Five-Year Review Report

Third Five-Year Review Report for the Idaho Pole Company Site

Bozeman,

Gallatin County, Montana

September, 2010

PREPARED BY:

U.S. Environmental Protection Agency
Region 8
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Date: 9/20/10

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Third Five-Year Review Report – 2010

Idaho Pole Company Site

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirements
BFEG	Barkfill Extraction Gallery
BFIG	Barkfill Injection Gallery
bgs	Below ground surface
BNSF	Burlington Northern Santa Fe
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CGA	Controlled Groundwater Area
CL	Confidence Level
COC	Contaminant of Concern
COV	Coefficient of Variance
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Difference
FS	Feasibility Study
ft MSL	Feet above mean sea level
GAC	Granular activated carbon
gpm	Gallons per minute
GPRA	Government Performance and Results Act
GWTS	Groundwater treatment system
HASP	Health and Safety Plan
I-90	Interstate 90
IC	Institutional Control
IPC	Idaho Pole Company
LTU	Land treatment unit
MDEQ	Montana Department of Environmental Quality
MCL	Maximum Contaminant Level
NAPL	Non-aqueous phase liquid
MBMG	Montana Bureau of Mines and Geology
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PAHs	Polynuclear aromatic hydrocarbons
PCP	Pentachlorophenol
PPEG	Pressure Plant Extraction Gallery
PPIG	Pressure Plant Injection gallery
ppb	Parts per billion
ppm	Parts per million

ppt	Parts per trillion
P&T	Pump and treat
PRG	Preliminary Remediation Goal
PRP	Potentially Responsible Party
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Responsible Party
RSE	Remediation System Evaluation
TCDD	2,3,7,8-tetrachlorophenol dibenzo-p-dioxin
TCDD-TEQ	Sum of toxicity equivalents for individual polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), expressed as concentration of 2,3,7,8-tetrachlorophenol dibenzo-p-dioxin (TCDD)
µg/L	Micrograms per liter
UAO	Unilateral Administrative Order
WQB	Water Quality Bulletin

Executive Summary

This represents the third five-year review of the remedial actions implemented at the Idaho Pole Company (IPC) Site located in Bozeman, Montana. The IPC site, which is associated with a previous wood treating facility, is located near the northern limits of Bozeman, Montana.

The second five-year review (September 2005) focused extensively on both the "soil component" and "groundwater component" of the remedy. The third five-year review presented herein focuses more on the "groundwater component" of the remedy; however, the soil remedy is discussed since waste is left in place on Site above levels that allow for unlimited use and unrestricted exposure. Discussion regarding the "soil component" of the remedy is limited to ongoing efforts since the last review.

One Operable Unit (OU01) was established for the Site that included both soil and groundwater components. This third five-year review has determined that the remedial actions at OU01 (OUs) are protective in the short term.. Several issues are identified where some follow-up action is needed before the Site is protective of human health and the environment in the long term.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Idaho Pole Company		
EPA ID *(from WasteLAN)*: MTD006232276		
Region: 8	**State: MT**	**City/County: Bozeman/Gallatin**

SITE STATUS	
NPL status: ☑Final ☐ Deleted ☐ Other (specify)	
Remediation status (choose all that apply): ☐ Under Construction ☑ Operating ☐ Complete	
Multiple OUs?* ☐ YES ☑ NO	**Construction completion date:** 03 / 26 / 1998
Has site been put into reuse? ☐ YES ☑ NO	

REVIEW STATUS	
Lead agency: ☑ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____	
Author name: Robert Greenwald/Doug Sutton	
Author title: Hydrogeologist/Engineer	**Author affiliation: Tetra Tech (GeoTrans)**
Review period: 10/25/2009 to 9/28/2010	
Date(s) of site inspection: 10/29/2009 to 10/30/2009	
Type of review: ☑ Statutory ☐ Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion	
Review number: ☐ 1 (first) ☐ 2 (second) ☑ 3 (third) ☐ Other (specify) _____	
Triggering action: ☐ Actual RA Onsite Construction at OU #____ ☐ Construction Completion ☐ Other (specify)	☐ Actual RA Start at OU#____ ☑ Previous Five-Year Review Report
Triggering action date *(from WasteLAN)*: 9/28/2005	
Due date *(five years after triggering action date)*: 09/28/2010	

* ["OU" refers to operable unit.]

Five-Year Review Summary Form, cont'd.

Issues:

1) All of Idaho Pole Company property south of I-90 (41.40 acres) was originally included within the Controlled Groundwater Area (CGA) boundary. It may be appropriate to remove some area south of I-90 from the CGA.

2) Plume delineation needs confirmation
   a. The down-gradient portion of the PCP plume could parallel Rocky Creek for some distance.
   b. Unexpected concentrations of PCP were observed at some deeper screened monitoring wells.
   c. The Remediation System Evaluation (RSE) also concluded that there may be a continuing source of dissolved PCP, causing the persistence of PCP impacts north of I-90.

3) Soil Institutional Controls are not in place.

Recommendations and Follow up Actions:

1) Evaluate the potential for reducing the extent of some portions of the CGA.

2) Update the Groundwater Conceptual Model.

3) File the proprietary Institutional Control with Gallatin County Clerk and Recorder and provide a signed copy to the Agencies

Five-Year Review Summary Form, cont'd.

Protectiveness Statement(s):

The five-year review of the remedial actions for OU01 at the Idaho Pole Company Site has resulted in the determination that the remedial actions are protective of human health and the environment in the short term. The Site needs proprietary ICs, further plume delineation, and a monitoring plan update before the Site is determined to be protective of human health and the environment in the long term.

Other Comments:

None.

Idaho Pole Company Site

Third Five-Year Review Report

I. Introduction

This documents EPA's third five-year review of the remedial actions implemented at the Idaho Pole Company (IPC) Site located in Bozeman, Montana. The purpose of this five-year review is to determine whether the remedy at a site remains protective of human health and the environment. The methods, findings, and conclusions of this review are documented in this Five-Year Review report. In addition, this Five-Year Review report identifies remedy issues, if any, and recommends means to address them.

This review is required by CERCLA §121 and the National Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) part 300. Section 121 of CERCLA states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

EPA interpreted this requirement further in the National Contingency Plan (NCP); 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The Five-Year Review report was prepared by Tetra Tech (including its subsidiary GeoTrans, Inc.) under contract to MDEQ. However, the lead agency for this five-year review is EPA Region 8. The site visit for the five-year review was conducted on October 29 to October 30, 2009, in conjunction with a Remediation System Evaluation (RSE). The RSE was conducted by Tetra Tech (including its subsidiary GeoTrans, Inc.) under contract to MDEQ, and the RSE provided useful information and analysis for this five-year review.

This review is required by statute because hazardous substances, pollutants, or contaminants are or will be left on site above levels that allow for unlimited use and unrestricted exposure. The triggering action for this third five-year review is the date of the previous (second) five-year review (September 2005), which focused on both the "soil component" and "groundwater component" of the remedy.

II. Site Chronology

Table 1: Chronology of Site Events

Date	Event
1978	Initial discovery of the problem
06/10/1986	NPL listing
09/28/1992	ROD signature
08/26/1993	Unilateral Administrative Order
09/08/1993	Remedial Design Start, Soils Component
09/08/1993	Remedial Design Start, Groundwater Component
06/29/1995	Remedial Design Completion, Soils Component
07/17/1995	Soils Remedy Start
05/21/1996	Explanation of Significant Differences
08/22/1996	Remedial Design Completion, Groundwater Component
08/23/1996	Groundwater Remedy Start
02/1997	Operation of groundwater treatment system began
03/26/1998	Construction Completion
11/27/1998	Explanation of Significant Differences
03/03/1999	Additional Remedial Design Start
06/08/1999	Additional Remedial Design Completion
10/21/1999	Additional Remedial Action Completed (Site remediation ongoing)
09/30/2000	First Five-Year Review
11/30/2001	Controlled Groundwater Use Area established
09/2002	Land Treatment Unit (LTU) decommissioned
03/04/2003	Remedial Action Completion (Soils Component)
09/30/2005	Second Five-Year Review
11/17/2009	Approval to shut off PPEG component of groundwater extraction
02/11/2010	Final Remediation System Evaluation Report
3/24/2010	Approval to modify groundwater monitoring
3/26/2010	Modification to performance monitoring for groundwater remedy

III. Background

Location

The Site is associated with a previous wood treating facility located near the northern limits of Bozeman, Montana and occupies approximately 50 acres in the east half of Section 6 and the west half of Section 5, Township 2S, Range 6E of Gallatin County (See Figure 1). The Site is bounded to the south by railroad tracks and to the north by Rocky Creek (which appears to represent the down-gradient limit of historical groundwater impacts). The Site is bisected by Interstate 90 (I-90).

Wood treating infrastructure was historically located south of I-90, though soil and groundwater have been contaminated both north and south of I-90. All former wood-treating infrastructure was dismantled in 1999. Contaminated groundwater flows to the northeast towards Rocky Creek. Rocky Creek, which is located north of I-90, also receives water from Mill Creek (located south of I-90) through a culvert that runs below I-90 in the eastern portion of the Site. Further downstream (northwest of the Site) Rocky Creek combines with Bozeman Creek (which is located west of the Site) to form the East Gallatin River.

Current and Future Land Use Near the Site

In carrying out Superfund response actions, EPA typically considers the reasonably anticipated future land use of a site in the remedy selection process.[1]

Buildings currently on the former wood treating property south of I-90 include the treatment building associated with the groundwater treatment system, a yard office building and an office building owned by IPC (not currently occupied). Property north of I-90 that is part of the Site or near the Site includes residences, pasture, and a power substation operated by Northwestern Energy, which was constructed in the 1970s. As illustrated in Figure 1, some of the property north of I-90 is owned by IPC including the "Pasture Area" and two previous residences where groundwater wells were historically contaminated.

The existing zoning for the portion of the Site south of I-90 is manufacturing, and the planned future land use for the portion of the Site south of I-90 is industrial. Figures illustrating existing zoning and planned future land use, obtained from the City of Bozeman GIS Department, are included in Attachment 6. The map of existing zoning in Attachment 6 excludes a portion of the area north of I-90 because that area is not currently within the Bozeman city limits. Residences where groundwater is currently sampled as part of the groundwater remedy are located in this area (i.e., these residences are not within the Bozeman city limits). The "Pasture Area" that is currently owned by IPC is zoned as manufacturing. Planned future land use north of I-90 includes industrial use for the "Pasture Area" currently owned by IPC and the adjacent substation owned by Northwestern Energy, and residential use for the remaining area between I-90 and Rocky Creek that is in the immediate area of the Site.

