2015 Annual Groundwater Monitoring Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon

Prepared for:
Oregon Department of Environmental Quality

May 26, 2015
1843-01/Task 3

APEX

2015 Annual Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

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1.0 Introduction

This Groundwater Monitoring Report describes the results of annual groundwater monitoring activities at and in the vicinity of the Taylor Lumber and Treating (TLT) Superfund Site located at 22125 SW Rock Creek Road in Yamhill County, Sheridan, Oregon (the Site; Figure 1). This report was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 3 of Task Order No. 20-13-4. The monitoring activities described in this report were conducted in general accordance with the Gro*undwater Monitoring Work Plan* submitted to DEQ on April 4, 2013 (Work Plan; Apex Companies, LLC [Apex], 2013). The Work Plan was technically based on the *Long-term Groundwater Monitoring and Reporting Plan – Taylor Lumber and Treating Superfund Site* prepared by the U.S. Environmental Protection Agency (EPA) in March 2010 (LGMP; EPA, 2010). The Work Plan was prepared to be fully inclusive of the LGMP; therefore, there are no significant changes to note between the LGMP and the Work Plan.

1.1 Background

The Site is a wood treating facility that was operated by TLT from 1946 until 2001, when TLT filed for bankruptcy. Pacific Wood Preserving of Oregon (PWPO) entered into a Prospective Purchaser Agreement (PPA) with the EPA and purchased the wood treatment portion of the facility. An Amendment to Agreement and Covenant Not to Sue between EPA and PWPO was finalized on May 26, 2011, and an Amended PPA between DEQ and PWPO was finalized on June 7, 2011. PWPO began operations at the Site in 2002, treating wood using copper- and borate-based solutions. Beginning June 7, 2011, PWPO began using a pentachlorophenol (PCP) solution to treat wood. In November 2013, PWPO was purchased by McFarland Cascade, A Stella Jones Company.

A Record of Decision (ROD) for the Site was signed on September 30, 2005 (EPA, 2005). The ROD identifies PCP as the contaminant of concern (COC) in Site groundwater (EPA, 2005). In accordance with the ROD, contaminated soils have been removed from the Site. However, contaminated soils and groundwater remain within the treatment plant area at the Site, enclosed by a soil-bentonite barrier wall. A low-permeability asphalt cap has been placed over the entire area enclosed by the barrier wall, which impedes the infiltration of stormwater into the groundwater located within the barrier wall. Four groundwater extraction wells have been installed within the barrier wall to stimulate an inward hydraulic gradient and prevent water from rising above the cap (EPA, 2010).

1.2 Scope of Work

The scope of work was completed in general accordance with the Work Plan (Apex, 2013). The following activities comprise the scope of work as summarized in the Work Plan:

1) For health and safety purposes, measure organic vapors in the well headspace prior to monitoring and sampling activities.

2) Observe and note well conditions in the project field notes (copies provided in Appendix A).

3) Measure water levels in Site monitoring wells and in extraction wells PW-01 through PW-04, located within the barrier wall.

4) Measure water quality parameters prior to sampling to determine water stability during purging and to qualify the representativeness of the samples.

5) Collect groundwater samples for PCP analysis from 18 monitoring wells located outside the barrier wall.

6) Collect groundwater samples for PCP analysis from residential well RW-01.

These activities, as well as any deviations from the Work Plan, are discussed in detail within this report. A full copy of the work plan is provided in Appendix B.

2.0 Summary of Field Events

A field representative from Apex conducted the 2015 annual groundwater monitoring event at the Site from April 6 through 8, 2015. Work was conducted in general accordance with the Sampling and Analysis Plan (SAP) in Appendix B of the Work Plan (Apex, 2013). As described in Section 1.2, field activities included well headspace monitoring and documentation of well conditions, measurement of depth to water from extraction and monitoring wells, and collection of groundwater samples from monitoring wells and one residential well. Table 1 lists the groundwater monitoring wells and residential wells that were gauged and sampled as part of the Site monitoring program. The location of the monitoring wells, extraction wells, and the residential well included in the monitoring program are shown on Figure 2.

2.1 Well Inspection and Headspace Screening

Prior to sampling, site conditions were recorded including temperature, precipitation, wind direction, and any other factors that could affect sample quality. The well monuments were inspected for signs of damage and were noted accordingly in the field notes (Appendix A). In general, the wells were in good condition, with the exception of missing bolts on some of the flush monument well covers (details in Appendix A). The bolt threads on these wells were stripped and could not be repaired during the monitoring event. The well lids were opened and the headspace around each well was screened for organic vapors using a photoionization detector (PID). Headspace concentration measurements were documented in the field notes provided in Appendix A. PID concentrations were below 1 part per million (ppm; PID calibrated to 100 ppm isobutylene), indicating that breathing space conditions were safe for the field representative.

2.2 Groundwater Elevation Measurements

On April 6, 2015, groundwater elevation measurements were collected from 22 wells in accordance with the Work Plan (Apex, 2013). The well lids and caps were opened a minimum of 5 minutes prior to collecting measurements so that the air pressure in the well had time to equilibrate with the ambient air pressure. Depth to groundwater was measured with an electronic water level probe in accordance with the Work Plan SAP (Appendix B). Depth-to-water measurements and groundwater elevation data are provided in Table 2. A groundwater potentiometric map for the Site and vicinity is provided on Figure 3.

2.3 Groundwater Sampling

Groundwater samples were collected and analyzed for PCP from 18 monitoring wells and 1 residential well during the 2015 annual monitoring event, in accordance with the Work Plan (Apex, 2013). Groundwater was purged from each monitoring well prior to sampling using dedicated Teflon tubing and a peristaltic pump. Groundwater was purged from the residential well using a hose for 10 minutes prior to sampling. Field parameters, including temperature, pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity were collected during the purging process using a multi-parameter meter with a flow-through cell (monitoring wells only) and a stand-alone turbidity meter. Groundwater field parameters from the residential well were analyzed by collecting groundwater into a plastic cup approximately every 10 minutes during the purge process. The multi-parameter meter was inserted directly into the cup to measure the field parameters. Groundwater was collected into a separate glass container to measure turbidity. Detailed groundwater sampling procedures are described in the Work Plan SAP (Appendix B). Field parameter measurements are documented in the field notes in Appendix A. After purging, groundwater samples were collected in accordance with the Work Plan.

2.4 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of purge water and decontamination water. IDW generated during the monitoring event was placed in covered buckets and transported to and disposed of in the drain located to the north of the stormwater treatment system (Figure 2). Disposable items, such as gloves, paper towels, etc., were disposed of as municipal waste.

2.5 Deviations from Work Plan

The following deviations from the Work Plan occurred during the annual 2015 groundwater monitoring event:

- According to the Work Plan, residential well RW-01 is to be purged for 10 minutes, after which, parameters are to be collected every two minutes to ensure stabilization before collecting a sample. During the annual 2015 groundwater monitoring event, residential well RW-01 was purged for 10 minutes prior to collecting field parameter data, however, the parameters were

inadvertently collected every 10 minutes after the initial purge. The water parameters stabilized after three consecutive measurements, and the sample collected after purging is considered to be representative of the formation.

- Monitoring wells PZ-105 and MW-10S dewatered during purging. In accordance with Apex Standard Operating Procedure (SOP) 2.5 (Low Flow Groundwater Sampling Procedures) included in the Work Plan SAP (Appendix B), water samples were collected after the wells recharged to 90 percent of the initial water column.

