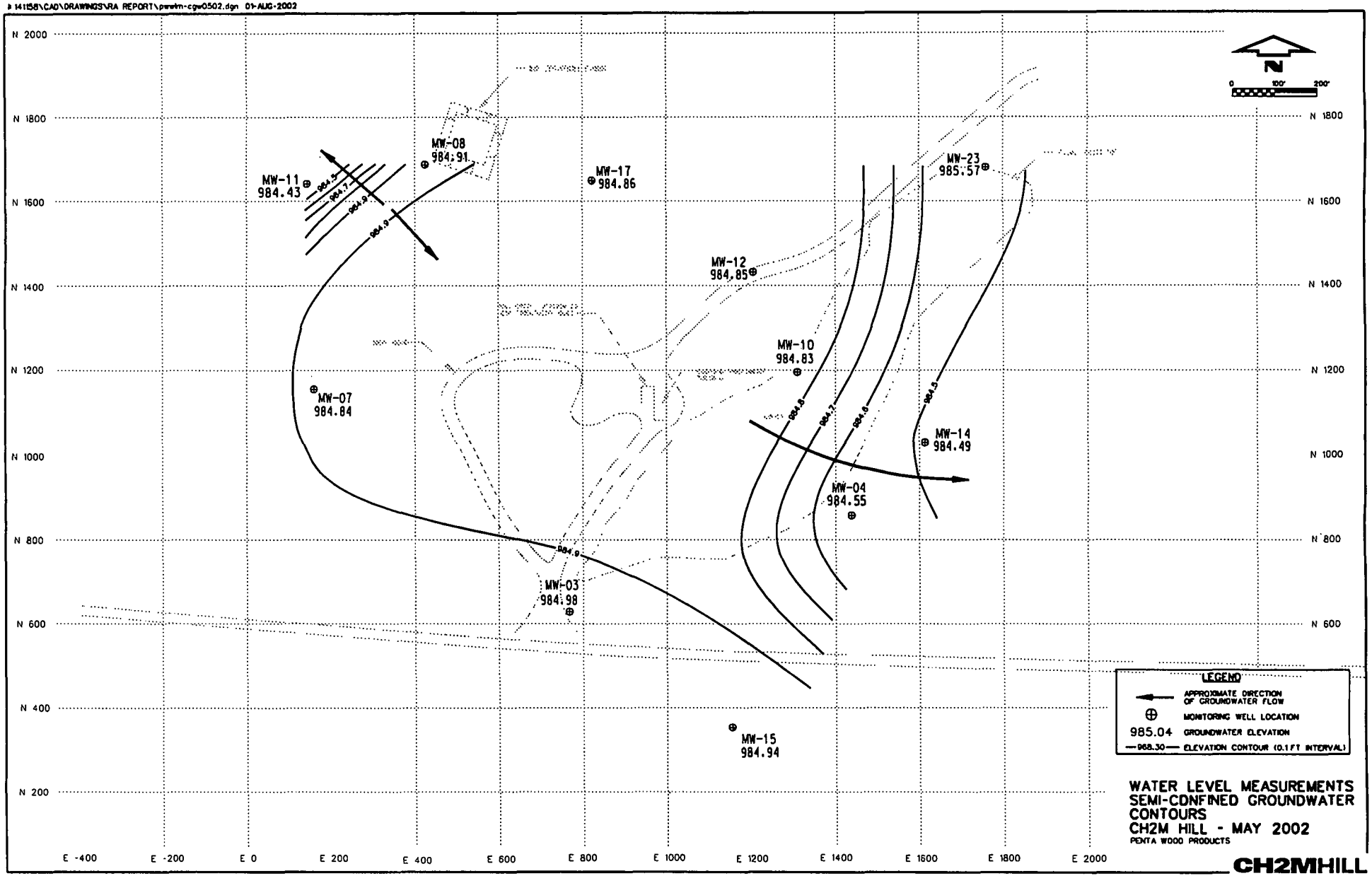
Attachment 2

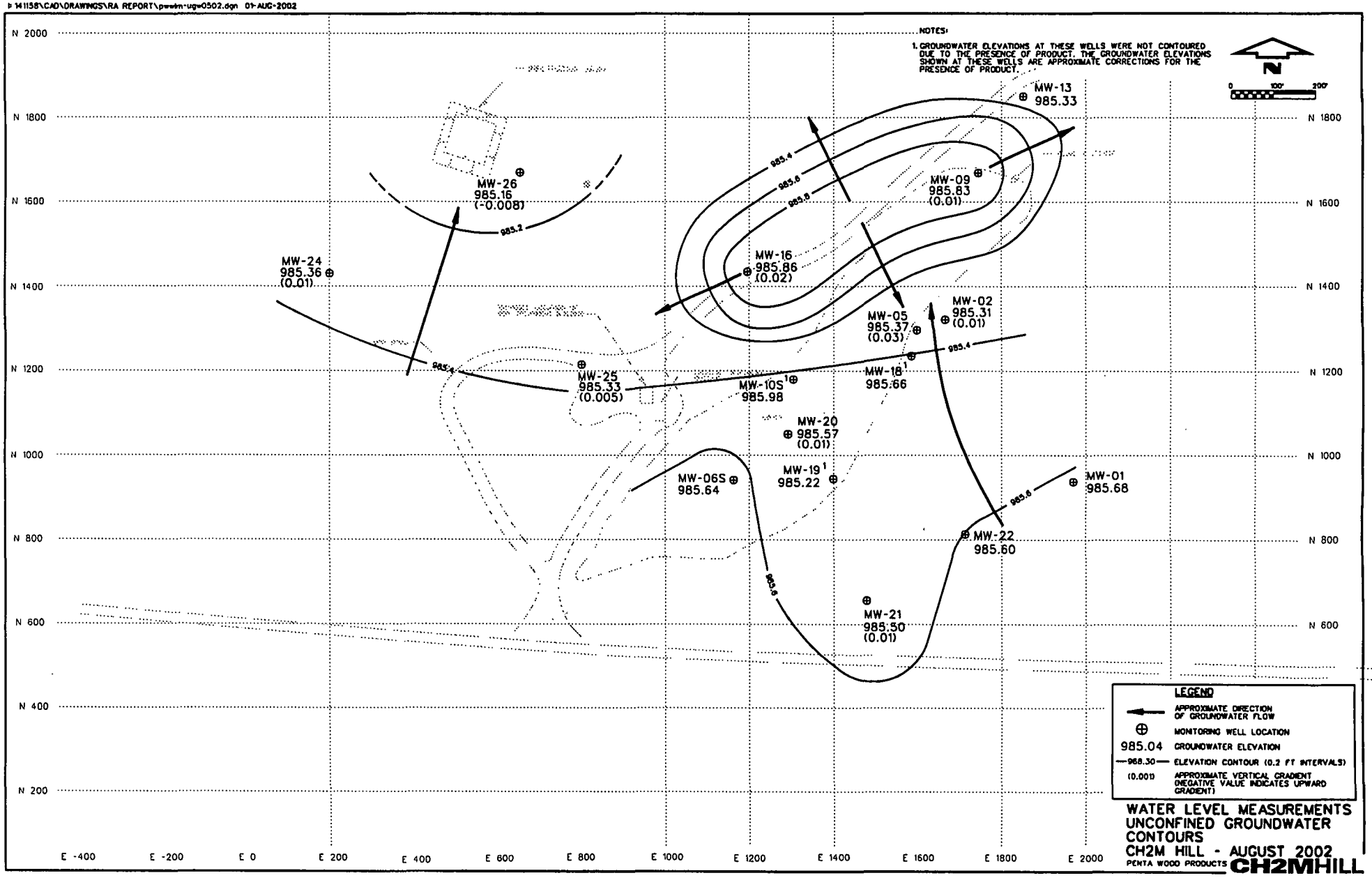
Groundwater Contour Maps

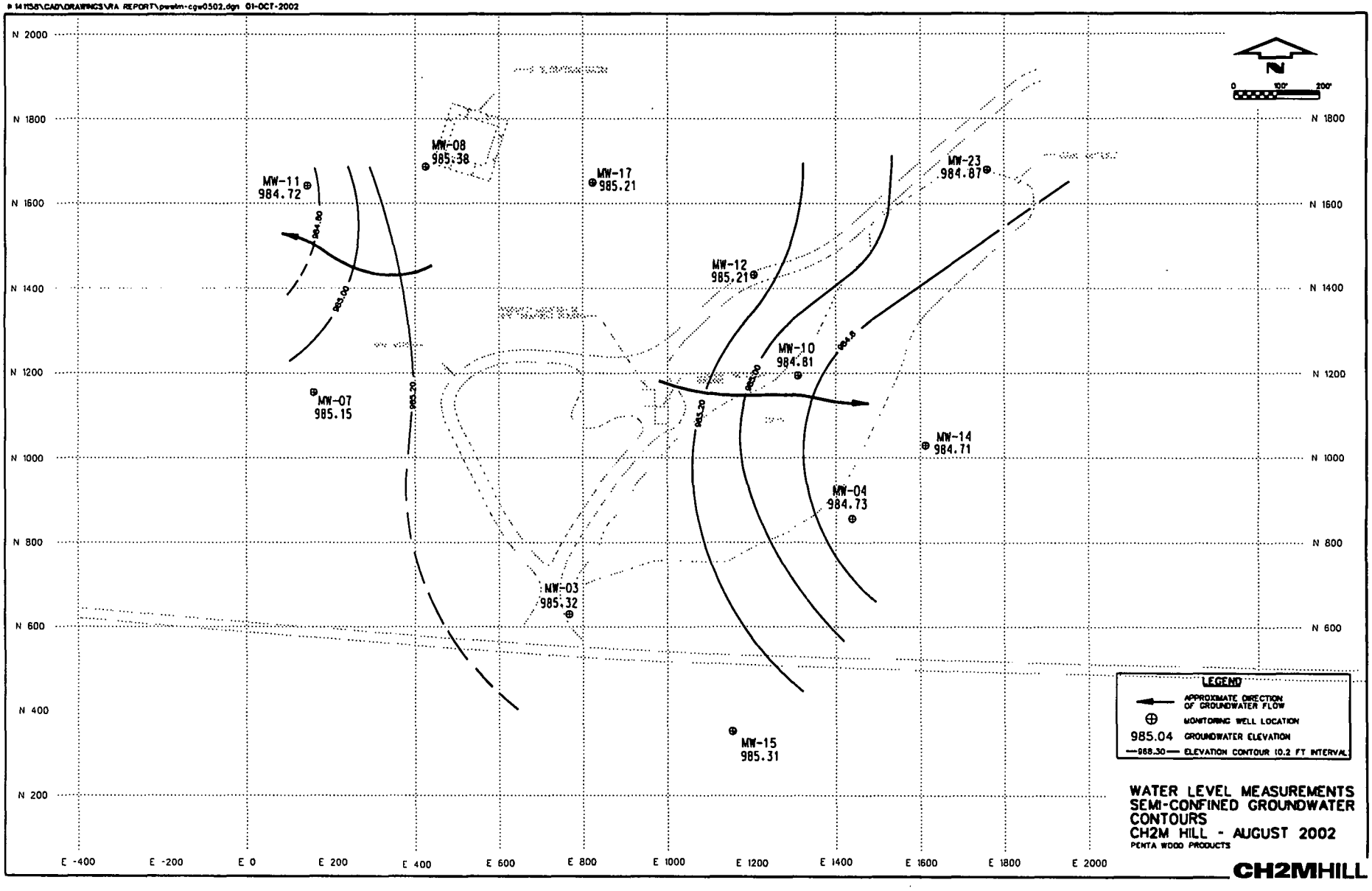
Groundwater Elevations & Observations

Oil Measurements


P:\141158\CAD\DRAWINGS\RA REPORT\pewlm-ugw0502.dgn 01-AUG-2002
NOTES:
1. GROUNDWATER ELEVATIONS AT THESE WELLS WERE NOT CONTOURED DUE TO THE PRESENCE OF PRODUCT. THE GROUNDWATER ELEVATIONS SHOWN AT THESE WELLS ARE APPROXIMATE CORRECTIONS FOR THE PRESENCE OF PRODUCT.
N
0 100' 200'
MW-13 984.73
MW-26 984.82 (-0.003)
MW-09 985.31 (-0.004)
MW-24 984.96 (0.001)
MW-16 985.36 (0.02)
MW-02 984.77 (0.005)
MW-05 984.78 (0.01)
MW-18 985.17
MW-25 984.97 (0.003)
MW-10S 985.00
MW-20 985.06 (0.006)
MW-06S 985.19
MW-19 984.54
MW-01 985.26
MW-22 985.22
MW-21 985.15 (0.01)
984.9
985.1
985.3
984.8
984.9
985
985.1
985.2
N 2000
N 1800
N 1600
N 1400
N 1200
N 1000
N 800
N 600
N 400
N 200
E -400
E -200
E 0
E 200
E 400
E 600
E 800
E 1000
E 1200
E 1400
E 1600
E 1800
E 2000
LEGEND
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