[1] See EPA's 1995 Directive, "Land Use in the CERCLA Remedy Selection Process" (OSWER 9355.7-04).

Brief History of Facility Operations

This former wood treating facility began operations in 1945 using creosote as a preservative. Creosote was replaced with pentachlorophenol (PCP) in carrier oil in 1952. The interstate highway dividing the property was constructed between 1967 and 1969, while wood treating operations were ongoing. There were ditches present during Site operations (illustrated on Figure 2), such as along L Street, along Cedar Street, and near the substation. These ditches ultimately discharged north of I-90. An oily discharge was noted by MDEQ in ditches near the Site and near Rocky Creek in 1978. The facility was closed in 1997. EPA's Record of Decision (ROD) also indicated that surface soil in the Pasture Area north of I-90 was contaminated by shallow groundwater transporting wood-treating fluid upward to the ground surface during high water table years. The remedial investigation (RI) provides a more extensive discussion of Site history and potential sources of contamination (March 1992).

Hydrogeologic Setting

The composition of the subsurface at the Site is relatively complex. According to the ROD, there are several delineated stratigraphic horizons at the Site, including a surficial clay horizon, an intermediate silt horizon at 25 feet below ground surface (bgs), a silty clay horizon at 35 feet bgs, and another silty clay horizon at 50 feet bgs. Intervening aquifers are composed of transmissive sands and gravels, through which groundwater can travel horizontally. The ROD states that the horizons are of variable thickness and permeability, and are generally continuous (but probably not continuous over the entire Site). Most of the monitoring locations consist of clustered wells screened at different depth intervals to address the presence of different horizons. Most clustered wells are classified as "A" (shallower), "B" (intermediate) or "C" (deeper).

The RI concluded that there was some hydraulic connection between these different horizons based on hydraulic testing results. Groundwater contamination has been detected in all three horizons, further suggesting that the silty clay layers are not continuous and/or are not sufficiently tight to prevent vertical contaminant migration.

Groundwater elevation at the Site is generally within 12 feet of ground surface. During periods with high recharge, water levels reportedly reach ground surface. Potentiometric surface maps in recent reports have been developed using water level measurements at shallow wells, and these maps illustrate that groundwater consistently flows to the northeast throughout the year. A water level map for the Site (produced by Hydrometrics, Inc.) for September 2009 is presented in Figure 3. Water levels are typically highest in the spring, but the general groundwater flow pattern is similar throughout the year. The RSE report (Tetra Tech, February 2010) noted that water levels only are measured at the shallowest well at each well cluster, and that this does not allow for determination of where groundwater flow direction is upward and where it is downward.

Based on the Final Design Report for the Groundwater Remedy by Geraghty & Miller, pump testing conducted at one of the wells in the BFEG indicated a transmissivity of approximately 23,000 gpd/ft (which translates to 3,075 ft^2/d). Assuming sands and gravels comprise an approximate thickness of approximately 20 ft, the associated hydraulic conductivity of the sands and gravels would be approximately 150 ft/d.

The RSE report provided the following calculation of groundwater velocity, using approximate values of 0.011 for hydraulic gradient (based on water level maps) and 0.2 for porosity (estimate for sand):

$$V = ki/n = 150 \text{ ft/d} * 0.011 / 0.2 = 8.25 \text{ ft/d} * 365 \text{ d/yr} = \sim 3000 \text{ ft/yr}$$

This is an extremely fast groundwater velocity. The distance from the source of contaminants to the approximate historical plume extent (i.e., Rocky Creek north of I-90) is less than 2000 ft. Thus, groundwater travel time from the source areas to Rocky Creek is expected to be less than one year (though contaminant transport is expected to be slower due to retardation).

Site Contaminants

The contaminants of concern (COCs) at the Site are pentachlorophenol (PCP), polynuclear aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. The primary groundwater COC treated by the remedy is PCP, with sporadic detections of PAHs that appear to be limited to the source area of the plume.

Initial Response and Enforcement History

In 1978, the Montana Department of Fish, Wildlife and Parks notified the MDEQ of a suspected release of oily wood treating fluid from the facility. MDEQ found evidence of a release in ditches near the facility and near Rocky Creek. Consequently, MDEQ issued a compliance order on September 29, 1978, notifying IPC of statutory violations and directing the company to stop uncontrolled releases and to clean up spilled treating fluid. To slow or eliminate movement of the oily wood treating fluid through ground and surface water and into private wells, IPC installed and operated an interceptor drain with a sump and an interceptor trench adjacent to I-90. Absorbent pads were used in the culverts and ditches to intercept and collect oily wood treating fluid. Culverts under I-90 were dammed to prevent runoff of contaminated surface water to Rocky Creek.

In 1984, IPC conducted a remedial investigation without MDEQ or EPA oversight to identify the sources and extent of contamination at the Site. IPC drilled monitoring wells to collect groundwater samples and also collected soil and surface water samples. MDEQ and EPA concluded that IPC's remedial investigation was not sufficient to identify contaminant sources and to characterize the nature and extent of contamination.

EPA proposed the Site for the National Priorities List in 1984, and the listing was final in 1986, making the Site eligible for federal funds for enforcement, investigation and remediation. In 1989,

MDEQ assumed the lead agency role through a cooperative agreement with EPA and began the Remedial Investigation and Feasibility Study (RI/FS) following the EPA approved Work Plan and EPA guidance.

EPA issued general notice letters and information requests to the potentially responsible parties (PRPs) in February 1988. The PRPs were Idaho Pole Company (IPC) and Burlington Northern Santa Fe (BNSF). The PRPs responded with general information about their activities at the Site: IPC described treatment plant operations and BN outlined historic railroad and roundhouse activities. In June 1988, EPA issued special notice letters to IPC and BNSF to initiate RI/FS negotiations between the PRPs, EPA and MDEQ. Issuance of the special notice letters triggered a 60-day moratorium during which EPA would take no action to proceed with the RI/FS. Both PRPs responded with good faith offers to conduct the RI/FS and the moratorium was extended an additional 30 days. IPC prepared a draft RI/FS Work Plan and offered comments on EPA's draft Administrative Order on Consent. BNSF assumed a secondary role in the negotiations. Negotiations ended unsuccessfully in January 1989. In March 1989, MDEQ requested and received the lead agency role for a Fund-financed RI/FS for the Site.

EPA's selected remedy for the Site was documented in a ROD dated September 28, 1992. EPA then initiated negotiations with the PRPs for implementation of the remedy, including Remedial Design (RD) and Remedial Action (RA). These subsequent negotiations were unsuccessful and EPA issued a Unilateral Administrative Order (UAO) on August 26, 1993, requiring that the PRPs implement the RD/RA process. EPA became the lead oversight Agency for the PRP lead RD/RA at that time.

IV. Remedial Actions

Remedy Objectives and Cleanup Levels

The ROD, which was signed in 1992, established one Operable Unit (OU) that included both soil and groundwater remediation. The ROD did not expressly identify "Remedial Action Objectives", but those objectives can be discerned from the text. For instance, the "Cleanup Levels" section of the ROD indicates the following:

> *The purpose of this response action is to control risks posed by direct contact, ingestion and inhalation of soils and groundwater and to minimize migration of contaminants to ground and surface water and air[2]. Concentrations of contaminants in sediments, soils and groundwater remaining after Site cleanup will correspond to lifetime cancer risks within the acceptable range of 1 x 10[-4] to 1 x 10[-6]. The cleanup levels for compounds having noncarcinogenic effects will result in a collective health hazard index below 1.0. Since no federal or state chemical specific applicable or relevant and appropriate requirements (ARARs) exist for soil or sediments, soil cleanup levels were determined through site*

[2] Evaluated with respect to inhalation of air entrained soil particles as part of the soil remedy.

specific risk analysis. Groundwater cleanup levels were established at the final MCL for pentachlorophenol, benzo(a)pyrene and 2, 3, 7, 8 - TCDD(dioxin) and at proposed MCLs for other carcinogenic PAHs.

Cleanup Levels

Table 13 of the ROD set forth Site cleanup levels for soil and groundwater, which are presented in Table 2, below. "B2 PAHs" refer to PAHs that are probable carcinogens, and "Total D PAHs" refer to PAHs that are not classifiable with respect to cancer impacts

Table 2: Cleanup Levels From Table 13 of the ROD

	Constituent	Cleanup Level	Basis
Soil and Sediments (mg/kg)	PCP	48	Risk
	Total B2 PAHs	15	Risk
	Total D PAHs	145	Hazard quotient
	TCDD TE*	0.001	Risk
Groundwater (ug/l)	PCP	1.0	MCL
	B2 PAHs:		
	Benzo(a)pyrene	0.2	MCL
	Benz(a)anthracene	0.1	Proposed MCL
	Benzo(b)fluoranthene	0.2	Proposed MCL
	Benzo(k)fluoranthene	0.2	Proposed MCL
	Chrysene	0.2	Proposed MCL
	Dibenz(a,h)anthracene	0.3	Proposed MCL
	Indeno(1,2,3-CD)pyrene	0.4	Proposed MCL
	D PAHs	146	Hazard quotient
	2,3,7,8-TCDD (Dioxin)	3.0×10^{-5}	MCL

**refers to sum of toxicity equivalents for individual polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), expressed as concentration of 2,3,7,8-tetrachlorophenol dibenzo-p-dioxin (TCDD)*

Summary of Remedy Selected in the 1992 ROD

The selected remedy included components for soil and groundwater treatment, plus institutional controls (ICs), as described below:

- Soil components of the remedy selected in the ROD included:
    - Excavation and surface land biological treatment of approximately 19,000 cubic yards of contaminated soils from: 1) the pasture area north of I-90; 2) the area between Cedar Street and I-90; and 3) the former roundhouse area (the location of the former roundhouse is illustrated on Figure 2)

- Hot water and steam flushing of soils underlying the pole plant facility and I-90 in order to recover hazardous substances
- Separation and disposal of oily wood treating fluid extracted from soils
- Closure of onsite treatment units in compliance with RCRA Subtitle C

- Groundwater components of the remedy selected in the ROD included:
  - Groundwater cleanup using groundwater extraction wells, biological treatment, and return of treated water to the aquifer to enhance in situ biological degradation and to control potential migration of contaminants (groundwater cleanup was estimated to take 10 to 15 years)
  - Treatment of contaminated residential wells exceeding maximum contaminant levels (MCLs) or risk based concentrations, at the point of distribution, in addition to institutional controls preventing new access to contaminated groundwater
  - Continued residential and groundwater monitoring

- ICs identified in the "Institutional Controls" section of the ROD included:
  - Fencing and posting of areas where active remediation is occurring to prevent unauthorized access to contaminated media or to remedial action areas[3]
  - Prevention of domestic or commercial water well drilling in the contaminated groundwater plume area to prevent additional receptors of contaminated groundwater or an expansion of the plume

    Land use and deed restrictions for the closed land treatment units to preserve the integrity of the closed land treatment units

ESDs (1996 and 1998)

There have been two ESDs amending the remedy selected in the 1992 ROD:

- An ESD in 1996 included the following elements:
  - Removed the hot water and steam flushing component of the soil remedy

[3] Fences that restrict access to the Site are often included in the term Institutional Controls. Because fences are physical barriers instead of administrative or legal measures, EPA does not consider them to be ICs. Guidance issued by EPA after the issuance of the ROD has specified that fences are considered engineering controls and not ICs.