3.0 Monitoring Results

3.1 Groundwater Elevation Results

A groundwater elevation contour map is provided on Figure 3. Groundwater flow at the site is from the northwest to southeast towards the South Yamhill River and is consistent with historical documentation of groundwater flow direction (CMH2MHill, 2003; Apex, 2012). The groundwater contour map on Figure 3 depicts a depression in the groundwater flow path that coincides with the perimeter of the barrier wall. Within the barrier wall, groundwater elevations are between 5 and 10 feet lower than the surrounding area as groundwater is being actively extracted from within the barrier wall. Within the barrier wall, the groundwater flow direction is not consistent with regional flow, and suggests that groundwater extraction from within the barrier wall has successfully produced a localized inward gradient.

3.2 Groundwater Analytical Results

The groundwater samples were submitted to ESC Lab Sciences (ESC) in Mt. Juliet, Tennessee for laboratory analysis of PCP by EPA Method 8270 (PCP only). ESC is certified to analyze PCP in water samples in the state of Oregon. A copy of the Oregon laboratory certification and analytical reports is included in Appendix C, along with a quality assurance/quality control (QA/QC) review of the data. The results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose. The April 2015 groundwater analytical results, as well as historical analytical results, are presented in Table 3. Analytical results from 2011 through 2015 are summarized on Figure 4.

4.0 Data Evaluation and Conclusions

Concentration trends (from February 2002 through April 2015) for PCP in groundwater from wells MW-1S, MW-11S, MW-15S, MW-16S, PZ-105, and MW-103S are provided in Appendix D. These wells were selected to evaluate long-term concentration trends in Site perimeter and off-site wells, and to confirm that PCP in groundwater has not migrated south to the South Yamhill River or to the east under Rock Creek Road. The trend plots for wells MW-15S, MW-16S, MW-103S, and PZ-105, all located to the south of the Site, were either stable or decreasing. PCP concentrations in groundwater in wells located to the south of

Highway 18B (MW-10S, MW-24S, and MW-9S) were non-detect during the April 2015 monitoring event. The data confirm that migration to the south towards the South Yamhill River is not occurring.

Trend plots for wells MW-1S and MW-11S were used to confirm that PCP in groundwater was not migrating beyond the Site barrier wall and to the east under Rock Creek Road. Concentrations in MW-1S have decreased from 14 micrograms per liter (µg/L) in November 2002 to non-detect since April 2011. Concentrations in MW-11S have decreased from 0.87 µg/L in April 2011 to non-detect since April 2012. While concentrations of PCP in well MW-11S have historically varied between detections slightly over reporting limits and having no detectable PCP, there have been no significant increases in PCP concentrations in the well that would indicate that eastern migration is occurring.

PCP has not been detected in water well RW-01 since the well was initially sampled in 1999.

5.0 References

Apex Companies, LLC (Apex), 2012. *2012 Annual Groundwater Monitoring Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon.* May 22, 2012.

Apex, 2013. *Groundwater Monitoring Work Plan Former Taylor Lumber Site, Sheridan, Oregon.* April 3, 2013.

CH2MHill, 2003. *Remedial Investigation Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon Volume I.* October, 2003.

U.S. Environmental Protection Agency (EPA), 2005. *Final Record of Decision Taylor Lumber and Treating Superfund Site, Sheridan, Oregon.* September 30, 2005.

EPA, 2010. *Long-term Groundwater Monitoring and Reporting Plan. Taylor Lumber and Treating Superfund Site.* March, 2010.

Table 1
Groundwater Monitoring Program
Taylor Lumber and Treating

Well I.D.	Wells to be Sampled	Water Level Measurments*
Outside Barrier Wall		
MW-1S	X	X
MW-6S	X	X
MW-6D	X	X
MW-12S	X	X
MW-13S	X	X
MW-15S	X	X
MW-16S	X	X
MW-19S	X	X
MW-20S	X	X
MW-25S	X	X
MW-103S	X	X
PZ-101	X	X
PZ-102	X	X
PZ-105	X	X
South of Highway 18B		
MW-9S	X	X
MW-10S	X	X
MW-24S	X	X
East of Rock Creek Road		
MW-11S	X	X
Residences**		
RW-01	X	
Extraction Wells Inside Barrier Wall		
PW-1		X
PW-02		X
PW-03		X
PW-04		X

Notes:

1. * = Indicates wells in which water level measurements will be collected.
2. ** = Residential addresses and contact information are as follows:

   RW- 01: 31100 West Valley Highway - Residential property owned by Bob Bowman - 503-843-2530

   MW-9S: Residential property owned by Robert and Patricia Harris - 503-472-8017

   MW-11S: Northwest Gazebo - George Gabriel owner - 503-843-0024

Table 2
Groundwater Elevation Results
Taylor Lumber and Treating

Well Number/ (Top of Casing Elevation)	Date of Measurement	Depth to Water (feet below top of casing)	Groundwater Elevation (feet)
Outside Barrier Wall			
MW-1S (207.41)	4/6/2015	3.29	204.12
MW-6S (204.39)	4/6/2015	2.45	201.94
MW-6D (204.04)	4/6/2015	2.78	201.26
MW-12S (204.49)	4/6/2015	2.89	201.60
MW-13S (204.92)	4/6/2015	3.24	201.68
MW-15S (204.68)	4/6/2015	2.36	202.32
MW-16S (205.19)	4/6/2015	2.59	202.60
MW-19S (210.44)	4/6/2015	6.03	204.41
MW-20S (208.87)	4/6/2015	5.76	203.11
MW-25S (208.74)	4/6/2015	6.28	202.46
MW-103S (207.62)	4/6/2015	3.68	203.94
PZ-101 (208.48)	4/6/2015	3.77	204.71
PZ-102 (204.02)	4/6/2015	3.78	200.24
PZ-105 (205.94)	4/6/2015	3.72	202.22
South of Highway 18B			
MW-9S (204.04)	4/6/2015	7.68	196.36
MW-10S (203.17)	4/6/2015	10.03	193.14
MW-24S (205.49)	4/6/2015	13.58	191.91
East of Rock Creek Road			
MW-11S (207.27)	4/6/2015	3.02	204.25
Extraction Wells Inside Barrier Wall			
PW-1 (203.93)	4/6/2015	6.48	197.45
PW-02 (204.96)	4/6/2015	8.71	196.25
PW-03 (206.3)	4/6/2015	10.43	195.87
PW-04 (206.98)	4/6/2015	11.46	195.52

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
Outside Barrier Wall		
MW-1S	5/1/1999*	--
	Feb-02	<25
	May-02	6.9
	Aug-02	14
	Nov-02	14
	Feb-03	6.0 J
	May-03	3.3
	4/27/2011	<0.33
	4/10/2012	<0.41 J4,J3
	4/9/2013	<0.31
	4/15/2014	<0.31
	4/7/2015	<0.31
MW-6S	May-99	<25
	Feb-02	0.82
	May-02	0.88
	Aug-02	1.0
	Nov-02	0.88 J
	Feb-03	--
	May-03	--
	4/26/2011	<0.33
	4/26/2011 DUP	<0.33
	4/10/2012	<0.41
	4/9/2013	<0.31
	4/15/2014	<0.31
	4/7/2015	<0.31
MW-6D	4/26/2011	<0.33
	4/10/2012	<0.41
	4/10/2012 DUP	<0.41
	4/9/2013	<0.31
	4/9/2013 DUP	<0.31
	4/15/2014	<0.31
	4/15/2014 DUP	<0.31
	4/6/2015	<0.31
	4/6/2015 DUP	<0.31
MW-12S	May-99	--
	Feb-02	0.32
	May-02	0.30
	Aug-02	0.45
	Nov-02	0.22 J
	Feb-03	--
	May-03	--
	4/26/2011	<0.33
	4/10/2012	<0.41
	4/9/2013	<0.31
	4/15/2014	<0.31
	4/7/2015	<0.31
MW-13S	May-99	--
	Feb-02	0.25
	May-02	0.25
	Aug-02	2.0
	Nov-02	2.6 J
	Feb-03	<0.32
	May-03	<0.56
	4/26/2011	<0.33
	4/10/2012	<0.41
	4/9/2013	<0.31
	4/15/2014	<0.31 J2
	4/6/2015	<0.31
MW-15S	May-99	--
	Feb-02	220
	May-02	220
	Aug-02	250
	Nov-02	210
	Feb-03	130
	May-03	190
	4/26/2011	12
	4/10/2012	15 J4,J3
	4/9/2013	18
	4/15/2014	13
	4/7/2015	12

Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
MW-16S	May-99	--
	Feb-02	10
	May-02	15
	Aug-02	28
	Nov-02	21 J
	Feb-03	11
	May-03	11
	4/26/2011	11
	4/26/2011 DUP	11
	4/10/2012	5.8
	4/10/2012 DUP	8.7
	4/9/2013	8.0
	4/9/2013 DUP	9.3
	4/15/2014	5.0
	4/15/2014 DUP	5.4
	4/7/2015	5.3
	4/7/2015 DUP	4.6
MW-19S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.067
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.061
	4/27/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31
	4/16/2014	<0.31
	4/8/2015	<0.31
MW-20S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.013 J
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.027 J
	4/27/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31
	4/16/2014	<0.31 J2
	4/8/2015	<0.31
MW-25S	12/19/2005	424
	12/19/2005 DUP	396
	4/27/2011	230
	4/11/2012	200
	4/10/2013	240
	4/15/2014	290
	4/7/2015	210
MW-103S	May-99	5.6
	Feb-02	6.4
	May-02	7.0
	Aug-02	12
	Nov-02	4.7 J
	Feb-03	5.0
	May-03	20
	4/27/2011	1.6
	4/11/2012	1.4
	4/10/2013	2.3
	4/16/2014	0.56 J
	4/7/2015	0.92 J
PZ-101	May-99	<25
	Feb-02	0.14
	May-02	0.15
	Aug-02	0.14
	Nov-02	1.1 J
	Feb-03	--
	May-03	0.067
	4/27/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31 J3,J2
	4/16/2014	<0.31
	4/8/2015	<0.31

Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
PZ-102	May-99	<25
	Feb-02	0.37
	May-02	0.30
	Aug-02	0.34
	Nov-02	0.13 J
	Feb-03	0.23 J
	May-03	<0.32
	4/27/2011	<0.33
	4/10/2012	<0.41
	4/9/2013	<0.31
	4/15/2014	<0.31
	4/8/2015	<0.31
PZ-105	May-99	82 J
	Feb-02	3.5
	May-02	8.2
	Aug-02	17
	Nov-02	4.0 J
	Feb-03	0.77
	May-03	2.6
	4/26/2011	<0.33
	4/10/2012	<0.41
	4/9/2013	1.6
	4/16/2014	<0.31
	4/8/2015	<0.31
South of Highway 18B		
MW-9S	May-99	<24
	Feb-02	<0.047
	May-02	<0.049
	Aug-02	<0.023
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	<0.046
	4/26/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31
	4/16/2014	<0.31
	4/8/2015	<0.31
MW-10S	May-99	<26
	Feb-02	0.099
	May-02	0.13
	Aug-02	0.38
	Nov-02	0.18 J
	Feb-03	<0.32
	May-03	0.13
	4/27/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31
	4/16/2014	<0.31
	4/8/2015	<0.31
MW-24S	4/27/2011	<0.33
	4/11/2012	<0.41 J4,J3
	4/10/2013	<0.31 J3
	4/16/2014	<0.31
	4/8/2015	<0.31
East of Rock Creek Road		
MW-11S	May-99	<25
	Feb-02	0.18
	May-02	0.18
	Aug-02	0.36
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.18
	4/27/2011	0.87 J
	4/11/2012	<0.41
	4/10/2013	<0.31 J3,J2
	4/15/2014	<0.31
	4/7/2015	<0.31

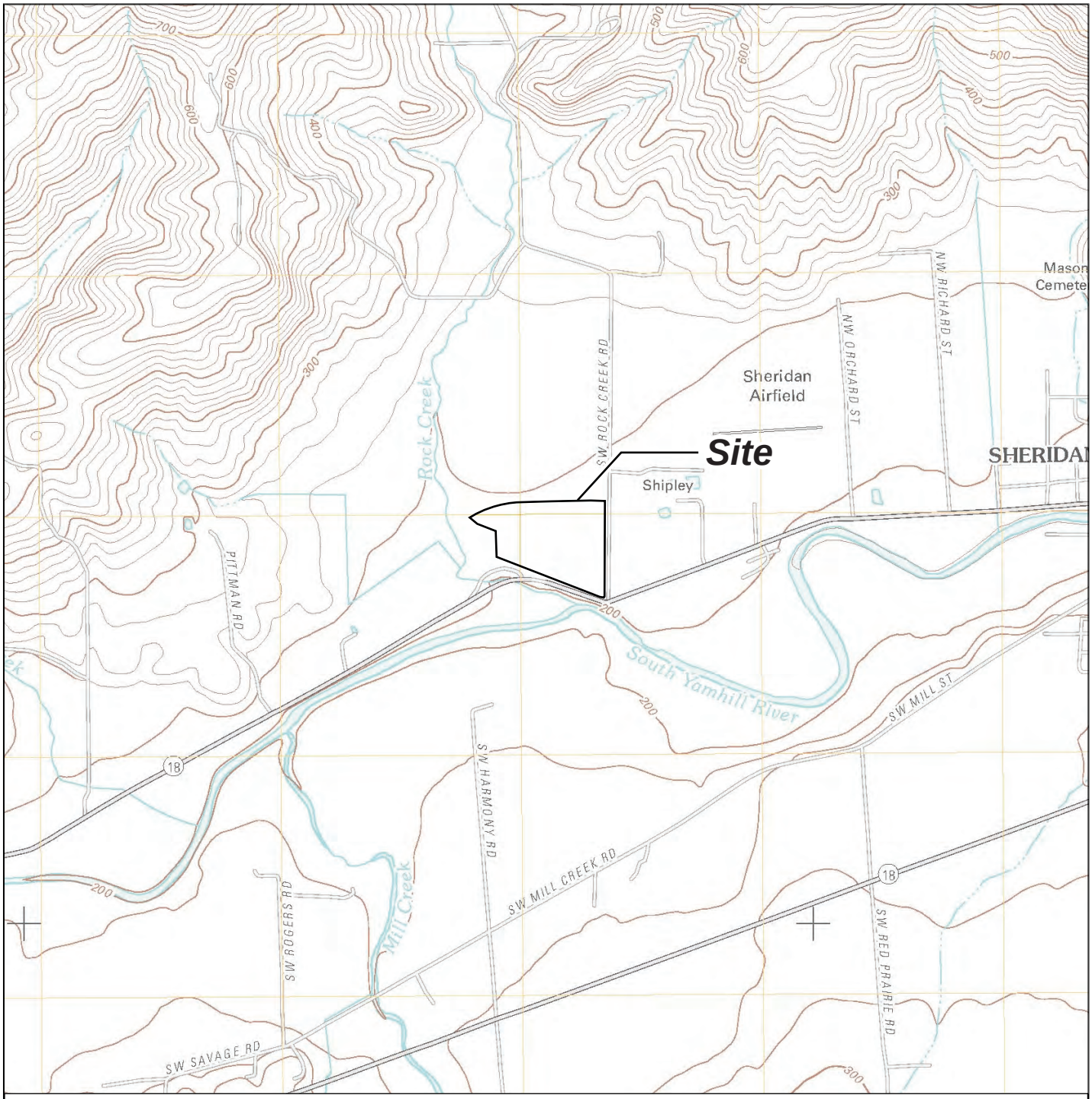
Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
Residences		
RW-01	May-99	<25
	Feb-02	<0.045
	May-02	<0.049
	Aug-02	<0.046
	Nov-02	<0.32
	Feb-03	<0.045
	May-03	<0.046
	4/27/2011	<0.33
	4/11/2012	<0.41
	4/10/2013	<0.31
	4/16/2014	<0.31
	4/8/2015	<0.31