MONITORING WELL LOCATION
985.04 GROUNDWATER ELEVATION
—988.30— ELEVATION CONTOUR (0.1 FT INTERVALS)
(0.001) APPROXIMATE VERTICAL GRADIENT (NEGATIVE VALUE INDICATES UPWARD GRADIENT)
WATER LEVEL MEASUREMENTS
UNCONFINED GROUNDWATER CONTOURS
CH2M HILL - MAY 2002
PENTA WOOD PRODUCTS
CH2MHILL


141158\CAD\DRAWINGS\RA REPORT\pwwtn-cgw0502.dgn 01-AUG-2002
N 2000
N 1800
N 1600
N 1400
N 1200
N 1000
N 800
N 600
N 400
N 200
E -400
E -200
E 0
E 200
E 400
E 600
E 800
E 1000
E 1200
E 1400
E 1600
E 1800
E 2000
N
0
100'
200'
MW-11
984.43
MW-08
984.91
MW-17
984.86
MW-23
985.57
MW-12
984.85
MW-10
984.83
MW-07
984.84
MW-14
984.49
MW-04
984.55
MW-03
984.98
MW-15
984.94
984.5
984.7
984.9
984.9
984.8
984.7
984.6
984.5
984.9
LEGEND
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
MONITORING WELL LOCATION
985.04 GROUNDWATER ELEVATION
—968.30— ELEVATION CONTOUR (0.1 FT INTERVAL)
WATER LEVEL MEASUREMENTS
SEMI-CONFINED GROUNDWATER CONTOURS
CH2M HILL - MAY 2002
PENTA WOOD PRODUCTS
CH2MHILL


P:\411158\CAD\DRAWINGS\RA REPORT\pwwtn-ugw0502.dgn 01-AUG-2002