- Clarified the areas of soil contamination to be excavated
- Clarified how the land treatment unit (LTU) for soils would be dismantled (eliminating the need for the RCRA cap specified in the ROD)
- Described how treated soils would be disposed of on-Site (including the isolation of any such soils containing dioxins/furans above ROD cleanup levels from groundwater and from direct contact)
- Changed the groundwater treatment process from biological treatment to granular activated carbon (GAC)
- Indicated that a first phase of the groundwater remedy would include the extraction and treatment of groundwater on the south side of I-90 in the barkfill and pressure plant areas, plus in-situ treatment of the dissolved plume (i.e., downgradient of these extraction wells) by injection of treated groundwater…a second phase would include modifications as necessary to achieve ROD goals, based on results of the first phase
- Identified that ambient temperature water would be used for flushing the area beneath I-90, rather than hot water or steam

A second ESD was issued in 1998 after active wood treating operations were terminated in 1997, allowing areas that had previously been considered inaccessible for soil remediation to now be remediated. This ESD specified that contaminated soils from all such areas be excavated and treated.

Remedy Implementation and Status – Soil and Sediments

Prior to 2002, contaminated soil was excavated and treated at the LTU which was constructed on-Site. The LTU was dismantled in 2002. Significant details about the active LTU soil remedy were provided in the Remedial Action completion report and the second five-year review (September 2005).

Treated soil disposed of on-Site contains dioxin above the soil cleanup standards identified in the ROD. Dioxin compounds adhere tightly to soil particles and do not readily migrate or leach into groundwater or surface water. The treated soil was placed above historic high groundwater levels and was covered with 12 to 18 inches of clean soil to prevent direct human contact with treated soils. This soil remedy is considered complete, and the Site team is working to finalize proprietary institutional controls (discussed later in this section under "Institutional Controls") for areas where treated soils have been placed. Once these proprietary institutional controls are in place, EPA can make a Site-wide Ready for Anticipated Reuse performance measure determination and the soils portion of Site is expected to be deleted from the National Priorities List.

Remedy Implementation and Status – Groundwater

"Phase 1" of the groundwater remedy began in February 1997. Pursuant to the 1996 ESD, "Phase 1" extracted and treated groundwater on the south side of I-90 in the barkfill and pressure plant areas. It also provided in-situ treatment of dissolved contaminants in the groundwater plume (downgradient of these extraction wells) by re-injection of treated groundwater. More specifically, Phase 1 of the groundwater treatment operations consisted of two lines of extraction wells and two lines of injection wells, all located on the south side (i.e., the upgradient side) of I-90 (see Figure 1 for locations):

- The southernmost line of five extraction wells, referred to as the "pressure plant extraction gallery" (PPEG), is located just downgradient of the pressure plant associated with previous wood treating operations. The "pressure plant injection gallery" (PPIG) was installed just south (i.e., upgradient) of the PPEG.

- The northernmost line of five extraction wells, referred to as the "barkfill extraction gallery" (BFEG), is located closer to I-90. The "barkfill injection gallery" (BFIG) was installed just north (i.e., downgradient) of the BFEG.

Treated water was re-injected into the aquifer to promote flushing and in-situ bioremediation of contaminants. The 1996 ESD indicated that a second phase of the groundwater remedy would include modifications of this remedy as necessary to achieve ROD goals, based on results of the first phase.

"Phase 2" began in late 2009 and early 2010, when a series of modifications to the groundwater remedy were implemented based on the results of "Phase 1." These modifications resulted from discussions during the 2007 long-term monitoring optimization Site visit, the 2009 RSE Site visit and subsequent optimization recommendations in the Groundwater Monitoring Optimization Report (GSI Environmental, May 2009) and the RSE report. These modifications include discontinuation of extraction from the PPEG, increased extraction at the BFEG, and changes to the groundwater monitoring and performance monitoring programs. The modifications are described more fully in the following letters:

- Approval letter regarding *Request for Shutdown of Pressure Plant Extraction Wells* (EPA Region 8 and MDEQ), November 17, 2009

- Approval letter regarding *Request for Modifications to Groundwater Monitoring* (EPA Region 8 and MDEQ), March 24, 2010

- Letter regarding *Performance Monitoring Requirements for the Groundwater Extraction/Injection System Modifications* (EPA Region 8 and MDEQ), March 26, 2010

These letters are included as Attachment 2.

An additional component of the groundwater remedy is an oil recovery interceptor trench located on the north side (i.e., the downgradient side) of I-90. Oily material seeps into this trench, depending on groundwater elevations, and is removed with absorbent pads that are disposed of in drums on a daily to weekly basis. This oily material is likely diesel, or similar oil, that was used as carrier oil during facility operations and likely comes from contaminated soils beneath the interstate highway, which could not be excavated during the soil remedy. It is unclear if this oily material represents a continuing source of dissolved PCP contamination in groundwater. It is possible that the reinjection of treated water upgradient of this trench augments the collection of the oily material within the trench.

The recently completed RSE noted some ambiguity about the specific area where groundwater cleanup levels are to be achieved. In several places the ROD appears to state that the objective is to attain cleanup goals in an "attainment area" north of I-90, rather than over the entire Site, but "attainment area" is not clearly defined. Examples of such statements, extracted from the ROD text, include the following:

- "Reduction of contaminant levels in groundwater within the attainment area to cleanup levels identified in Table 13; the attainment area is the contaminated groundwater aquifer bounded by Rocky Creek, Bozeman Creek and I-90" (from "Performance Standards" section of ROD).

- "For groundwater, compliance with remediation levels must be achieved throughout the contaminated groundwater plume, located downgradient of I-90, extending to Rocky Creek" (from the "Points of Compliance" section of the ROD).

It is not clear whether the ROD attempted to differentiate cleanup objectives for groundwater north of I-90 versus south of I-90. The two subsequent ESDs do not provide any further clarification of this issue.

Remedy Implementation and Status – Institutional Controls (ICs)

ICs Related to Soils

EPA is working to finalize proprietary ICs for IPC property on both sides of I-90, including the approximately four-acre area where treated soil was placed on Site, since that is considered a restricted use area (see Attachment 8). The Idaho Pole Company is expected to file a Notice of Institutional Controls with the Gallatin County Clerk and Recorder in 2010 that certifies completion of the soil component of the remedy and establishes permanent land use restrictions for certain portions of the facility property. The intent of the land use restrictions is to ensure the permanent preservation and maintenance of remedial structures, including the Treated Soil Area cover, that are required to minimize potential for human exposure to contaminated soil and to protect the integrity of the remedy.

ICs Related to Groundwater

A Controlled Groundwater Use Area (CGA) designation was issued by the Montana Division of Natural Resources (Decision 41H-114172) in 2001 pursuant to Section 85-2-506 and 508, Montana Code Annotated as amended. This CGA restricts use of groundwater beneath the Property for any purpose, except as provided in the Remedial Action or as otherwise authorized by EPA and MDEQ. The CGA process allows for a description of the restrictions, and the restriction provided reads as follows: "No new wells within CGA except for remedial action activities. Complete restriction of groundwater use within the area except for remedial activities." The CGA does not distinguish between shallow and deeper groundwater, or groundwater in deeper aquifers. The CGA decision, including the extent of the CGA, is included in Attachment 7.

The CGA incorporates all the IPC property to the south of I-90 and establishes a buffer zone around the plume. The buffer zone was determined using model simulations to determine how far away a supply well must be from the 1 ug/L PCP contour to avoid capturing or otherwise altering the plume of contaminated groundwater. The RSE report noted that the current CGA would prohibit use of wells that have substantially lower extraction rates than 500 gallons per minute (gpm), including additional or replacement supply wells for some local residences that might have an average extraction rate of under10 gpm. In light of this, the CGA restriction may be over-protective under certain circumstances. Amendments to the CGA to allow additional wells should be considered if it can be shown that the placement and extraction rates of such wells will not draw from or alter the direction or extent of the plume of contaminated groundwater subject to the CGA.

The RSE report also noted that the CGA may be overly restrictive by including all of the IPC property south of I-90. All of IPC property south of I-90 (41.40 acres) was originally included within the CGA boundary as an additional step to protect groundwater under the Site because the LTU and retention pond were in use for remediation of contaminated soil on Site. Although the groundwater beneath the LTU was monitored and historically was "non-detect" for PCP, it was determined that the entire property south of I-90 should be included as a protective measure. Now that the LTU is closed and it has been determined that no impact to groundwater has occurred to date as a result of these waste management practices, it may be appropriate to remove some area south of I-90 from the CGA (i.e., areas outside the buffer zone from the original CGA calculations described below).

The CGA buffer zone was created by conducting a capture zone analysis using Site specific aquifer parameters and the groundwater flow model, MODFLOW. The capture zone analysis included a hypothetical well with varying pumping rates and permeabilities representative of Site conditions. The maximum capture zone included in the CGA was based on a 500 gallon per minute well and high permeability conditions[4]. The resulting buffer zone included a distance of 170 feet upgradient and 320 feet cross gradient and these distances were used to offset the

[4] A typical yield capacity for domestic water use is 25 gallons per minute (gpm). Wells yielding less than 35 gpm do not require a Permit from DNRC. If more than a 35 gpm yield is intended from a well, a Water Right (Beneficial Water Use) Permit must be filed with the Department of Natural Resource Conservation prior to well construction.

existing <1.0 ug/L PCP contour line and create potential buffer zone delineations. Only a portion of the property south of I-90 is within the calculated capture and buffer zone.

It was noted during the five-year review that the down-gradient extent of the CGA may not fully account for the potential for water impacted with dissolved phase PCP to be transported in the groundwater for some distance parallel to Rocky Creek before it discharges to Rocky Creek. However, this observation is based on one sample event taken in the fall of 2009 for the five-year review to better define vertical delineation of the plume. This one sample event may indicate that a preferential pathway for contaminant transport in the down gradient portion of the plume may be more significant in the intermediate aquifer than in the shallow aquifer. To better characterize the core of the plume in the intermediate (B) horizon, additional wells located in the B horizon will be sampled semi-annually for PCP and the Sampling and Analysis Plan will be updated to lay out an appropriate statistical method for determining when a portion of the Site is clean.