Notes:

1. Sample dates for historical (pre-2005) data are not available; results available in month/year format only.
2. J = Detected value was below the lowest calibration point for the analysis; therefore, results are estimated.
3. J2 = Surrogate recoveries were outside control limits ; therefore, results are estimated.
3. J3 = The relative percent difference (RPD) is above the method limit.
4. J4 = The laboratory control sample or laboratory control sample duplicate is outside control limits.
5. -- = Not Sampled
6. **BOLD** indicates analyte detected above method reporting limit.
8. DUP = Duplicate sample.



Note: Base map prepared from USGS 7.5-minute quadrangle of Sheridan, OR, 2011 as provided by USGS.gov.

0 2,000 4,000

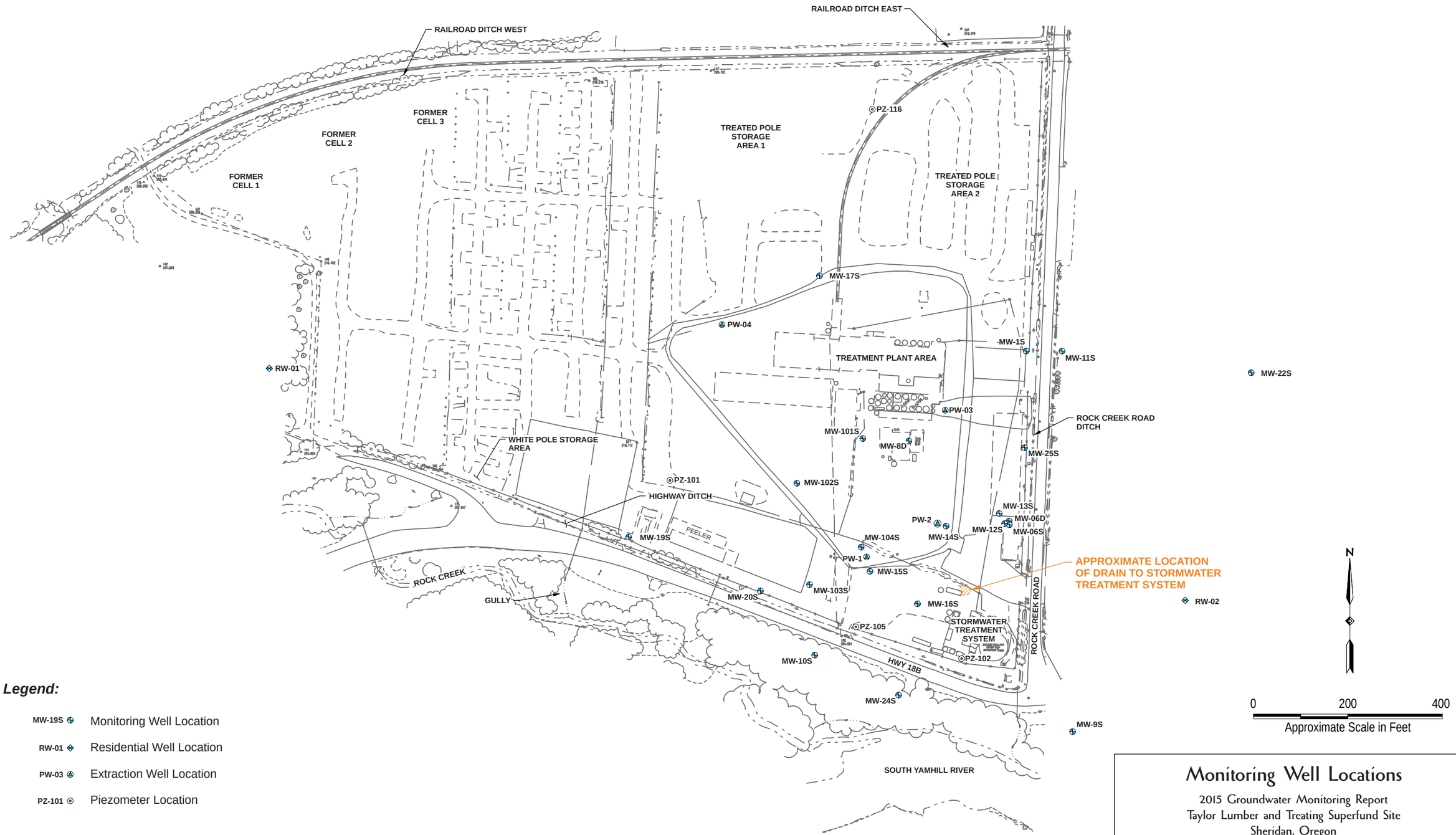
Approximate Scale in Feet

N

Site Location Map

2015 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

APEX	Apex Companies, LLC 3015 SW First Avenue Portland, Oregon 97201	Project Number 1843-01 May 2015	Figure 1



Legend:

MW-19S	Monitoring Well Location
RW-01	Residential Well Location
PW-03	Extraction Well Location
PZ-101	Piezometer Location