NOTES:
1. GROUNDWATER ELEVATIONS AT THESE WELLS WERE NOT CONTOURED DUE TO THE PRESENCE OF PRODUCT. THE GROUNDWATER ELEVATIONS SHOWN AT THESE WELLS ARE APPROXIMATE CORRECTIONS FOR THE PRESENCE OF PRODUCT.
N
0 100' 200'
MW-13 985.33
MW-26 985.16 (-0.008)
MW-09 985.83 (0.01)
MW-24 985.36 (0.01)
MW-16 985.86 (0.02)
MW-02 985.31 (0.01)
MW-05 985.37 (0.03)
MW-25 985.33 (0.005)
MW-10S[1] 985.98
MW-18[1] 985.66
MW-20 985.57 (0.01)
MW-06S 985.64
MW-19[1] 985.22
MW-01 985.68
MW-22 985.60
MW-21 985.50 (0.01)
985.2
985.4
985.6
985.8
N 2000
N 1800
N 1600
N 1400
N 1200
N 1000
N 800
N 600
N 400
N 200
E -400
E -200
E 0
E 200
E 400
E 600
E 800
E 1000
E 1200
E 1400
E 1600
E 1800
E 2000
LEGEND
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
MONITORING WELL LOCATION
985.04 GROUNDWATER ELEVATION
968.30 ELEVATION CONTOUR (0.2 FT INTERVALS)
(0.001) APPROXIMATE VERTICAL GRADIENT (NEGATIVE VALUE INDICATES UPWARD GRADIENT)
WATER LEVEL MEASUREMENTS
UNCONFINED GROUNDWATER CONTOURS
CH2M HILL - AUGUST 2002
PENTA WOOD PRODUCTS
CH2MHILL