Estimated Annual O&M Costs

At the time of the Site visit (October 2009), the team estimated the overall system costs for O&M on the order of $195,000 per year Costs were estimated using the following approximate costs for specific activities (Table 3).

Table 3: Annual System Operations/O&M Costs

Item Description	Approximate Annual Cost
Routine Project Management	$ 24,000
O&M Labor	$ 50,000
Electricity	$ 12,000
Supplies, well maintenance subcontractor, and parts	$ 25,000
Groundwater monitoring	$ 9,000
Reporting	$30,000
Analytical costs	$40,000
Waste Disposal	$ 5,000
Total Estimated Annual Cost	**$195,000**

V. Progress Since the Last Five-Year Review

This is the third five-year review conducted for the Site. The second five-year review was completed in September 2005. This section presents the conclusions of the previous five-year review and summarizes progress addressing recommendations from that review.

Protectiveness Statement From the Second Five-Year Review

The protectiveness statement from the second five-year review (September 2005) stated the following:

> *The [second] five-year review of the remedial actions for soil and groundwater at the Idaho Pole Company Site has resulted in the determination that the remedial actions are protective of human health and the environment.*

Section X (Protectiveness Statements) from the second five-year review added the following:

> *Both the Health and Safety Plan (HASP) and the Contingency Plan are in place, sufficient to control risks, and properly implemented. The remedial action for the soil has been completed and groundwater components of the remedy are functioning effectively as anticipated; therefore, the remedy for the Site is expected to be protective of human health and the environment.*
>
> *Soil Component*
> *The soil component of the remedy at the IPC Site has been completed.*
>
> *Groundwater Component*
>
> *The groundwater component of the remedy is functioning effectively as anticipated and is therefore protective of human health and the environment. Levels of contaminants continue to decrease and migration of the groundwater plume has been stabilized. Although downgradient residential wells are not contaminated, institutional controls have been implemented to prevent groundwater use downgradient of the plume.*

Status of Recommendations From the Second Five-Year Review

Section IX (Recommendations) from the second five-year review included two recommendations, which are listed in Table 4.

Table 4: Actions Taken Since the Last Five-Year Review

Recommendation from Previous Review	Party Responsible	Status/Action Taken Since Previous Review	Milestone Date	Still an Issue?
The Montana WQB-7 Numeric Water Quality Standards should be evaluated for inclusion as Site remediation levels.	Not Stated	"December 2007 Update – Idaho Pole Company Superfund Site" by EPA indicated that, regarding this issue, "protectiveness of the remedy has been deemed appropriate." As part of this third five-year review, the 2008 Montana DEQ-7 criteria were evaluated for COCs in groundwater (see Section 7 of this third five-year review for related discussion).	December 2007	No
EPA is working with MDEQ and IPC to establish institutional controls to protect soil and groundwater components of the remedy and to prevent human exposure to contamination remaining on Site. Integrity of the groundwater treatment system and security of the treated soil are also a focus of this effort.	Not Stated	For soils, work on finalizing the ICs has continued since the second five-year review For groundwater, the CGA has remained in effect. EPA is still investigating whether the current size and extent of the CGA is appropriate.	Addressed in the next Five Year Review	Yes for soils. EPA expects institutional controls for specific areas containing treated soils to be finalized in 2010, at which time the Site may be deleted with respect to soils. Yes for groundwater. It may be appropriate to adjust the border of the CGA in some areas. It also may be appropriate to determine if downgradient contamination of groundwater extends beyond the current CGA.

VI. Five-Year Review Process

This third five-year review for the Site has been conducted in compliance with EPA's Comprehensive Five-Year Review Guidance dated June 2001 (EPA, 2001). This review was performed primarily by (or with the assistance of) the following team members:

- Roger Hoogerheide, RPM, EPA
- Lisa DeWitt, Project Officer, MDEQ
- Mary Ann Dunwell, Community Relations, MDEQ
- Rob Greenwald, Hydrogeologist, GeoTrans, Inc. (contractor to MDEQ)
- Doug Sutton, Engineer, GeoTrans, Inc. (contractor to MDEQ)
- Les Lonning, Manager, Director, Technical and Environmental Affairs, IPC

- Rebecca Fabich, Treatment Plant Manager (contractor to IPC)
- Dan Stremcha, Project Manager, Hydrometrics, Inc. (contractor to IPC)

The review process included a Site inspection, interviews with relevant parties, and a review of the applicable Site records and data. These items are discussed in more detail below.

Administrative Components

EPA Region 8 is the lead agency for this five-year review. The Five-Year Review report was primarily prepared by Tetra Tech (including its subsidiary GeoTrans, Inc.) under contract to MDEQ. A Site visit for the five-year review was conducted on October 29 to October 30, 2009 in conjunction with an RSE. The RSE was also conducted by Tetra Tech (including its subsidiary GeoTrans, Inc.) under contract to MDEQ, and the RSE provided information and analysis used in this five-year review.

Site Inspection

Individuals participating in the October 29 to October 30, 2009 Site visit are listed on Table 5. A completed Site inspection checklist is provided in Attachment 1. On the basis of this inspection EPA concluded that the Site is well maintained. No issues were raised with respect to Site operations. The condition of the groundwater treatment system components, monitoring wells and the availability of documents such as the O&M Manual and As-Built Drawings, Site security, and other aspects of the Site are detailed on the five-year review checklist.

Table 5: Individuals Present for Site Visit

Name	Affiliation	Phone	Email
Lisa DeWitt	MDEQ	406-841-5037	lidewitt@mt.gov
Roger Hoogerheide	EPA Region 8	406-457-5031	hoogerheide.roger@epa.gov
Rob Greenwald	GeoTrans, Inc.	732-409-0344	rgreenwald@geotransinc.com
Doug Sutton	GeoTrans, Inc.	732-409-0344	dsutton@geotransinc.com
Colin McCoy	Tetra Tech	406-442-5588	colin.mccoy@ttemi.com
Ed Surbrugg	Tetra Tech	406-442-5588	Edward.surbrugg@ttemi.com
Les Lonning	Idaho Pole	253-572-3033	LesL@ldm.com
Rebecca Fabich	Contractor to IPC (Plant Manager)	406-570-0002	rmfabich@gmail.com
Dan Stremcha	Hydrometrics	406-656-1172	dstremcha@hydrometrics.com
Alan English	Gallatin County (Water Quality District)	406-582-3148	alan.english@gallatin.mt.gov
Mary Ann Dunwell	MDEQ (Community Relations)	406-841-5016	mdunwell@mt.gov

The water treatment plant is located inside a metal building that is kept locked when the operator is not at the Site. The water treatment plant is located inside of a fenced, lockable enclosure. The infiltration trench located north of I-90 is also located inside of a fenced, lockable enclosure. No damage to any of the fences or the water treatment plant building was noted during the inspection.

The treated soils area is not fenced but is capped and revegetated. There were no visible signs of erosion. There was no evidence of trespass at the IPC Site south of I-90 although the Site operator provided anecdotal information that transient (homeless) people have been known to try and break into the offices and have occasionally camped on IPC property north of I-90.

Community Notification and Involvement (Including Interviews)

Public notices announcing the beginning of the third five-year review were published in the Bozeman Daily Chronicle on October 25, 2009 and October 28, 2009 (a copy of the first notice is provided in Attachment 4). A fact sheet with notification of the third five-year review was sent to approximately 4600 residences within a one mile radius of the Site on December 11, 2009; however, approximately 10% were returned as undeliverable The fact sheet is posted on the following websites:

http://www.gallatin.mt.gov/Public_Documents/GallatinCoMT_WQDFactSheets/Idaho%20Pole

http://www.EPA.gov/region8/superfund/mt/idaho_pole

This fact sheet is included in Attachment 4 to this report. Additional notification regarding the third five-year review was provided at a public meeting on May 6, 2010 (information regarding the promotion of this meeting to the public is included in Attachment 4). Upon final concurrence, this report will be placed in the information repositories for the Site. Once this report is approved, another fact sheet will be distributed to the approximately 4600 residences within one mile of the Site discussing the findings of the five-year review and announcing the availability of the third Five-Year Review report at the information repositories, and the fact sheet will also be published in the Bozeman Daily Chronicle. Site repositories are the Bozeman Public Library (220 East Lamme Street, Bozeman, Montana 59715) and the U.S. EPA Montana Office (Federal Building, Suite 3200, 10 West 15th Street, Helena, Montana 59626), The report will also be placed on EPA's website and a link to this web site will be placed on Gallatin County Water District's website.

Interviews were primarily conducted by the following people:

- Roger Hoogerheide, RPM, EPA
- Lisa DeWitt, Project Officer, MDEQ
- Mary Ann Dunwell, Community Relations, MDEQ
- Rebecca Fabich, Treatment Plant Manager (contractor to IPC)

The following people were interviewed and represent a mixture of nearby residents and public officials:

- Les Lonning, Director of Technical and Environmental Affairs, IPC
- Rebecca Fabich, Treatment Plant Manager (contractor to IPC)
- Ada Montague, Gallatin County Planner
- Sean O'Callaghan, Gallatin County Planner
- Brian Krueger, Bozeman City Planner
- Debbie Arkel, Bozeman Director of Public Services
- Alan English, Gallatin County Water Quality District
- Dan Figgins, Resident
- Jake and Georgia Kroon, Residents
- John Bailey, Jr., Resident
- Kay Barnett and Jim Whittle, Residents
- Greg Poncelet, Area Business Owner (Montana Ready Mix and Crane Service)
- Christine and Kevin Huyser, Area Business Owners (Stockyard Café)

Interview forms are included as Attachment 3, and information obtained during the interviews is briefly summarized below.

Les Lonning (Director, Technical and Environmental Affairs, IPC) said the project has taken longer than hoped, but that the remediation being performed at the Site is appropriate. He indicated that he feels the remedy is effective. He suggests that there is a time gap in keeping the public informed, which could potentially be mitigated with additional community outreach. He indicated that neighbors to the south are not amenable to potential industrial development that could occur in the future.

Rebecca Fabich (contractor to IPC) stated that the Site team's goal is to improve the Site, that much progress has been made, and that the responsible party is open to improving the operation of the remedy. She indicates that she is accessible to neighbors and communicates with them. She indicated the remedy operations have had minimal impacts to neighbors, and she has heard no complaints from neighbors in the last five years. She said she feels the remedy is effective, and she believes there could be additional public outreach to let the public know about the progress of the remedy.