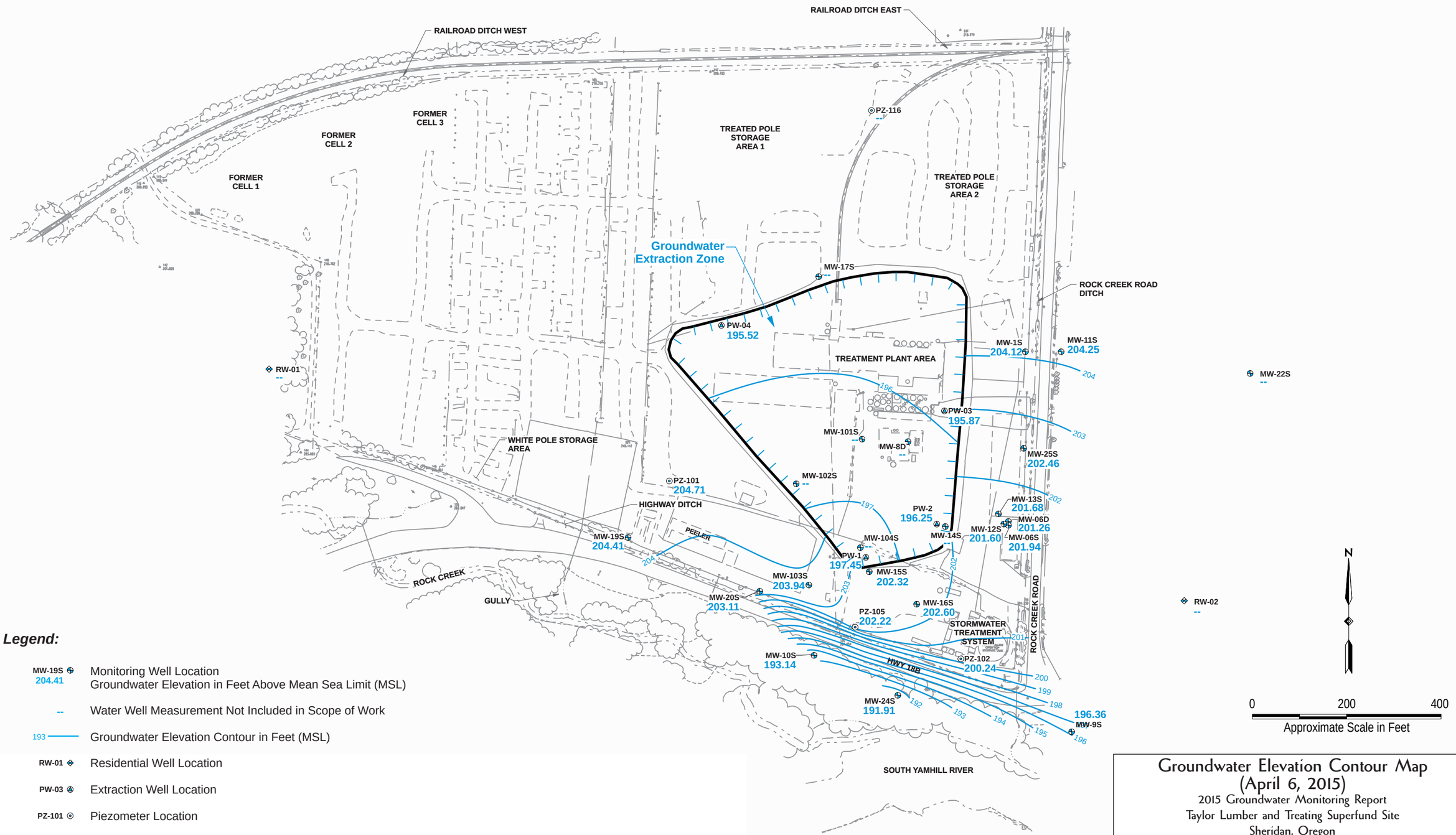
NOTE: Base map prepared from a CH2MHILL Monitor Well Plan (6/11/2009).

Monitoring Well Locations

2015 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1843-01	Figure
May 2015		2



Legend:

MW-19S 204.41	Monitoring Well Location Groundwater Elevation in Feet Above Mean Sea Limit (MSL)
--	Water Well Measurement Not Included in Scope of Work
193	Groundwater Elevation Contour in Feet (MSL)
RW-01	Residential Well Location
PW-03	Extraction Well Location
PZ-101	Piezometer Location
	Barrier Wall

NOTE: Base map prepared from a CH2MHILL Monitor Well Plan (6/11/2009).

Groundwater Elevation Contour Map (April 6, 2015)

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Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

APEX

Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

Project Number	1843-01	Figure
May 2015		3

RW-01	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-1S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-11S	
2011	0.87
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

PZ-101	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-25S	
2011	230
2012	200
2013	240
2014	290
2015	210

MW-13S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-6D	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31/<0.31*

MW-19S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-12S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-6S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-15S	
2011	12
2012	15
2013	18
2014	13
2015	12

MW-20S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-103S	
2011	1.6
2012	1.4
2013	2.3
2014	0.56
2015	0.92

MW-16S	
2011	11.0/11.0*
2012	5.8/8.7*
2013	8.0/9.3*
2014	5.0/5.4*
2015	5.3/4.6*

PZ-105	
2011	<0.33
2012	<0.41
2013	1.6
2014	<0.31
2015	<0.31

MW-10S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

PZ-102	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-24S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

MW-9S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

Legend:

MW-19S — Monitoring Well Location

RW-01 — Residential Well Location

PW-03 — Extraction Well Location

PZ-101 — Piezometer Location

MW-19S	
2011	<0.33
2012	<0.41
2013	<0.31
2014	<0.31
2015	<0.31

Location Identification

Pentachlorophenol (PCP) Concentration in µg/L
(-- = Not Sampled)

Sampling Date

NOTES:
1) Base map prepared from a CH2MHILL Monitor Well Plan (6/11/2009).
2) 2011 data collected from April 25, 2011.
3) 2012 data collected from April 10-11, 2012.
4) 2013 data collected from April 8-10, 2013.
5) 2014 data collected from April 14-16, 2014.
6) 2015 data collected from April 6-8, 2015.
7) Residential well (RW-02) is damaged and not in use, therefore, water was not sampled from this well.
8) * = Duplicate samples collected from wells MW-6D and MW-16S. Results are presented as "sample/duplicate".

Pentachlorophenol Concentrations in Groundwater (2011 through 2015)