WATER LEVEL MEASUREMENTS
SEMI-CONFINED GROUNDWATER CONTOURS
CH2M HILL - AUGUST 2002
PENTA WOOD PRODUCTS

CH2MHILL

**Attachment 2**
Groundwater Elevation Measurements - May and August 2002
*Pentawood Products Site*

| Well | Aquifer | May 2002 | | | August 2002 | | |
|---|---|---|---|---|---|---|---|
| | | Depth to Groundwater (ft) | Groundwater Elevation (ft msl) | Comment | Depth to Groundwater (ft) | Groundwater Elevation (ft msl) | Comment |
| MW-01 | UC | 87.06 | 985.26 | Turbid, lt. Brown | 86.64 | 985.68 | |
| MW-02 | UC | 80.08 | 984.77 | | 79.54 | 985.31 | |
| MW-03 | SC | 144.52 | 984.98 | | 144.18 | 985.32 | |
| MW-04 | SC | 103.26 | 984.55 | | 103.08 | 984.73 | |
| MW-05 | UC | 86.95 | 984.78 | | 86.36 | 985.37 | |
| MW-06 | | 124.62 | | | 124.22 | | |
| MW-06S | UC | 123.45 | 985.18 | Sheen | 122.99 | 985.64 | |
| MW-07 | SC | 111.55 | 984.84 | | 111.24 | 985.15 | |
| MW-08 | SC | 106.37 | 984.91 | | 105.90 | 985.38 | |
| MW-09 | UC | 35.40 | 985.31 | | 34.88 | 985.83 | |
| MW-10 | SC | 104.91 | 984.83 | | 104.93 | 984.81 | Sheen |
| MW-10 S | UC | 105.44 | 984.99 | Sheen | 104.45 | 985.98 | |
| MW-11 | SC | 101.15 | 984.43 | | 100.86 | 984.72 | |
| MW-12 | SC | 97.14 | 984.85 | | 96.78 | 985.21 | |
| MW-13 | UC | 21.37 | 984.73 | | 20.77 | 985.33 | Turbid, brown |
| MW-14 | SC | 94.01 | 984.49 | | 93.79 | 984.71 | |
| MW-15 | SC | 142.28 | 984.94 | | 141.91 | 985.31 | |
| MW-16 | UC | 96.56 | 985.36 | | 96.06 | 985.86 | |
| MW-17 | SC | 99.64 | 984.86 | | 99.29 | 985.21 | |
| MW-18 | UC | 87.52 | 985.17 | DTP 87.23 | 87.07 | 985.66 | DTP 86.74 |
| MW-19 | UC | 103.83 | 984.54 | DTP 103.60 | 103.14 | 985.22 | DTP 102.92 |
| MW-20 | UC | 112.70 | 985.06 | | 112.19 | 985.57 | Product, petroleum odor |
| MW-21 | UC | 110.55 | 985.15 | | 110.20 | 985.50 | |
| MW-22 | UC | 99.48 | 985.22 | Turbid, red/brown, sandy | 99.10 | 985.60 | |
| MW-23 | SC | 32.00 | 985.57 | | 32.70 | 984.87 | |
| MW-24 | UC | 99.14 | 984.96 | | 98.74 | 985.36 | |
| MW-25 | UC | 110.27 | 984.97 | | 109.91 | 985.33 | |
| MW-26 | UC | 102.25 | 984.82 | | 101.91 | 985.16 | |

*LNAPL Thickness Measurements - 2002*

| | LNAPL Thickness (ft) | |
|---|---|---|
| MW-18 | 0.29 | 0.33 |
| MW-19 | 0.23 | 0.22 |

# Attachment 3

# Natural Attenuation Data

Pentawood Products Site
Natural Attenuation Trend Data
*Anuual Groundwater Sampling*