Ada Montague (Gallatin County Planner) indicated that she doesn't have much knowledge of the Site, but is not aware of any community concerns. She indicated the remedy appears to be effective based on information she has reviewed such as from the internet, but she is not well informed about the Site and remedy progress. She suggested that the Site team obtain

information about the Greater Bozeman Transportation Plan and to determine if there are any access acquisition interests. She asked for and was provided with additional information about PCP.

Sean O'Callaghan (Gallatin County Planner) stated there is not much local knowledge about the Site and remedy progress. He is not aware of any community concerns. He does not feel he has enough information to state an opinion about the effectiveness of the remedy. He indicated the CGA provides some development constraints but is not burdensome, and Site impacts can potentially complicate issues like road extensions. He suggests that Site information be presented at one or more public meetings (e.g., County Commissioners) and that Site monitoring data be uploaded to a public website. He also suggested that the Site team review the Greater Bozeman Transportation Plan.

Brian Krueger (Bozeman City Planner) said that people cannot easily see what is taking place regarding the remedy, which can lead to an impression that not much is going on. He said there is potential concern for the City that Site impacts could increase costs for future utility installation (water and sewer) down Bohart Lane. Such improvements are not currently planned but are possible in the future, and there is concern that the Site impacts could increase costs of such work and make it infeasible. He also noted there is some restriction to residences resulting from the CGA. He feels the remedy is effective, but does not feel well informed. He suggested a GIS layer of remediation Sites (in general) would be an improvement. He indicated a new fire station is planned for the area by the City, but there is currently no timetable or funding. He indicated that NorthWest Energy has proposed increasing the size of the substation near the Site. He also discussed issues related to potential future annexation of the entire Site area into the City.

Debbie Arkel (Bozeman Director of Public Service) indicated that the Site is potentially valuable land if it is able to be redeveloped (which would likely require bringing in municipal water). She indicated impacts to groundwater would need to be accounted for if extension of municipal water occurs through the impacted area in the future. She feels the remedy is effective, but feels that she is not well informed. She would appreciate receiving periodic updates especially with respect to partial deletion designation.

Alan English (Gallatin County Water Quality District) stated that he has become more knowledgeable about the Site within the last year. He feels the soil remedy has been effective, but had questions as to why soil remediation is considered complete since soil with dioxin was placed back on-Site (it was subsequently explained that those soils placed back on-Site are being addressed with soil cover plus ICs). He is not sure if he considers the groundwater remedy effective, since there is a possibility of a continuing source beneath I-90 that may not be feasible to address. He is also not sure if the groundwater remedy is cost-effective (i.e., are the results worth the significant expense)? He indicated that he periodically gets asked about potential for the Site to impact surface water (Rocky Creek and East Gallatin River), suggesting that there is some community concern. He feels well informed at this point in time, and he hopes to have an opportunity to more closely review data so he can better inform the public. He suggests linking Site data so it can be accessed from a County website, and perhaps further testing of some deeper B zone wells.

Dan Figgins (Resident) said he feels the remedy is effective with respect to both soil and water, and that a lot of money has been spent. He indicated the soil treatment with the LTU appears to have worked well. He has concerns about future development; specifically, if the Site deletion allows land to become developable it could increase his property taxes and/or lead to undesirable development like a trailer park. He indicated the groundwater sampling needs to continue at least annually (assumed that he is referring to residential sampling). He suggests more public outreach via mail and perhaps a meeting for neighboring residences (not a big public meeting).

Jake and Georgia Kroon (Residents) indicated they feel the remedy is effective as far as they know, and they are thankful for the cleanup and monitoring. They want to make sure monitoring continues. They indicated that prior to the remedy they could see impacts on the groundwater, and now there are no sheens on their water and there is not petroleum taste to the water. Their concerns primarily relate to potential development and/or annexation. They prefer to not be annexed and do not want subdivision of parcels, but they hope the County will fix the road. They feel well informed and appreciate communication they receive from Rebecca Fabich, including the sampling results they receive for their well. They suggest public outreach could be improved with fact sheets and meetings for neighboring residences. They would like to have their well sampled for oil and asked if they should be concerned about Tribromophenol and potential health impacts from PCP (EPA and MDEQ indicated the levels observed are below safety standards).

John Bailey, Jr. (Resident) stated he thinks the remedy is effective, but has taken too long. He indicated has concerns related to development and potential annexation, he does not want to see development. He also has concerns regarding the ability to prove that the Site has ultimately been cleaned up, and regarding who is responsible if his well becomes impacted. Though there is no oil sheen or taste or smell in his well, he would like to have his well sampled for oil. He does not feel well informed about the Site, and suggests public outreach could be improved with fact sheets and meetings for neighboring residences.

Kay Barnett and Jim Whittle (Residents) said they think the remedy is effective, though also wonder if the Site would have cleaned up on its own (though they believe the active soil remedy sped things up). They expressed concern regarding oil sheen "on the water" though their stock has not been sick (this appears to pertain to water pumped in a metal tank used for animals). They indicated they believe annual testing of their well is important. Mr. Whittle had throat cancer, but indicated there is no way to know if it was related to the Site. They have concerns about annexation (they don't want to be annexed). They feel well informed through outreach provided by Rebecca Fabich, and suggest public outreach could be improved with mailings (regular mail) and meetings for neighboring residences.

Greg Poncelet (Area Business Owner - Montana Ready Mix and Crane Service) stated he thinks the remedy is effective, and that the responsible party was perhaps required to do more than was necessary. He indicated he favors development, particularly for businesses that utilize trucking, and he does not believe the Superfund status of this Site has been the only impediment to such development. He thinks a neighbors association prefers a park or soccer field, and he does not favor that use. He is interested in utilities being extended to the area. He does not feel well

informed about the Site, and suggests public outreach could be improved with fact sheets or annual reports and meetings for neighboring residences.

Christine and Kevin Huyser (Area Business Owners - Stockyard Café) indicated they have no opinion about whether or not the remedy is effective, though they say they have not seen evidence of cleanup but the plume seems to be shrinking. They said they are pretty much unaffected by Site activities. They asked if the creek was affected (it was explained that there is no evidence of impacts in the creek). They said there are community concerns about annexation because it would raise taxes, but they feel the added infrastructure would be great. They do not feel well informed about the Site, and indicated that they are hopeful that successful cleanup will help with development and infrastructure.

Several good ideas were suggested during the community interviews. The following suggestions will be implemented by the Agencies:

- A resident reported an oil sheen at residence RES-2 in a metal tank from which a cow drinks. The Agencies will investigate this report to determine whether the sheen is caused by sources in the home, historical activities at the Site, or some other source.

- Residents and public officials noted that there has been limited public outreach since the Controlled Groundwater Use Area was issued in 2001. Public outreach is needed due to turnover in the public officials, because current public officials do not have historical knowledge of the Site. It is also needed to keep residents informed of Site progress. The Agencies are evaluating the appropriateness of a partial deletion of the soils component of the remedy from the NPL, which may reduce the Superfund stigma attached to the Site and facilitate redevelopment. Public outreach will be part of that process. The interviewees suggested that public outreach can be improved by issuing periodic fact sheets; small meetings with neighboring residents; briefings with public officials; and presentations at public meetings. Based on this feedback, the Agencies intend to expand public outreach efforts.

- During the Site inspection, Alan English, Gallatin County Water Quality District Director, mentioned the need to transfer all historic groundwater data to the State of Montana's Groundwater Information Center, managed by the Montana Bureau of Mines and Geology (MBMG), to make it more readily available to the public. This echoed a recommendation from the monitoring optimization study conducted by GSI Environmental (GSI, 2009), which suggested that a comprehensive analytical database would dramatically improve the evaluation of data in support of management decisions. Additionally, GSI recommended that relevant historical documents, such as the RI, should be made available in electronic format to facilitate a comparison of historic conditions with current Site characteristics. As a result of these suggestions, DEQ has tasked MBMG to enter historic groundwater data in to the State's groundwater monitoring database, and to ensure that this information is kept up to date and made available to the public. All relevant documents making up the administrative record for the remedy will be posted on EPA's website and the Gallatin County Water District's website.

- It was suggested that the Site team obtain information about the Greater Bozeman Transportation Plan to determine if there are any access acquisition interests. The Site team will obtain this information to determine if there are any access acquisition interests that may need to be considered as part of redevelopment of the property.

These suggestions will provide more transparency and openness in government to promote the public trust, public participation, and collaboration but they are not issues pertaining to protectiveness as part of this five-year review.

Document Review

The following Site documents were reviewed:

- Letter regarding *Performance Monitoring Requirements for the Groundwater Extraction/Injection System Modifications* (EPA Region 8 and MDEQ), March 26, 2010
- Approval letter regarding *Request for Modifications to Groundwater Monitoring* (EPA Region 8 and MDEQ), March 24, 2010
- 2009 Groundwater Assessment Report (Hydrometrics, Inc.), March 2010
- Remediation System Evaluation (Tetra Tech), February 2010
- Public Review Draft, Draft Recommended Interim Preliminary Remediation Goals For Dioxin in Soil at CERCLA and RCRA Sites
- Approval letter regarding *Request for Shutdown of Pressure Plant Extraction Wells* (EPA Region 8 and MDEQ), November 17, 2009
- December 2009 Update, Idaho Pole Company Superfund Site (EPA Region 8), December 2009
- Idaho Pole Company Site Quarterly Progress Reports for 2009 (Hydrometrics, Inc.), various dates for first three quarters of 2009
- September 2009 Residential Well Sampling (Hydrometrics, Inc.), October 2009
- Groundwater Monitoring Network Optimization, Draft Final (GSI Environmental), May 2009
- 2008 Groundwater Assessment Report (Hydrometrics, Inc.), March 2009
- Technical Assistance for Idaho Pole Site (GeoTrans, Inc.), January 2009
- Quarterly Progress Reports for 2008 (Hydrometrics, Inc.), various dates

- Circular DEQ-7, Montana Numeric Water Quality Standards (MDEQ), February 2008
- December 2007 Update, Idaho Pole Company Superfund Site (EPA Region 8), December 2007
- Second Five-Year Review Report (EPA Region 8), September 2005
- Circular WQB-7, Montana Numeric Water Quality Standards (MDEQ), January 2004
- Remedial Action Completion Report (RETEC Group, Inc.), December 2002
- Petition for Controlled Groundwater Area to the Department of Groundwater Resources and Conservation, September 2000
- Construction Completion Report (Maul Foster & Alongi, Inc.), November 1999
- Explanation of Significant Differences (EPA), November 1998
- Construction Completion Report (Geraghty & Miller, Inc.), January 1998
- Operations and Maintenance Manual, Groundwater Remedy (Arcadis Geraghty & Miller, Inc.), January 1998
- Final Design Report, Groundwater Remedy (Geraghty & Miller, Inc.), August 1996
- Explanation of Significant Differences (EPA), May 1996
- Final Design Report, Soil Remedy (Geraghty & Miller, Inc.), May 1995
- Record of Decision (Montana DEQ and EPA), September 1992
- Remedial Investigation Report (MSE, Inc.), March 1992

Data Review

Recent influent and effluent concentrations for PCP at the groundwater treatment plant are presented in Table 6. These data indicate that PCP is effectively treated.