2015 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

APEX
Apex Companies, LLC
3015 SW First Avenue
Portland, Oregon 97201

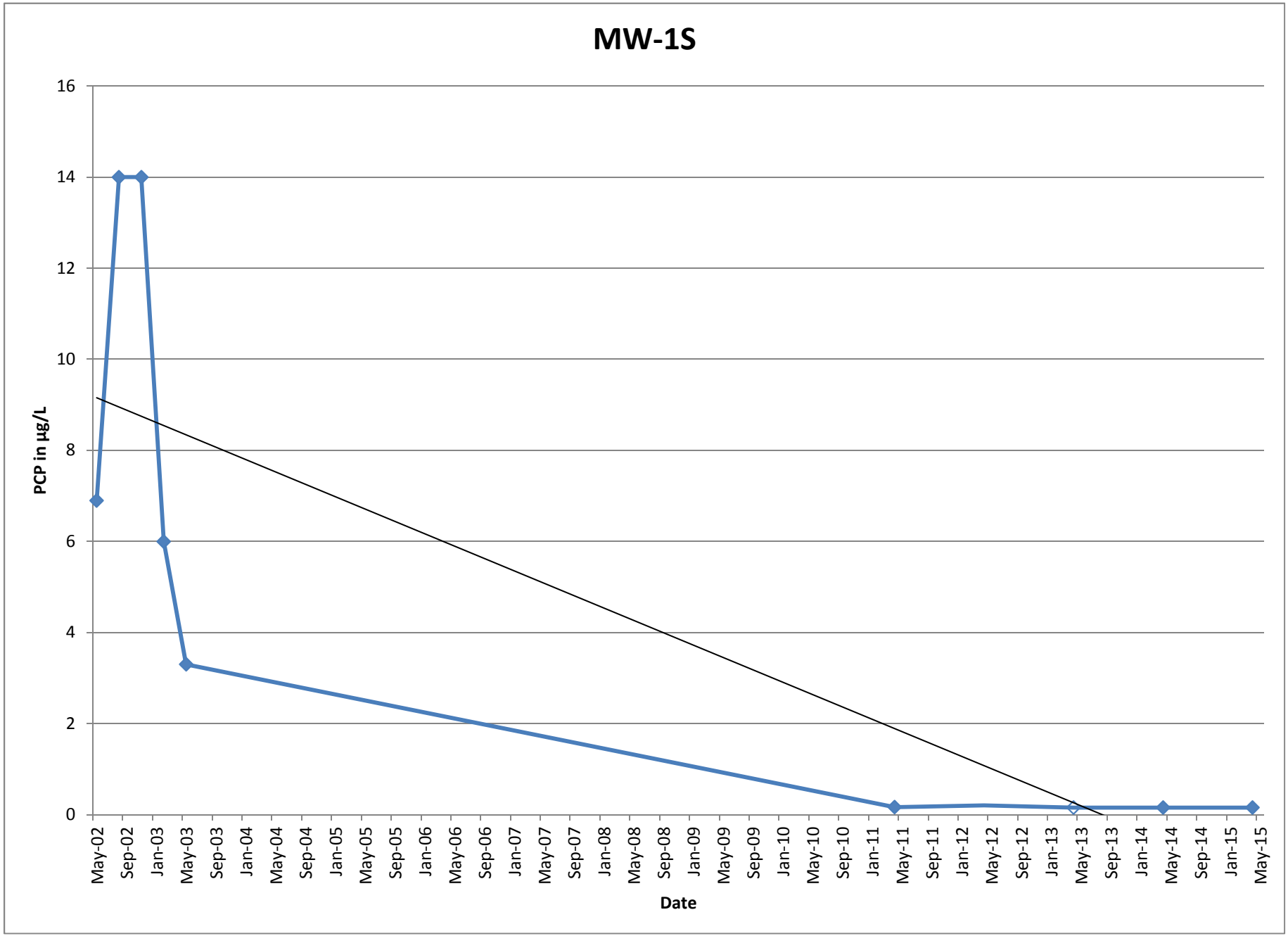
Project Number 1843-01

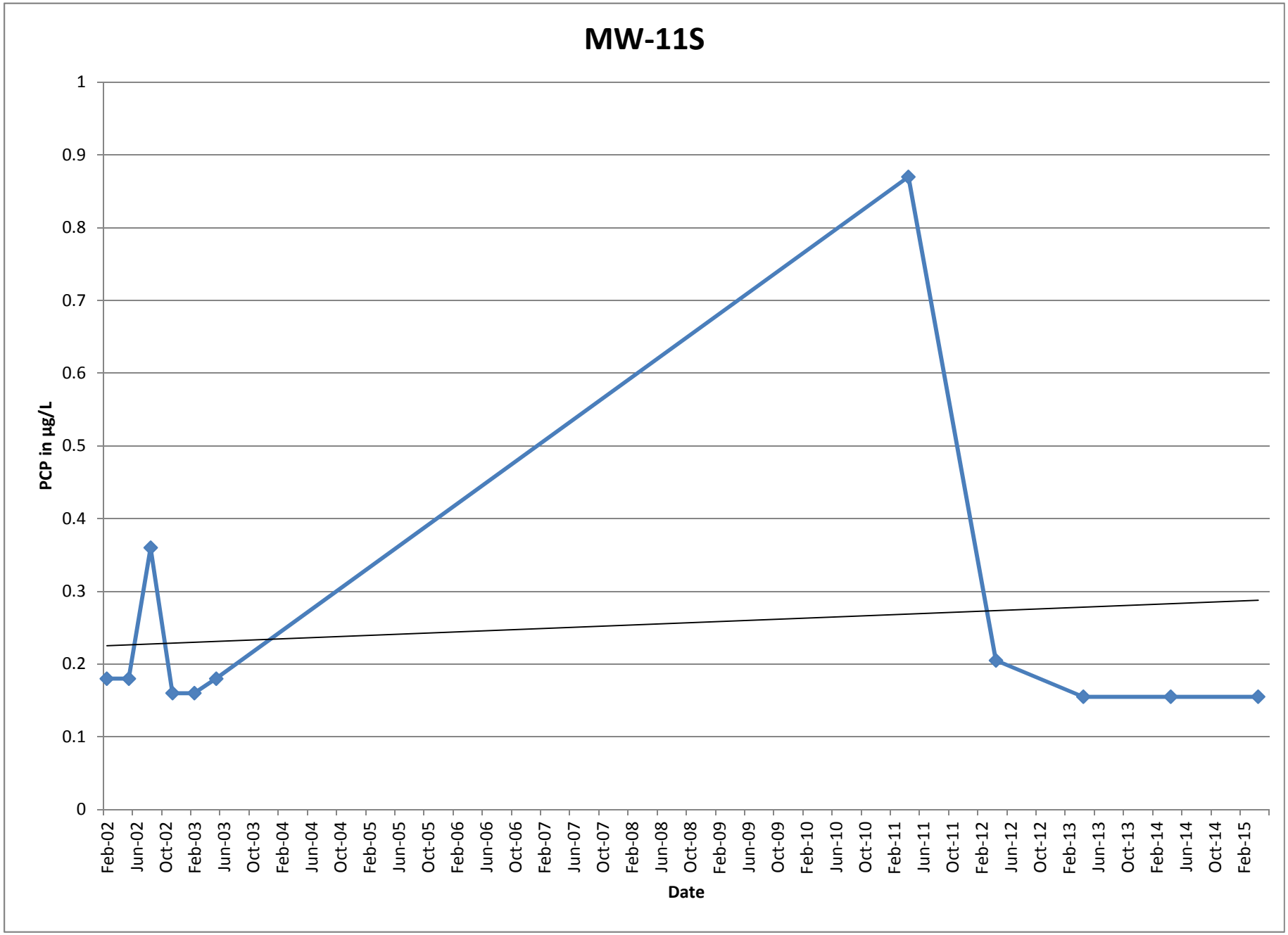
May 2015

Figure 4

Appendix D

Trend Plots for Select Wells


MW-1S
PCP in µg/L
16
14
12
10
8
6
4
2
0
May-02
Sep-02
Jan-03
May-03
Sep-03
Jan-04
May-04
Sep-04
Jan-05
May-05
Sep-05
Jan-06
May-06
Sep-06
Jan-07
May-07
Sep-07
Jan-08
May-08
Sep-08
Jan-09
May-09
Sep-09
Jan-10
May-10
Sep-10
Jan-11
May-11
Sep-11
Jan-12
May-12
Sep-12
Jan-13
May-13
Sep-13
Jan-14
May-14
Sep-14
Jan-15
May-15
Date