| Well | Sample Date | Temp. (C) | Specific Cond. (umhos) | DO (mg/L) | DO (%) | pH | ORP (mV) | Nitrate (mg/L) | Dissolved Manganese (mg/L) | Dissolved Iron (mg/L) | Sulfate (mg/L) | Methane (mg/L) | PCP (ug/L) | Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-01 | 10/09/1997 | 8.46 | 475 | 11.23 | 96.2 | 7.32 | 171.0 | 6.5 | NT | <0.02 | 6.3 | <0.01 | 2.0 | 18 |
| MW-01 | 04/05/2000 | 8.56 | 416 | 10.34 | 86.5 | 7.14 | 290.6 | 1.6 | <0.002 | <0.05 | 2.5 | 0.0003 | <0.5 | 8.7 |
| MW-01 | 04/24/2001 | 8.69 | 431 | 9.83 | 84.6 | 7.08 | 168.7 | 6.5 | <0.015 | <0.025 | 13.0 | <0.00011 | <0.1 | 24 |
| MW-01 | 09/11/2001 | 10.18 | 370 | 10.63 | NR | 7.00 | 235.8 | 2.6 | 0.00079 | <0.035 | <8.2 | <0.01 | 0.5 | 10 |
| MW-01 | 05/14/2002 | 8.89 | 541 | 9.68 | 83.6 | 7.17 | 113.7 | 2.7 | 0.0048 | <0.011 | 7.8 | | 0.13 | 9.3 |
| MW-01 | 08/06/2002 | 8.82 | 439 | NR | 89.2 | 7.33 | 241.1 | <0.15 | 0.00095 B | <0.011 | 7.9 | <0.01 | 0.067 | 7.4 |
| MW-02 | 10/09/1997 | 9.49 | 143 | 8.82 | 77.2 | 6.42 | 274.1 | 1.1 | NT | <0.02 | 17.0 | <0.01 | <1.0 | 3.5 |
| MW-02 | 04/05/2000 | 9.47 | 111 | 9.59 | 81.4 | 6.85 | 305.8 | <0.1 | 0.003 | <0.05 | 58.3 | 0.0003 | <0.5 | 1.0 |
| MW-02 | 09/12/2001 | 12.00 | 172 | 11.50 | 99.8 | 7.62 | 96.9 | 2.3 | 0.057 | <0.035 | 10 | <0.01 | 0.51 | 6.2 |
| MW-02 | 08/06/2002 | 9.96 | 128 | 6.31 | NR | 5.41 | 380.5 | <0.15 | 0.0181 | 0.048 | 10 | <0.01 | 0.12 | 3.0 |
| MW-03 | 10/08/1997 | 10.34 | 696 | 3.52 | 31.5 | 6.91 | 38.4 | 4.4 | 0.011 | 0.26 | 16.0 | <0.01 | <1.0 | 42 |
| MW-03 | 04/04/2000 | Parameters not recorded. | | | | | | 2.8 | 0.010 | 0.50 | 12.5 | 0.0016 | <0.6 | 64 |
| MW-03 | 04/25/2001 | 10.27 | 1039 | 3.77 | 33.8 | 6.83 | 169.1 | 4.4 | 0.008 | 0.14 | 11.0 | NT | <0.11 | 47 |
| MW-03 | 09/13/2001 | 11.53 | 1118 | 16.44 | NR | 6.93 | 99.0 | 4.0 | 0.031 | 0.93 | 14.0 | <0.01 | 0.093 | 58 |
| MW-03 | 08/07/2002 | 10.36 | 1007 | 4.50 | NR | 6.74 | 165.1 | <0.15 | 0.0109 | 0.164 | 16.0 | <0.01 | 0.11 | 69 |
| MW-04 | 10/09/1997 | 9.61 | 228 | 1.09 | 8.0 | 8.41 | -137.9 | <0.1 | NT | 0.04 | 6.3 | 0.139 | <1.0 | 7.3 |
| MW-04 | 04/04/2000 | 9.43 | 237 | 1.38 | NR | 8.49 | NR | <0.1 | 0.047 | <0.05 | 10.8 | 0.0008 | <0.5 | 9.6 |
| MW-05 | 10/10/1997 | 10.68 | 887 | 0.38 | 3.4 | 6.24 | 28.8 | <0.1 | NT | 4.86 | 15.0 | <0.01 | 28,000 | 50 |
| MW-05 | 04/07/2000 | 8.76 | 737 | 4.81 | 39.3 | 6.03 | 119.4 | <0.1 | 3.35 | 3.37 | 34.3 | 0.0009 | 20,600 | 49 |
| MW-05 | 04/26/2001 | 12.29 | 1018 | 3.71 | 36.0 | 6.40 | -39.7 | <0.13 | 11.3 | 7.63 | 28.0 | NT | 20,600 | 42 |
| MW-05 | 09/13/2001 | 11.45 | 698 | 10.19 | 97.0 | 6.80 | -68.6 | 0.17 | 8.5 | 4.10 | 22.0 | <0.01 | 6300 | 29 |
| MW-05 | 08/07/2002 | 11.80 | 589 | 5.02 | NR | 6.15 | 35.2 | <0.15 | 7.84 | 7.90 | 21.0 | | 510 B | 26 |
| MW-06S | 10/09/1997 | 11.26 | 792 | 5.25 | 48.0 | 6.21 | 232.1 | 4.5 | NT | 0.02 | 0.9 | <0.01 | <1.0 | 72 |
| MW-06S | 04/07/2000 | Well sampled for VOCs only. | | | | | | | | | | | | |
| MW-06S | 04/26/2001 | 12.03 | 453 | 2.78 | 26.7 | 5.92 | 142.2 | 0.9 | 0.347 | <0.025 | 12 | NT | 3 | 14 |
| MW-06S | 09/12/2001 | Not collected due to product in the well. | | | | | | 1.1 | 0.8 | <0.035 | 16 | <0.01 | 1.1 | 12 |
| MW-06S | 08/07/2002 | 12.75 | 583 | NR | 41.4 | 6.08 | 77.8 | <0.15 | 1.79 | 3.33 | 18 | 0.27 | 88 B | 17 |