Table 6: Recent PCP Influent and Effluent Concentrations at the Treatment Plant

Constituent	Month	PPEG Influent Concentration (ug/l)	BFEG Influent Concentration (ug/l)	Mid-Carbon Concentration (ug/l)	Effluent Concentration (ug/l)
PCP	3/4/08	< 0.25	41	< 0.5	< 0.5
	6/2/08	5.5	47	< 0.5	< 0.5
Standard: 1 ug/l	7/26/08	13	54	< 0.5	0.78
	9/24/08	3.9	57	< 0.5	< 0.5
	11/30/08	4.7	28	< 0.5	< 0.5
	1/28/09	1.3	16	< 0.5	< 0.5
	4/8/09	4.6	20	< 0.5	< 0.5
	5/30/09	24	18	< 0.5	< 0.5
	7/31/09	2.6	23	< 0.5	< 0.5
	9/21/09	1.6	16	< 0.5	< 0.5

Recent plume maps for PCP in groundwater (prepared by Hydrometrics for results from September 2009) are included in Attachment 5. Results from all depth intervals are posted on the figures, but each figure presents contours for a specific depth interval. The highest PCP concentrations are found at monitoring well 5-A (located south of I-90, just upgradient of the BFEG) and at monitoring well GM-4 (located just downgradient of I-90). Concentrations of PCP at 5-A are currently on the order of 1,000 ug/l, and concentrations of PCP at GM-4 are on the order of 100 to 200 ug/l.

Historical concentration data suggest that PCP concentrations have declined significantly over time, as illustrated on Figure 4. Statistical and qualitative evaluations of the analytical data were also conducted as part of the Phase I groundwater evaluation and the following general conclusions were drawn based on the results of these analyses (GSI Environmental, 2009):

- *Strongly Decreasing Concentration Trends*: Approximately half of the wells evaluated showed strongly decreasing PCP concentration trends. Decreasing trends were seen in wells with the highest concentrations (5-A, 9-A, 15-A, GM-4). No increasing trends were found. Estimates of total dissolved mass of PCP in the plume have decreased sharply between 1998 and 2007.

- *Stable to Shrinking Plume*: While concentrations of PCP have been decreasing, particularly in high concentration areas, the center of mass of the plume has remained stable. The relative distribution of mass in the plume has remained stable while the overall plume has become more dilute.

The concentration declines are presumably due to remedial actions to date (source removal, P&T, and, potentially, in-situ biodegradation). However, concentrations of PCP well above groundwater cleanup levels remain south of I-90 and north of I-90.

The RSE concluded that there may be a continuing source of dissolved PCP, causing the persistence of PCP impacts north of I-90. Possibilities include one or more of the following:

- Potential gaps in capture associated with the BFEG (as operated during "Phase 1" of the groundwater remedy) such that groundwater impacts in the barkfill area (e.g., near monitoring well 5-A) continued to migrate to the north of I-90

- Potential source material located beneath I-90

- Potential source material north of I-90 that may not have been removed during the soil remedy

The RSE described multiple lines of evidence suggesting that, during "Phase 1" of the groundwater remedy, there may have been gaps in capture at the BFEG that allowed PCP impacted water to migrate towards the north (such that PCP impacts north of I-90 would persist for many more years unless further action was taken). During "Phase 1" of the groundwater remedy Site operators attempted to achieve approximately 50 gpm at each of the two extraction galleries (PPEG and BFEG). "Phase 2" of the groundwater remedy, implemented in late 2009 and early 2010 after the RSE Site visit, attempts to address this issue by discontinuing extraction at the PPEG to allow for higher pumping rates (100 gpm or more) at the BFEG, and focusing extraction at the BFEG extraction wells near the highest PCP concentrations (expected to be BE-3 to BE-5). The Agencies required performance monitoring to be modified in a letter to IPC dated March 26, 2010 (Attachment 2) and intends to continue to sample for PCP in GM-4 and selected downgradient wells until the next five-year review when a Mann-Kendall statistical test will be performed. PCP concentration trends at GM-4 during "Phase 2" of the groundwater remedy will provide valuable information:

- If PCP concentrations decline rapidly towards cleanup levels at GM-4 and points further down-gradient, it will suggest that gaps in capture at the BFEG have been mitigated. It will also suggest that continuing sources of PCP contamination beneath I-90 and/or north of I-90 are not very significant. If that is the case, it might be possible to ultimately eliminate the groundwater treatment system, after the source area up-gradient of the BFEG (near well 5A) is further investigated and remediated.

- If PCP concentrations decline rapidly but stabilize well above cleanup goals at GM-4 (and points further down-gradient), that will suggest that gaps in capture at the BFEG have been mitigated, but that other continuing sources of PCP contamination beneath I-90 and/or north of I-90 are likely significant.

- If PCP concentrations at GM-4 (and points further down gradient) are not noticeably reduced, it will suggest that the contamination levels at GM-4 and beyond are more likely due to continuing sources of PCP contamination beneath I-90 and/or north of I-90.

The transition to "Phase 2" of the groundwater remedy included changes in process monitoring, to provide appropriate data to evaluate these results, as well as the following modifications to the

groundwater monitoring program (based on the data review presented in the RSE):

- Discontinuation of bioremediation parameters (ammonia, nitrate, nitrite, total alkalinity, bicarbonate alkalinity, sulfate, sulfite, total organic carbon, orthophosphate, and dissolved oxygen). Bioremediation parameters that were collected to confirm that natural attenuation was taking place do not add significantly to the management of the remedy, although dissolved oxygen will continue to be collected as a field parameter.

- Measurement of groundwater levels semi-annually rather than quarterly.

- Discontinuation of sampling for PAHs at five monitoring wells that have consistently had PAH concentrations that are "non-detect" or below the ROD cleanup standard since performance monitoring was implemented in 1996 (9-A, 19-A, 25-A, 25-B and 26-C), and addition of sampling for PAHs at five monitoring wells down-gradient of observed PAH detections to better define the extent of the PAH plume (23-A, 23-B, GM-4, GM-5 and GM-6).

- Addition of sampling for PCP at six deeper-screened monitoring wells (9-B, 16-B, 24-B, 26-B, 27-B and GM-5), based on higher concentrations of PCP that were observed at some deeper screened monitoring wells that were specially sampled in Fall 2009 to provide information for this five-year review (i.e., those wells were not sampled regularly prior to Fall 2009).

- Discontinuation of sampling at seven monitoring wells because they are consistently clean and/or appear to be redundant with other wells (4-A, 7-A, 10-A, 12-A, 24-Al, 27-A, and GM-7).

- Use of well 19-A as the background well since the previous background well (1-A) is frequently dry, and reduction of background sampling frequency to every five years unless unexpected concentration increases are observed in other on-Site wells. This is an acceptable amount of monitoring for a background well because the historic record of background samples can be used to determine a 95% Upper Confidence Level for PCP concentrations.

Residential wells RES-1 through RES-7 and RES-9 (i.e., at properties not previously purchased by IPC) continue to show PCP groundwater concentrations that are "non-detect." Based on community interview responses as part of the five-year review, these residential wells will continue to be sampled annually.

The RSE also identified the possibility that the down-gradient portion of the PCP plume could parallel Rocky Creek for some distance (see conceptual figure in Attachment 7). Because of this, the RSE suggested that the Site team identify any wells (supply or otherwise) located in this area, determine their uses, determine their construction, and sample any such wells for PCP. Subsequent to the RSE, EPA and MDEQ confirmed there are currently no supply wells along the southern edge of Rocky Creek, to the north and northwest of GM-8 and RES-8. However, there

is still the potential that groundwater is contaminated in that area, and that such contamination extends beyond the current extent of the CGA. Sampling of groundwater from temporary or permanent wells in that area could indicate whether there is contamination beyond the current CGA. If that is the case, it may be necessary to modify the extent of the CGA. As an initial first step, PCP will be monitored semi-annually at six deeper-screened monitoring wells (9-B, 16-B, 24-B, 26-B, 27-B and GM-5). A single well Mann Kendall statistical test of each well will be conducted during the next five-year review. If the statistical test demonstrates no trend or an increasing trend in groundwater contamination at 95% Confidence Level, the Agencies will consider sampling of groundwater downgradient of GM-8 and RES-8 from temporary or permanent wells, to determine if there is contaminated groundwater beyond the current CGA boundary.

The EPA/MDEQ data review also shows that the volume of oil collection in the trench just north of I-90 has decreased substantially over time, presumably due to flushing of the oil from under I-90. The number of absorbent pads used in recent years to remove oil from the trench has been approximately 25 to 30 per year, with higher numbers of pads used in the second and third quarters. Water in the trench is generally frozen in the first quarter. It is unclear why oil collection decreases in the fourth quarter, but it may be due to a lower water table and/or freezing conditions in the latter part of the quarter.

During interviews, an oil sheen was reported at one residence (RES-2) in a metal tank from which a cow drinks. EPA and DEQ may require further investigation to determine whether this sheen is caused by a source at the home, or by historical wood-treating activities at the Site.

The EPA/MDEQ data review also shows that there is a general lack of understanding and/or documentation regarding vertical hydraulic gradients at the Site. Additional knowledge might be gained by using water level data from all intervals, measured at each existing well cluster, which will improve the Site conceptual model. Previously, water levels were collected at the shallowest wells. The RSE suggests that water level measurements be made at all Site wells. Water level maps can be prepared based on the shallow wells, but the water level measurements from the deeper wells (presented in tables in Site reports) could help the Agencies interpret the direction of vertical groundwater flow.

The 1992 ROD estimated that the time needed to achieve groundwater remediation levels was from 10 to 15 years. The groundwater remedy has been operating since 1996. While the groundwater remedy is progressing and the treatment system is functioning as designed, remediation levels have not been achieved within the time period estimated in the 1992 ROD. Using cleanup data collected since the remedy was initiated, the Agencies intend to estimate a new, more accurate time frame in which remediation levels may be achieved but this is not considered an issue pertaining to protectiveness of the remedy as part of the five-year review.