MW-11S
PCP in µg/L
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Feb-02
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Feb-06
Jun-06
Oct-06
Feb-07
Jun-07
Oct-07
Feb-08
Jun-08
Oct-08
Feb-09
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
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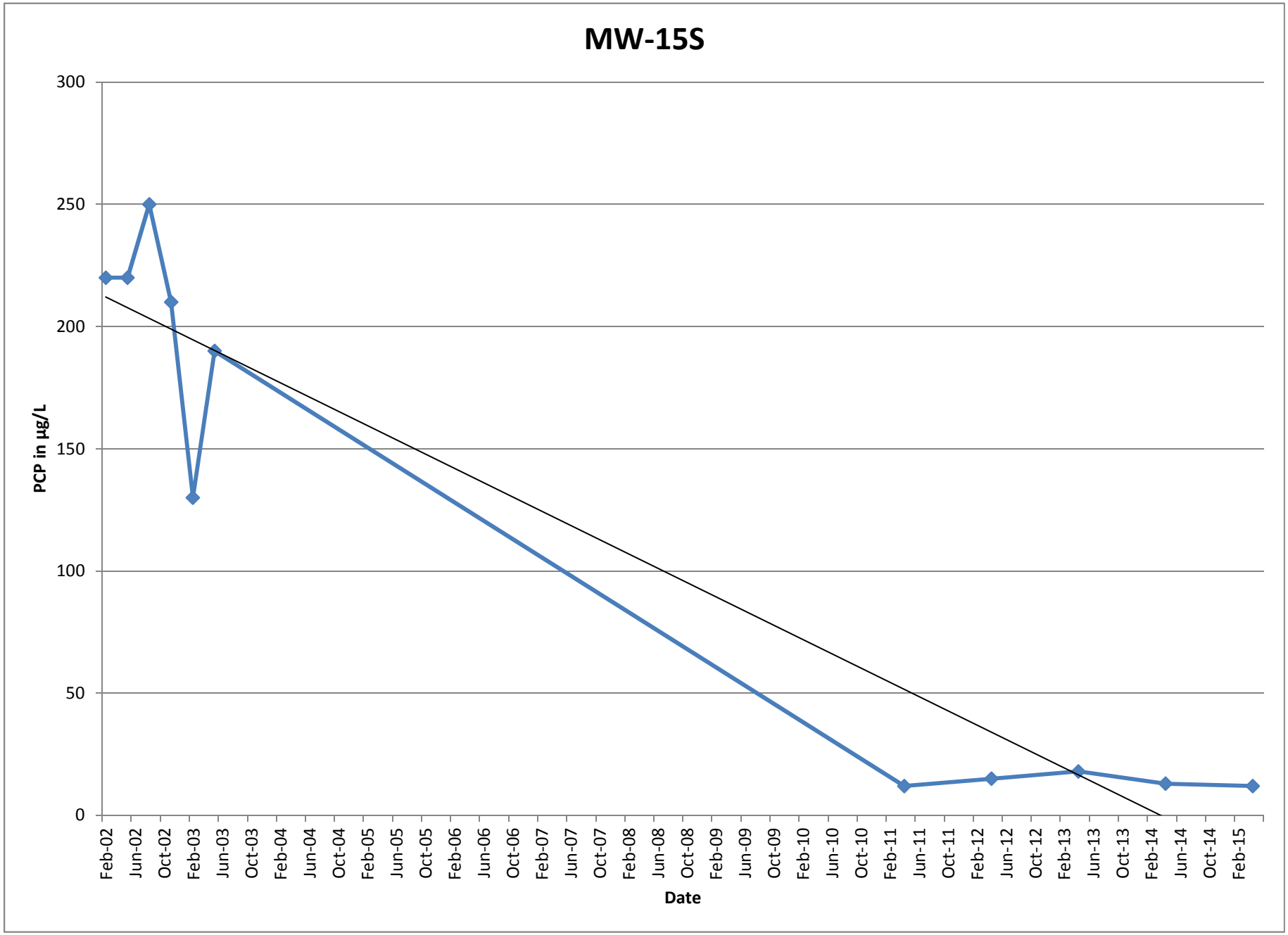
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Date


MW-15S
PCP in µg/L
300
250
200
150
100
50
0
Date
Feb-02
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Feb-06
Jun-06
Oct-06
Feb-07
Jun-07
Oct-07
Feb-08
Jun-08
Oct-08
Feb-09
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
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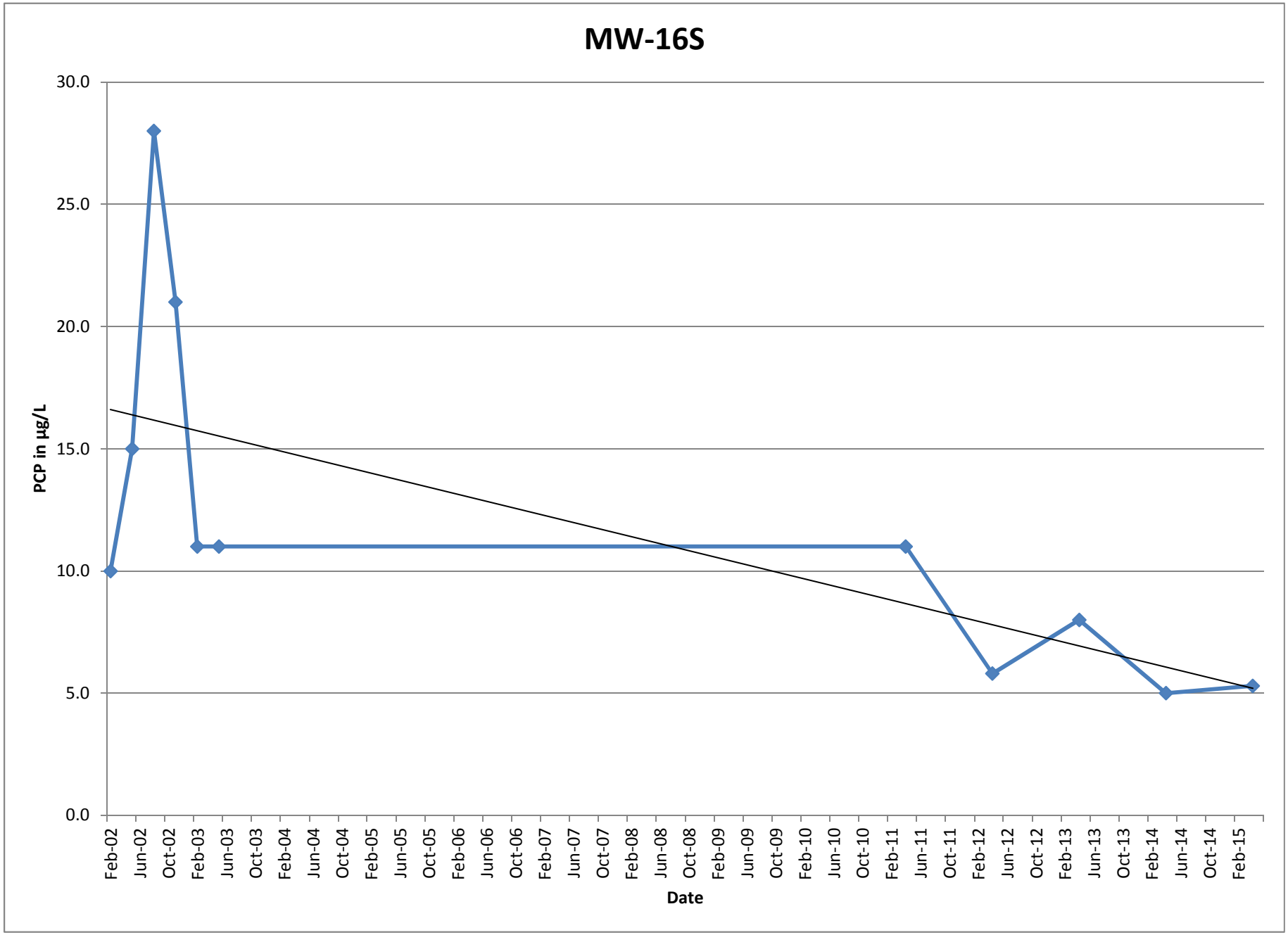
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15