| Well | Sample Date | Temp. (C) | Specific Cond. (umhos) | DO (mg/L) | DO (%) | pH | ORP (mV) | Nitrate (mg/L) | Dissolved Manganese (mg/L) | Dissolved Iron (mg/L) | Sulfate (mg/L) | Methane (mg/L) | PCP (ug/L) | Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-07 | 10/14/1997 | 10.13 | 709 | 8.23 | 73.0 | 6.86 | 6.0 | 4.9 | NT | 0.62 | 6.0 | <0.01 | <1.0 | 7.6 |
| MW-07 | 04/04/2000 | 9.87 | 693 | 5.82 | 51.5 | 7.01 | 156.1 | 2.7 | 0.026 | 0.36 | 6.1 | 0.004 | <0.5 | 4.8 |
| MW-07 | 04/25/2001 | 12.60 | 721 | 7.54 | 71.2 | 6.89 | 127.5 | 3.6 | 0.007 | 0.15 | 6.5 | 0.0047 | <0.1 | 8.4 |
| MW-07 | 09/11/2001 | 11.04 | 824 | 8.36 | 74.5 | 6.27 | 208 | 3 | 0.0044 | 0.23 | 10 | 0.012 | 0.083 | 23 |
| MW-07 | 08/07/2002 | 12.68 | 812 | NR | 93.7 | 6.71 | 256.3 | <0.15 | 0.004 B | 0.31 | 10 | <0.01 | 0.03 | 21 |
| MW-08 | 10/14/1997 | 9.73 | 363 | 4.28 | 37.2 | 7.93 | 12.2 | 1.4 | NT | 0.15 | 4.5 | 0.0365 | <1.0 | 4.2 |
| MW-08 | 04/05/2000 | 10.07 | 295 | 3.78 | 33.5 | 6.91 | 252.3 | 3.5 | 0.005 | <0.05 | 6.5 | 0.0072 | <0.5 | 6.3 |
| MW-08 | 04/26/2001 | 11.08 | 358 | 5.50 | 52.3 | 7.94 | 151.3 | 1.5 | 0.027 | <0.025 | 7.5 | 0.0116 | 0.2 | 3.3 |
| MW-08 | 09/11/2001 | 10.49 | 386 | 4.08 | NR | 7.77 | 29.3 | 1.5 | 0.018 | 0.07 | <7.6 | <0.01 | 0.062 | 3.8 |
| MW-08 | 08/08/2002 | 11.80 | 375 | NR | 75.2 | 7.56 | 160.9 | <0.15 | 0.0053 B | 0.011 B | 6.0 | <0.01 | <0.04 | 4.2 |
| MW-09 | 10/08/1997 | 10.59 | 171 | 6.30 | 54.9 | 5.63 | 217.6 | 4.2 | NT | <0.0001 | 3.4 | <0.01 | <1.0 | 45 |
| MW-09 | 04/05/2000 | 9.65 | 153 | 6.36 | 44.7 | 5.78 | 321.7 | 2.0 | 0.022 | <0.05 | 8.5 | 0.0004 | 0.60 | 3.2 |
| MW-09 | 04/23/2001 | 9.62 | 172 | 5.21 | 43.1 | 5.72 | 162.7 | 2.5 | 0.034 | <0.025 | 27 | <0.00012 | 0.12 | 3.2 |
| MW-09 | 09/12/2001 | 11.23 | 206 | 5.75 | NR | 5.54 | 309.8 | 3.3 | 0.016 | 0.11 | <6.8 | <0.01 | 0.76 | 6.5 |
| MW-09 | 08/06/2002 | 9.21 | 253 | 1.96 | 17.3 | 5.27 | 391.9 | <0.15 | 0.0063 B | <0.011 | 22 | <0.01 | 0.54 | 11 |
| MW-10 | 10/15/1997 | 10.88 | 803 | 0.38 | 3.4 | 6.83 | -33.2 | 4.9 | NT | 0.0022 | 13 | 0.0135 | 3400 | 35 |
| MW-10 | 04/06/2000 | 10.76 | 988 | 0.47 | 4.2 | 6.82 | 27.4 | 1.7 | 1.59 | 0.12 | 14 | 0.0031 | 9530 | 55.9 |
| MW-10 | 04/26/2001 | 12.31 | 1029 | 4.52 | 42.8 | 6.89 | -103.5 | 0.2 | 2.38 | 5.65 | 22 | NT | 22800 | 48 |
| MW-10 | 09/12/2001 | 11.18 | 1188 | 6.55 | 63.1 | 6.89 | -71.1 | 0.13 | 3.2 | 2.4 | 23 | <0.01 | 21000 | 61 |
| MW-10 | 08/07/2002 | 14.24 | 1010 | NR | 60.9 | 6.30 | -147.8 | <0.15 | 2.54 | 10.7 | 20 | 0.011 | 22000 B | 56 |
| MW-10S | 10/15/1997 | 13.18 | 339 | 10.49 | 100 | 7.55 | 135.6 | <0.1 | NT | 0.00005 | 23 | <0.01 | 12000 | 38 |
| MW-10S | 04/07/2000 | 9.41 | 599 | 5.02 | 42 | 6.37 | 331.6 | <100 | 10.1 | <0.05 | 138 | 0.0016 | 56100 | 53 |
| MW-10S | 04/25/2001 | Not collected due to product in the well. | | | | | | 1.5 | 6.03 | 11.30 | 8.6 | 0.0006 | 49000 | 11 |
| MW-10S | 09/12/2001 | Not collected due to product in the well. | | | | | | 4.7 | 7.60 | 0.048 | 13 | <0.01 | 82000 | 10 |
| MW-10S | 08/07/2002 | 13.62 | 431 | NR | 66.1 | 6.31 | 303.8 | 0.11 | 7.07 | 0.067 | 14 | <0.01 | 390 B | 10 |

Pentawood Products Site
Natural Attenuation Trend Data
*Anuual Groundwater Sampling*