A change in the estimated duration of achieving groundwater remediation cleanup levels, and a clarification of the groundwater area to be treated (discussed on page 11) are considered minor and non-significant changes to the remedy, inasmuch as these changes will not have a significant impact on the scope, performance or cost of the remedy. However, non-significant or minor

changes must still be recorded in the post-ROD Site file and documented for public review. EPA, as the lead Agency, will issue a Five-Year Review fact sheet that documents the findings of this report and which also provides a written statement describing these changes, as recommended in Section 7.3.1 of EPA's ROD Guidance (EPA, July, 1999). This fact sheet will also serve as the appropriate memo to the Site file required for documenting non-significant or minor changes to a ROD.

VII. Technical Assessment

The following responses to questions support the determination that the remedy at the Idaho Pole Company Site is currently functioning as designed and is expected to remain protective of human health and the environment.

Question A: Is the remedy functioning as intended by the decision documents?

The answer to Question A is "no" for the soils remedy of OU01. The soil remedy is considered complete, and an informational institutional control was filed with the Clerk and Recorder Gallatin County in 2003 for the property where Treated Soils have been left on Site. However, efforts are underway by the Site team to finalize proprietary ICs that restricts excavation within the Treated Soils Area and the Controlled Groundwater Area. Once these institutional controls are in place, EPA will be able to make a Sitewide Ready for Anticipated Reuse Determination, after which, the soils portion of the remedy is expected to be deleted for the Site as a whole and the soils remedy will be considered functioning as intended by the decision documents.

The answer to Question A is "yes" for the groundwater remedy. The groundwater treatment system has relatively low influent concentrations, and the groundwater cleanup levels are achieved in the treatment system effluent. Groundwater concentrations of PCP have declined over time, presumably due to remedial actions to date (source removal, P&T, and potential in-situ biodegradation). Concentrations of PCP that are well above groundwater cleanup standards remain south of I-90 and north of I-90, but protectiveness is provided by a combination of residential well sampling and ICs. Sampling results will alert the Agencies if there is any significant increase in groundwater contamination, and institutional controls will limit the drilling of new wells into contaminated groundwater and use of contaminated groundwater.

The groundwater remedy has recently transitioned from "Phase 1" to "Phase 2" as intended in the 1996 ESD based on "Phase 1" results. "Phase 2," which began in late 2009 and early 2010, implements a series of modifications that resulted from remedy optimization evaluations conducted since the last five-year review as well as discussions during the RSE Site visit and subsequent optimization recommendations in the RSE report. These modifications discontinued extraction from the PPEG, increased extraction at the BFEG, and changed groundwater monitoring and performance monitoring programs. Follow up monitoring semi-annually over the next several years may provide evidence of one or more the following:

- PCP concentrations that decline rapidly towards cleanup levels at GM-4 and at wells further down-gradient may suggest that gaps in capture at the BFEG have been mitigated and that continuing sources of PCP impacts beneath I-90 and/or north of I-90 are not significant. If that is the case, and if the source area up-gradient of the BFEG (near well 5A) is further investigated and remediated, it may be possible to eventually discontinue the groundwater treatment system.

- PCP concentrations that decline rapidly but stabilize above cleanup goals at GM-4 (and points further down-gradient) may suggest that gaps in capture at the BFEG have been mitigated but that other continuing sources of PCP impacts beneath I-90 and/or north of I-90 could be significant.

- PCP concentrations at GM-4 (and points further down gradient) that are not noticeably reduced may suggest that groundwater contamination at GM-4 and beyond are more likely due to continuing sources of PCP contamination beneath I-90 and/or north of I-90.

How long the groundwater remedy must continue remains uncertain, but the groundwater remedy is progressing and is functioning as intended.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

The answer to Question B is "no" for the soil remedy. The remaining soil remedy objective is to establish proprietary ICs on Site to protect areas where treated soil has been disposed of with remaining contamination above levels that allow for unlimited use and unrestricted exposure. The ROD's risk-based cleanup level for soil at the Site was based on a site-specific risk assessment and the Agency's anticipated that future use at the Site will not be residential. While the areas where treated soils have been left in place are not fenced, there is a vegetative cap on this area which was determined to be in good shape during the Site inspection.

Treated soils, including some with dioxin concentrations higher than 1000 ppt TCDD-TEQ, have been placed back on Site[5]. It is noted that EPA has released *Draft Recommended Interim Preliminary Remediation Goals for Dioxin in Soil at CERCLA and RCRA Sites (OSWER 9200.3-56, Draft December 2009)* for public comment. EPA's dioxin reassessment has been developed and undergone review over many years with the participation of scientific experts in EPA and other federal agencies, as well as scientific experts in the private sector and academia. The Agency followed current cancer guidelines and incorporated the latest data and physiological/biochemical research into the assessment. The results of the assessment have currently not been finalized and have not been adopted into state or federal standards. EPA anticipates that a final revision to the dioxin toxicity numbers may be released by the end of 2010. In addition, EPA/OSWER has proposed to revise the interim preliminary remediation goals (PRGs) for dioxin and dioxin-like compounds, based on technical assessment of scientific and environmental data. However, EPA has not made any final decisions on interim PRGs at this

[5] The ROD's risk-based cleanup level for dioxin in soil at the Site, expressed as equivalent concentration of TCDD (TCDD-TEQ), is 0.001 mg/kg (ppm), is equivalent to 1 ppb or 1000 ppt.

time. Therefore, the dioxin toxicity reassessment for this Site will be updated during the next five-year review.

The answer to Question B is "yes" for the ongoing groundwater remedy. The five-year review has not revealed any changes in Site conditions that affect exposure pathways. The RSE suggested that the Agencies look for potential additional receptors beyond wells GM-8 and RES-8 (along the south side of Rocky Creek). However, this recommendation was based on one sample event taken in the fall of 2009 from B-series wells that have not been sampled semi-annually as part of the groundwater monitoring program prior to 2009. These B-series wells were sampled as part of data collection efforts for this five-year review in response to a GSI Environmental *"Groundwater Monitoring Network Optimization"* Report recommendation to confirm vertical delineation of the plume.

IPC has agreed to sample wells 9-B, 16-B, 24-B, 26-B, 27-B and GM-5 for PCP semi-annually to better characterize the core of the plume in the B horizon. These wells will continue to be sampled until at least the next five-year review. The Sampling and Analysis Plan will also be modified to determine an appropriate statistical test for determining when a portion of the Site is determined to be clean. Interviews conducted by EPA and MDEQ for this third five-year review determined there are no current receptors in the area downgradient of the CGA with most residents hooked up to city water. While this new information collected from the B-series wells may indicate that a plume may be extending northward in the lower portions of the alluvial aquifer, modifications to the extraction gallery also need to be monitored for the next five years to determine if this adequately addresses any such contamination before requiring additional Site characterization of the plume since there are no known or anticipated future receptors in the area downgradient of the CGA.

The second five-year review recommended that Montana's WQB-7 Groundwater Standards (2004) be reviewed. The "December 2007 Update – Idaho Pole Company Superfund Site" stated that EPA and MDEQ had addressed this issue and concluded that "protectiveness of the remedy has been deemed appropriate."

As part of this third five-year review, the 2008 Montana DEQ-7 (previously known as WQB-7) groundwater criteria were evaluated for Site COCs. The Montana Water Quality Act requires that human health standards for carcinogens be the more restrictive of either of the following: (1) the risk-based level of one in one hundred thousand [$1x10^{-5}$] for all carcinogens (except arsenic) or, (2) the MCL. Concentrations of contaminants in sediment, soils and groundwater remaining on Site after cleanup is complete correspond to a lifetime cancer risk between 10^{-4} and 10^{-6} according to the 1992 ROD. Table 7 compares the ROD cleanup levels for groundwater to the 2008 Montana DEQ-7 criteria and the 2004 Montana WQB-7 Standards.

Table 7: Comparison of Groundwater Cleanup Criteria in ROD, 2008 Montana DEQ-7 Criteria and 2004 Montana WQB-7 Criteria

Constituent	ROD Cleanup Level (ug/l)	ROD Cleanup Level Basis	2008 DEQ-7 Criteria (ug/l)	2004 WQB-7 Criteria (ug/l)
PCP	1.0	MCL	1.0	1.0
B2 PAHs:				
Benzo(a)pyrene	0.2	MCL	0.05	0.048
Benz(a)anthracene	0.1	Proposed MCL	0.5	0.48
Benzo(b)fluoranthene	0.2	Proposed MCL	0.5	0.48
Benzo(k)fluoranthene	0.2	Proposed MCL	5.0	4.79
Chrysene	0.2	Proposed MCL	50.0	48.0
Dibenz(a,h)anthracene	0.3	Proposed MCL	0.05	0.048
Indeno(1,2,3-CD)pyrene	0.4	Proposed MCL	0.5	0.044
Total D PAHs	146	Hazard quotient		
Naphthalene			100	100
Fluorene			1100	280
Phenanthrene			-	-
Anthracene			2100	2100
Fluoranthene			130	280
Pyrene			830	960
Benzo(g,h,i)perylene			-	-
2,3,7,8-TCDD (Dioxin)	3.0×10^{-5}	MCL	2.0×10^{-6}	2.0×10^{-6}

None of the criteria for Site COCs in groundwater was lower than the previous 2004 WQB-7 values, with the exception of fluoranthene and pyrene. Thus, the previous conclusion by EPA and MDEQ that the "protectiveness of the remedy has been deemed appropriate" based on the comparison of the ROD criteria to the 2004 WQB-7 criteria still generally applies, except for pyrene and fluoranthene. The DEQ-7 criterion for pyrene (830 ug/l) is well above the ROD criterion of 146 ug/l, so meeting the ROD criterion will be more protective. The DEQ-7 criterion for fluoranthene (130 ug/l) is only slightly lower than the ROD cleanup level of 146 ug/l for Total D PAHs, and this difference does not appear to be significant with respect to the current management or protectiveness of the groundwater remedy. It is noted that although the DEQ-7 criteria for Benzo(a)pyrene and Dibenz(a,h)anthracene are 0.05 ug/l, the DEQ-7 required reporting limit for those parameters is 0.1 ug/l. This is consistent with the reporting limit of 0.1 ug/l for PAHs in Site sampling. These two PAHs have DEQ-7 criteria that are slightly lower than the ROD cleanup criteria. Again, this does not appear to be a significant enough difference to require a change in the remedy management, nor does it pose a significant problem for protectiveness of the groundwater remedy.

The DEQ-7 criterion for dioxin in groundwater is also slightly lower than the ROD criteria for dioxin in groundwater. While a cleanup standard for dioxin was established in the 1992 ROD, dioxin has not been detected in groundwater at this Site prior to the implementation of the remedy and has not been sampled in groundwater during the course of the remedy.