MW-16S
30.0
25.0
20.0
15.0
10.0
5.0
0.0
PCP in µg/L
Feb-02
Jun-02
Oct-02
Feb-03
Jun-03
Oct-03
Feb-04
Jun-04
Oct-04
Feb-05
Jun-05
Oct-05
Feb-06
Jun-06
Oct-06
Feb-07
Jun-07
Oct-07
Feb-08
Jun-08
Oct-08
Feb-09
Jun-09
Oct-09
Feb-10
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
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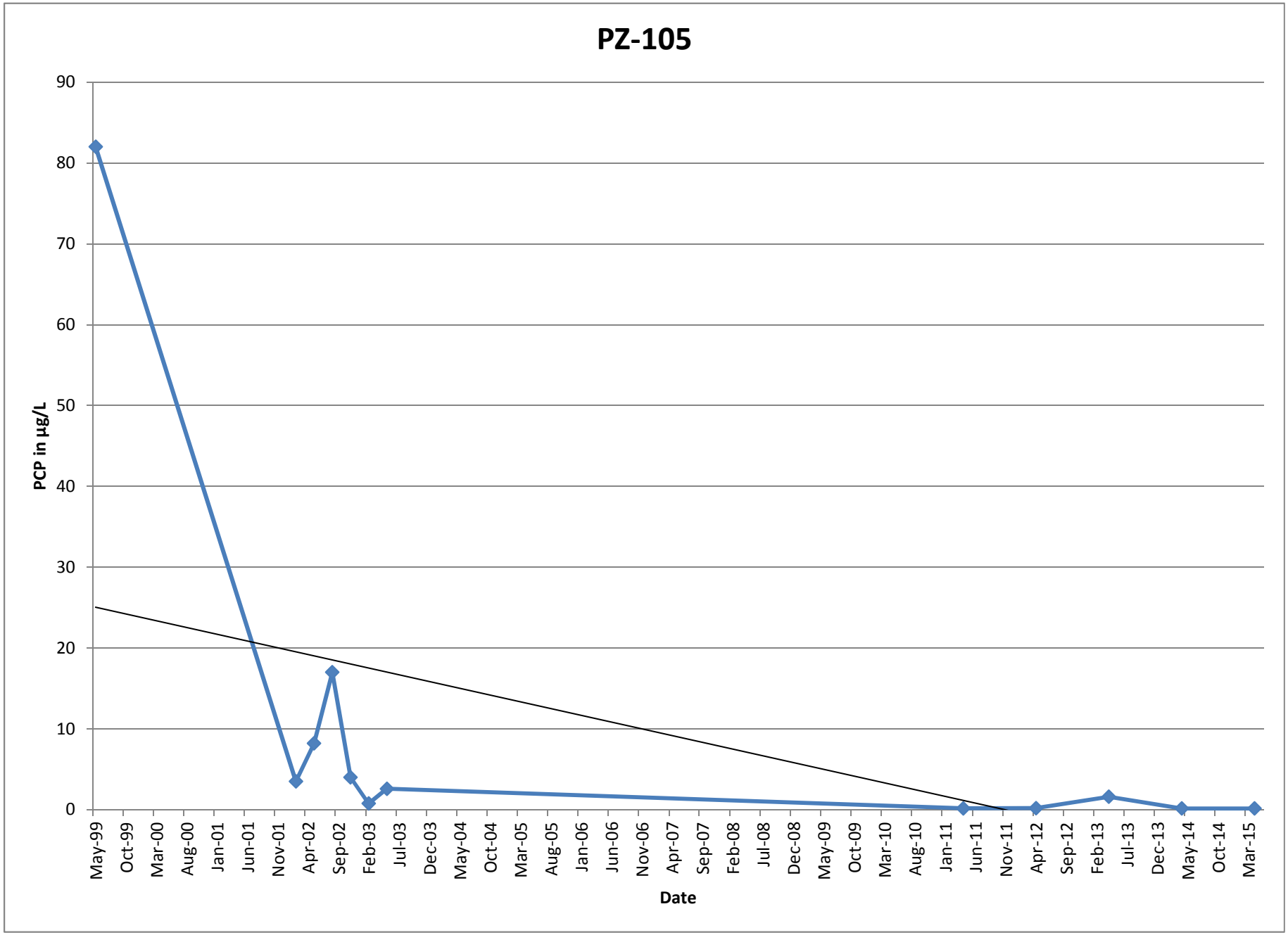
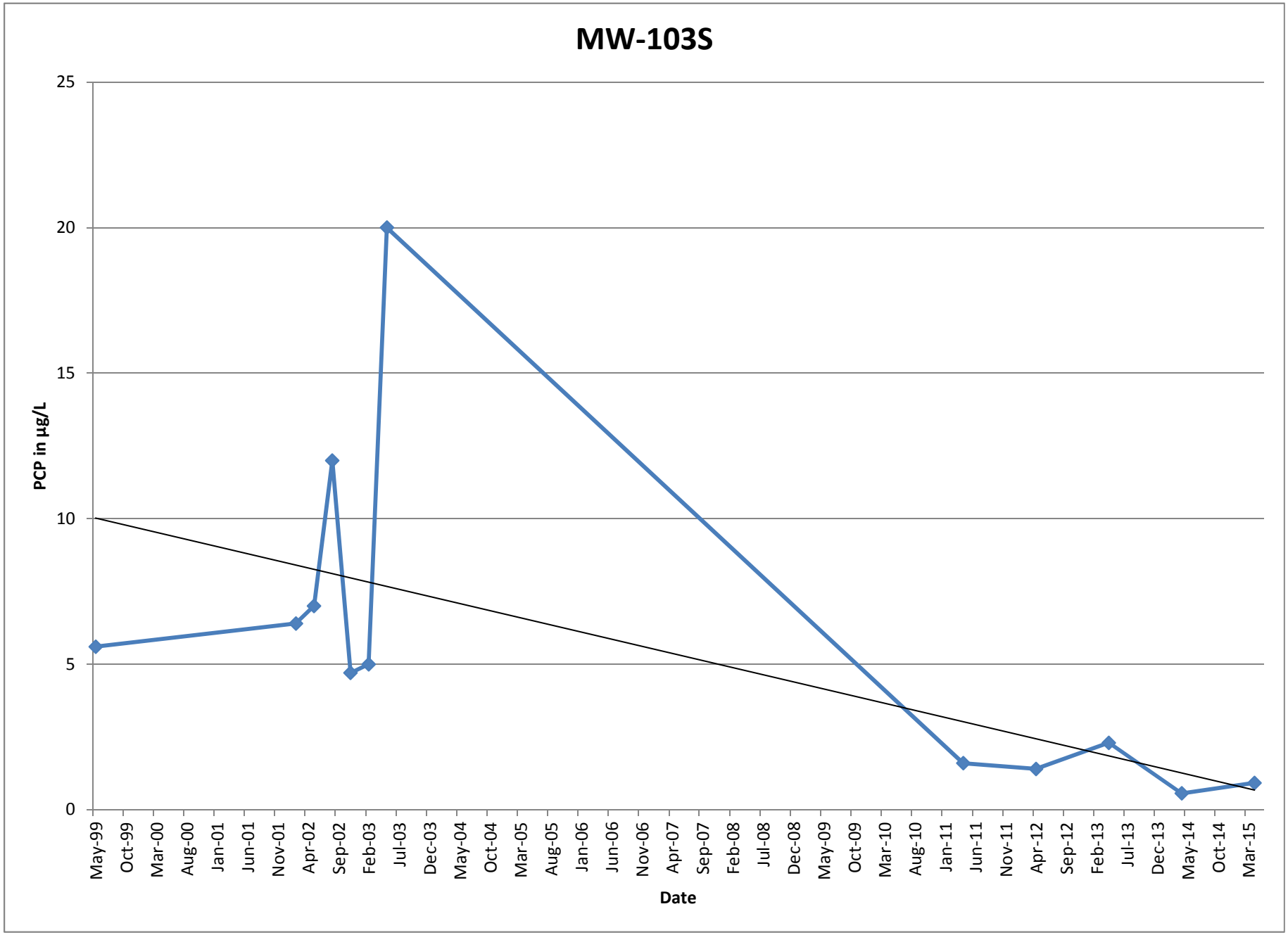
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
Oct-14
Feb-15
Date


PZ-105
PCP in µg/L
90
80
70
60
50
40
30
20
10
0
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Date


MW-103S
PCP in µg/L
25
20
15
10
5
0
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
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Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Date