| Well | Sample Date | Temp. (C) | Specific Cond. (umhos) | DO (mg/L) | DO (%) | pH | ORP (mV) | Nitrate (mg/L) | Dissolved Manganese (mg/L) | Dissolved Iron (mg/L) | Sulfate (mg/L) | Methane (mg/L) | PCP (ug/L) | Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-11 | 10/15/1997 | 13.98 | 398 | 4.86 | 47.2 | 7.94 | 144.3 | 3.4 | NT | <0.0001 | 12 | <0.01 | <1.0 | 7.5 |
| MW-11 | 04/04/2000 | 13.24 | 427 | 6.57 | 61.9 | 7.80 | 215.5 | 3.1 | <0.002 | <0.05 | 9.4 | 0.0001 | <0.6 | 7.0 |
| MW-11 | 04/04/2001 | 12.98 | 337 | 6.98 | 67.6 | 7.86 | 138.5 | 3.7 | <0.015 | <0.025 | 3.5 | <0.00011 | <0.11 | 6.3 |
| MW-11 | 09/10/2001 | 13.13 | 414 | 9.09 | NR | 7.77 | 100.0 | 3.1 | 0.00045 | <0.035 | <7.4 | <0.010 | 0.091 | 8.0 |
| MW-11 | 08/06/2002 | 13.12 | 455 | 5.37 | NR | 7.58 | 240.6 | <0.15 | 0.0012 B | <0.011 | 7.6 | <0.01 | <0.04 | 7.8 |
| MW-12 | 10/15/1997 | 10.16 | 1044 | 2.86 | 25.0 | 6.93 | 41.2 | <0.1 | NT | 0.00027 | 15 | <0.01 | 5000 | 48 |
| MW-12 | 04/06/2000 | 10.10 | 1097 | 0.63 | 5.6 | 6.89 | 169.9 | 0.5 | 1.59 | 0.11 | 11.9 | 0.0016 | 10300 | 55 |
| MW-12 | 04/06/2001 | Parameters not recorded. | | | | | | 0.4 | 1.57 | 0.13 | 16 | 0.0480 | 1500 | 48 |
| MW-12 | 09/13/2001 | 11.02 | 1142 | 3.95 | 36.7 | 6.84 | 22.2 | <0.53 | 1.40 | 0.74 | 16 | <0.01 | 18000 | 47 |
| MW-12 | 05/14/2002 | 10.28 | 933 | 0.75 | 7.0 | 6.72 | 110 | 0.67 | 1.68 | <0.011 | 17 | | 4300 | 40 |
| MW-12 | 08/07/2002 | 12.21 | 920 | NR | 45.9 | 6.69 | 150 | 0.46 | 1.60 | 0.105 | 15 | <0.01 | 6400 B | 37 |
| MW-13 | 10/08/1997 | 12.79 | 185 | 6.00 | 54.1 | 6.19 | 206.7 | 1.3 | 0.00003 | 0.00001 | 1.4 | <0.01 | 0.7 | 2.7 |
| MW-13 | 04/05/2000 | 9.67 | 189 | 8.29 | 51.5 | 5.49 | 296.7 | <100 | 0.112 | <0.05 | 431 | 0.0003 | 0.8 | 4.4 |
| MW-13 | 04/23/2001 | 9.08 | 140 | 3.44 | 26.8 | 5.59 | 207.9 | 1.8 | 0.110 | <0.025 | 35 | <0.00012 | 0.2 | 3.5 |
| MW-13 | 09/10/2001 | 10.69 | 203 | NR | NR | 5.54 | 196.0 | 2.5 | 0.027 | 0.052 | <7.5 | <0.01 | 0.69 | 5.4 |
| MW-13 | 08/05/2002 | 11.49 | 223 | 5.36 | 48.3 | 5.38 | 333.1 | <0.15 | 0.045 | 1.31 | 8.4 | <0.01 | 0.64 | 6.8 |
| MW-14 | 10/09/1997 | 9.32 | 252 | 6.43 | 56.2 | 8.09 | 108.9 | 1.6 | NT | <0.0001 | 2.4 | <0.01 | <1.0 | 8.0 |
| MW-14 | 04/06/2000 | 9.10 | 283 | 6.92 | 60.0 | 7.42 | 257.3 | 2.2 | <0.002 | <0.05 | 4.1 | 0.0002 | <0.5 | 15.7 |
| MW-15 | 10/16/1997 | 9.29 | 409 | 4.49 | 39.1 | 8.22 | 149.8 | 4.1 | NT | 0.00001 | 6.3 | <0.01 | <1 | 6.5 |
| MW-15 | 04/04/2000 | 8.08 | 483 | 10.72 | 85.1 | 7.69 | 284.1 | 3.5 | <0.002 | <0.05 | 10 | 0.0003 | <0.5 | 12.3 |
| MW-15 | 04/25/2001 | 11.79 | 675 | 8.73 | 81.3 | 7.73 | 179.4 | 4.0 | <0.015 | <0.025 | 2.6 | <0.0001 | <0.11 | 15 |
| MW-15 | 09/12/2001 | 9.74 | 548 | 9.80 | NR | 8.00 | 153.3 | 3.7 | 0.00031 | <0.035 | <4.5 | <0.01 | 0.077 | 17 |
| MW-15 | 08/06/2002 | 10.24 | 508 | NR | 101.4 | 7.72 | 285.7 | <0.15 | <0.00042 | <0.011 | 4.7 | <0.01 | <0.04 | 16 |
| MW-16 | 10/14/1997 | 9.86 | 409 | 8.57 | 74.8 | 6.82 | 99.4 | 3.2 | NT | 0.00002 | 8.10 | <0.01 | <1 | 6.1 |
| MW-16 | 04/06/2000 | 9.77 | 169 | 8.16 | 70.0 | 6.63 | 310.9 | 3.9 | 1.69 | <0.05 | 24.1 | <0.001068 | <0.5 | 6.5 |
| MW-16 | 04/26/2001 | 10.46 | 1102 | 4.72 | 43.2 | 6.81 | 75.6 | 8.7 | 0.009 | 0.03 | 29.0 | <0.00012 | <0.11 | 3.6 |
| MW-16 | 09/10/2001 | Parameters not recorded. | | | | | | 5.8 | 0.00082 | <0.035 | 11.0 | <0.01 | 0.17 | 1.8 |
| MW-16 | 08/06/2002 | 11.70 | 247 | 10.86 | NR | 6.11 | 331.3 | <0.15 | 0.0091 B | 0.078 | 13.0 | <0.01 | 0.035 | 2.0 |

| Well | Sample Date | Temp. (C) | Specific Cond. (umhos) | DO (mg/L) | DO (%) | pH | ORP (mV) | Nitrate (mg/L) | Dissolved Manganese (mg/L) | Dissolved Iron (mg/L) | Sulfate (mg/L) | Methane (mg/L) | PCP (ug/L) | Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-17 | 10/15/1997 | 9.26 | 399 | 4.53 | 39.0 | 7.89 | 147.2 | 4.1 | NT | <0.0001 | 10 | <0.01 | <1 | 4.8 |
| MW-17 | 04/06/2000 | 9.15 | 438 | 4.81 | 41.8 | 7.73 | 254.9 | 4.2 | <0.002 | <0.05 | <3 | 0.0001 | <0.5 | 4.9 |
| MW-17 | 04/26/2001 | 10.38 | 412 | 9.64 | 85.7 | 7.77 | 58.6 | 5.0 | <0.015 | <0.025 | 6.8 | NT | 0.7 | 4.1 |
| MW-17 | 09/11/2001 | 11.44 | 457 | 6.96 | 62.9 | 7.49 | 262 | 4.4 | <0.00027 | 0.31 | <9.3 | <0.01 | <0.059 | 4.8 |
| MW-17 | 08/08/2002 | 12.88 | 425 | NR | 65.8 | 7.64 | 204.5 | <0.15 | <0.00042 | <0.011 | 7.4 | <0.01 | 0.032 | 4.6 |
| MW-18 | 10/10/1997 | 11.51 | 777 | 1.03 | 9.2 | 6.13 | -12.1 | <0.1 | NT | 0.03 | 11.0 | <0.01 | 8800 | 49 |
| MW-19 | 10/16/1997 | 8.43 | 662 | 12.11 | 103.4 | 8.23 | 133.6 | 3.8 | NT | <0.0001 | 19 | <0.01 | 8900 | 47 |
| MW-19 | 04/07/2000 | 7.80 | 650 | 5.02 | 40.3 | 6.75 | 323.2 | 7.0 | <0.002 | <0.05 | 90 | 0.0003 | 11000 | 37.4 |
| MW-19 | 04/07/2001 | Not collected due to product in the well. | | | | | | 3.4 | 1.79 | <0.025 | 47 | NT | 25600 | 39 |
| MW-19 | 09/12/2001 | Not collected due to product in the well. | | | | | | 1.3 | 1.80 | 0.071 | <9.7 | 0.016 | 400000 | 19 |
| MW-19 | 05/13/2002 | Not collected due to product in the well. | | | | | | 2.0 | 2.07 | <0.011 | 16 | | 14000 | 33 |
| MW-19 | 08/08/2002 | Not collected due to product in the well. | | | | | | 0.16 | 3.11 | 0.218 | 16 | <0.01 | 11000 B | 22 |
| MW-20 | 10/15/1997 | Dry. Could not collect parameter sample. | | | | | | NT | NT | NT | NT | <0.01 | 11000 | NT |
| MW-20 | 04/26/2001 | Parameters not recorded. | | | | | | <0.13 | 2.25 | 0.84 | 67 | NT | 36600 | 24 |
| MW-20 | 09/12/2001 | Not collected due to product in the well. | | | | | | 0.15 | 2.8 | <0.035 | 24 | <0.01 | 83000 | 16 |
| MW-20 | 08/07/2002 | Not collected due to product in the well. | | | | | | <0.15 | 3.28 | 0.206 | 25 | <0.01 | 30000 B | 22 |
| MW-21 | 02/09/1998 | 8.50 | 559 | 8.35 | NT | 7.05 | 177.5 | NT | NT | <0.1 | 9.1 | 0.011 | <1.0 | 71 |
| MW-21 | 05/14/2002 | 9.29 | 457 | 10.66 | 93.5 | 5.86 | 152.0 | 2.0 | | 0.130 | 7.3 | | 0.1 | 69 |
| MW-21 | 08/06/2002 | 10.72 | 444 | NR | 99.0 | 6.79 | 297.6 | <0.15 | 0.00063 B | <0.011 | 9.6 | | 0.035 | 49 |
| MW-22 | 02/09/1998 | 8.70 | 558 | 7.50 | NT | 6.86 | 119.5 | NT | NT | <0.1 | 18 | 0.013 | <1.0 | 56 |
| MW-22 | 05/14/2002 | 9.91 | 423 | 10.25 | 91.3 | 6.77 | 85.5 | 3.7 J | 0.0035 | 0.023 | 14 | | 0.1 | 18 |
| MW-22 | 08/06/2002 | 11.37 | 343 | NR | 101.6 | 6.86 | 323.7 | <0.15 | <0.00042 | 0.025 B | 12 | <0.01 | 0.1 | 7.2 |
| MW-23 | 02/27/1998 | 9.63 | 270 | 13.68 | 122.3 | 7.93 | 159.0 | NT | NT | <0.1 | 7.6 | 0.0566 | <1.0 | 8.7 |
| MW-23 | 09/11/2001 | 11.57 | 322 | 3.21 | 28.8 | 7.46 | 112.6 | <0.13 | 0.029 | <0.035 | <8.2 | <0.01 | 0.49 | 10 |
| MW-24 | 02/08/1998 | 13.80 | 524 | 5.35 | NT | 6.62 | 80.0 | NT | NT | <0.1 | 5.2 | <0.01 | <1 | 19 |
| MW-24 | 04/24/2001 | 15.30 | 634 | 3.67 | 34.9 | 6.28 | 209.2 | 3.6 | 0.0024 | <0.025 | 12 | <0.0001 | 0.1 | 36 |

| Well | Sample Date | Temp. (C) | Specific Cond. (umhos) | DO (mg/L) | DO (%) | pH | ORP (mV) | Nitrate (mg/L) | Dissolved Manganese (mg/L) | Dissolved Iron (mg/L) | Sulfate (mg/L) | Methane (mg/L) | PCP (ug/L) | Chloride (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-25 | 02/09/1998 | 8.69 | 808 | 8.16 | NT | 6.95 | 55.0 | NT | NT | <0.1 | 9.9 | 0.017 | <1.0 | 16 |
| MW-26 | 04/24/2001 | 11.24 | 646 | 7.73 | 71.8 | 7.05 | 190.2 | 5.0 | <0.015 | 0.04 | 10 | <0.0001 | <0.1 | 22 |
| MW-26 | 09/10/2001 | Parameters not recorded. | | | | | | 3.2 | <0.004 | 0.1 | 12 | <0.01 | 0.16 | 30 |
| MW-26 | 05/14/2002 | 12.28 | 588 | 7.55 | 72.80 | 7.11 | 17.80 | 3 J | 0.00073 | <0.011 | 15 | | 0.1 | 27 |
| MW-26 | 08/05/2002 | 11.30 | 588.00 | NR | 66.30 | 6.52 | 280.1 | <0.15 | 0.00056 B | <0.011 | 14 | <0.01 | 0.03 | 18 |
| PW-01 | 10/23/1997 | 11.10 | 550 | 5.00 | NT | 8.92 | 185.0 | 7.7 | NT | 0.0012 | 10 | 0.0195 | 5 | 48 |
| PZ-03 | 02/09/1998 | 7.50 | 212 | 11.02 | NT | 6.91 | 164.0 | NT | NT | NT | NT | NT | <1 | NT |

NR - Parameter not Recorded.

NT - Parameter not tested.

# Attachment 4

# Residential Well Memorandum