The Agencies have set out a consistent cleanup goal of 1 ug/l in the ROD for the predominant COC in groundwater at the Site, PCP. This goal also meets the MCL, the Montana WQB-7 standards from 2004, and the Montana DEQ-7 standards from 2008.

It is also noted that EPA (February 2010) released an external review draft for the development of a relative potency factor approach for PAH mixtures. This draft, in particular includes toxicity equivalency factors for many more common PAHs. If finalized, this approach would change estimated risk associated with exposure to PAHs. However, EPA has not made any final decisions at this time. If finalized, it will be evaluated during the next five-year review.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

The answer to Question C for the soil remedy of OU01 is "no," no additional information that has been identified that would call into question the current protectiveness of the remedy.

The answer to Question C for the groundwater remedy of OU01 is "yes," The RSE concluded that there may be a continuing source of dissolved PCP, causing the persistence of PCP impacts north of I-90. The pressure plant extraction well gallery was shut down as part of Phase 2 groundwater remedy for the purpose of evaluating the gallery's impact on contaminant recovery. Based on review of sampling and analytical results, the Agencies will assess whether it is appropriate to leave the pressure plant extraction well gallery shut down, or if it is appropriate to resume its operation. Higher concentrations of PCP were also detected at some deeper screened monitoring wells that were specially sampled in Fall 2009 to provide information for this five-year review (i.e., those wells were not sampled regularly prior to Fall 2009). PCP will be monitored semi-annually at six deeper-screened monitoring wells (9-B, 16-B, 24-B, 26-B, 27-B and GM-5) and the Sampling and Analysis Plan will be revised to determine an appropriate statistical test for determining when this portion of the Site is considered clean.

There are three issues identified that require some follow-up. (See Section VIII – "Issues") and the Agencies intend to implement some suggestions received during community interviews or provided by the RSE (See Section VI).

VIII. Issues

Issues identified by this review may require Agency follow up:

1. All of IPC property south of I-90 (41.40 acres) was originally included within the CGA boundary. It may be appropriate to remove some area south of I-90 from the CGA (i.e., areas outside the buffer zone from the original CGA calculations).

2. Plume delineation needs confirmation

    - The down-gradient portion of the PCP plume could parallel Rocky Creek for some distance.

- Unexpected concentrations of PCP were observed at some deeper screened monitoring wells

.

- The RSE also concluded that there may be a continuing source of dissolved PCP, causing the persistence of PCP impacts north of I-90.

3. Soil Institutional Controls are not in place.

IX. Recommendations and Follow-up Actions

Recommendations and follow-up actions are listed in Table 8.

Table 8: Recommendations and Follow-up Actions

Issue	Recommendations/Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)	
					Current	Future
1	Evaluate potential for reducing some portions of the CGA	EPA, MDEQ, IPC, Gallatin County Board of Health	EPA, MDEQ	9/30/2011	No	Yes
2	Update the Groundwater Conceptual Model	IPC, EPA, MDEQ	EPA, MDEQ	9/30/2014	No	Yes
3	File the proprietary IC with Gallatin County Clerk and Recorder and provide a copy to the Agencies	IPC,	EPA, MDEQ	9/30/2011	No	Yes

X. Protectiveness Statement(s)

The remedy at the soils component of OU01 currently protects human health and the environment because soils have been treated to ROD standards and placed back on Site with a protective cover of clean soil placed over these treated soils. However, in order for the remedy to be protective in the long-term, proprietary institutional controls need to be implemented and the preliminary remediation goals in soil for dioxin need to be finalized.

The remedy at the groundwater component OU01 is also currently protective of human health and the environment. The groundwater treatment system has relatively low influent concentrations, and the groundwater cleanup levels are achieved in the treatment system effluent. Groundwater concentrations of PCP have declined over time, presumably due to remedial actions to date

(source removal, P&T, and potential in-situ biodegradation). However, the RSE concluded that there may be a continuing source of dissolved PCP, causing the persistence of PCP impacts north of I-90. Higher concentrations of PCP were also detected at some deeper screened monitoring wells that were specially sampled in Fall 2009 to provide information for this five-year review (i.e., those wells were not sampled regularly prior to Fall 2009). Modifications to the extraction galleries and monitoring well network were implemented and six deeper-screened monitoring wells (9-B, 16-B, 24-B, 26-B, 27-B and GM-5) are now being monitored semi-annually. The Sampling and Analysis Plan will also be revised to determine an appropriate statistical test for determining when this portion of the Site is considered clean. A long-term protectiveness determination will be evaluated as part of the next five-year review.

Because the remedial actions at the soils and groundwater components of OU01 are protective in the short-term, the Site is protective of human health and the environment in the short-term.

XI. Next Review

Because contamination has been left on Site above levels that allow for unlimited use and unrestricted exposure, this Site requires ongoing five-year reviews. The next review will be conducted by September 2015, five years of the completion of this Five-Year Review report.

XII. References

Site documents reviewed are listed in Section VI. Other references are provided below.

City of Bozeman GIS Department (http://www.bozeman.net/bozeman/GIS/Default.aspx).

EPA, December 2009. *Public Review Draft: Draft Recommended Interim Preliminary Remediation Goals for Dioxin in Soil at CERCLA and RCRA Sites* (OSWER 9200.3-56).

EPA, June 2001. *Comprehensive Five-Year Review Guidance* (EPA 540-R-01-007).

EPA, July 1999. *A Guide for Preparing Superfund proposed Plans, Records of Decision or Other Remedy Selection Decision Documents* (EPA EPA540-R-98-031).

EPA, May 1995. Land Use in the CERCLA Remedy Selection Process (OSWER 9355.7-04).

EPA, February 2010. Development of a Relative Potency Factor Approach for Polycyclic Aromatic Hydrocarbon (PAH) Mixtures (EPA/635/R-08/012A)

Gallatin County GIS Interactive Mapping (http://webapps.gallatin.mt.gov/mappers/).

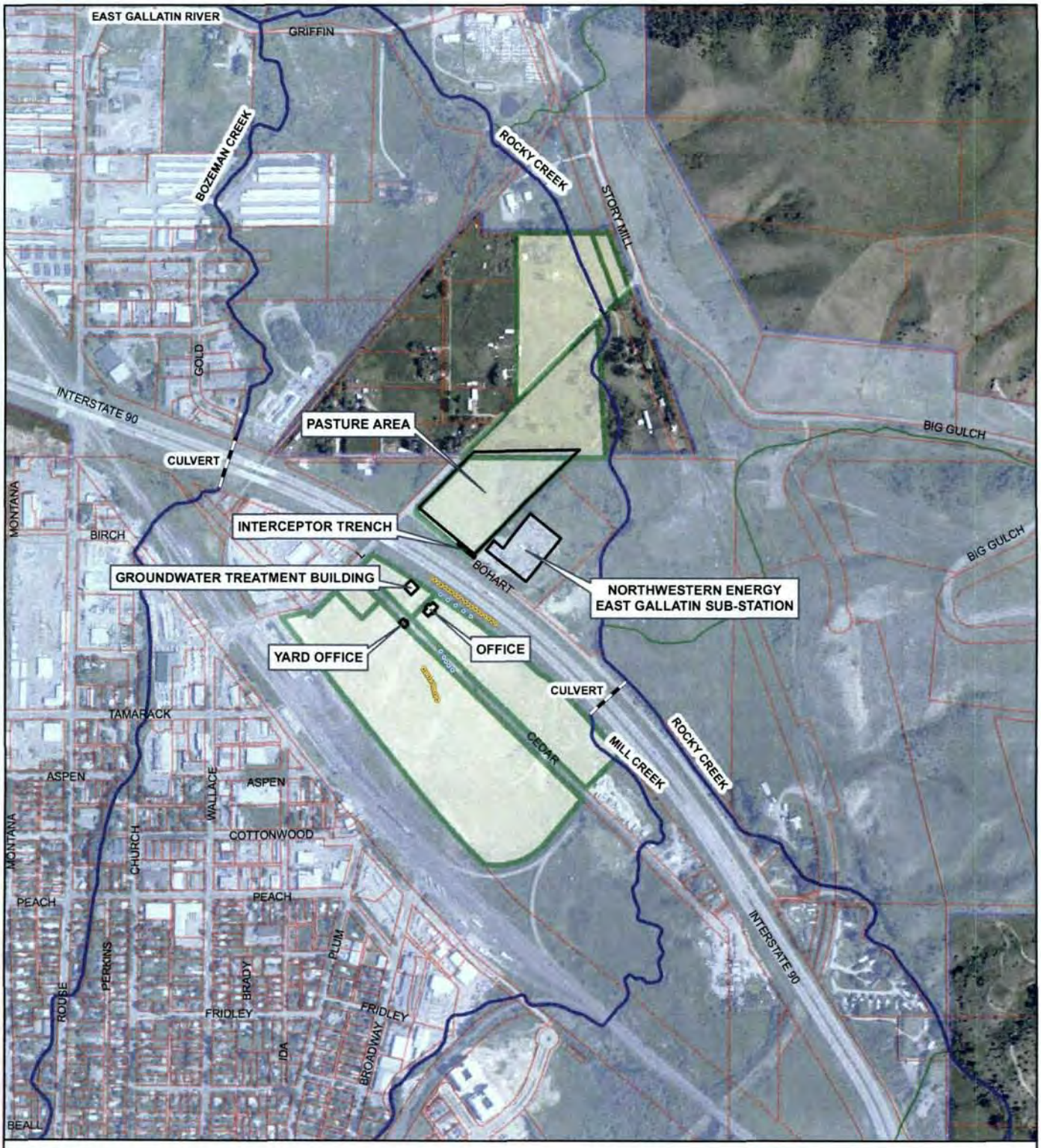
MSE, Inc. March 1992 Remedial Investigation Report

Montana Department of Environmental Quality, February 2008. *Circular DEQ-7, Montana*

Numeric Water Quality Standards.

Montana Department of Environmental Quality, January 2004. *Circular WQB-7, Montana Numeric Water Quality Standards.*

Figures



LEGEND

- PARCEL - IDAHO POLE COMPANY (Source: NRIS-Gallatin County Cadastral, July 2009)
- PARCEL - EXISTING (Source: NRIS-Gallatin County Cadastral, July 2009)
- BOZEMAN CITY LIMITS (Source: City of Bozeman GIS Department, 2004)
- EXTRACTION WELL (Source: Figure 1 from 5-Year Review, 2005)
- INJECTION WELL (Source: Figure 1 from 5-Year Review, 2005)

N

350 0 350 700

Feet

TETRA TECH EM, INC.

Idaho Pole
Bozeman, Montana

FIGURE 1
SITE MAP - EXISTING PARCELS

Figure-1_Site_Map_Existing-Parcels_120709.mxd - DWH - TtEMI

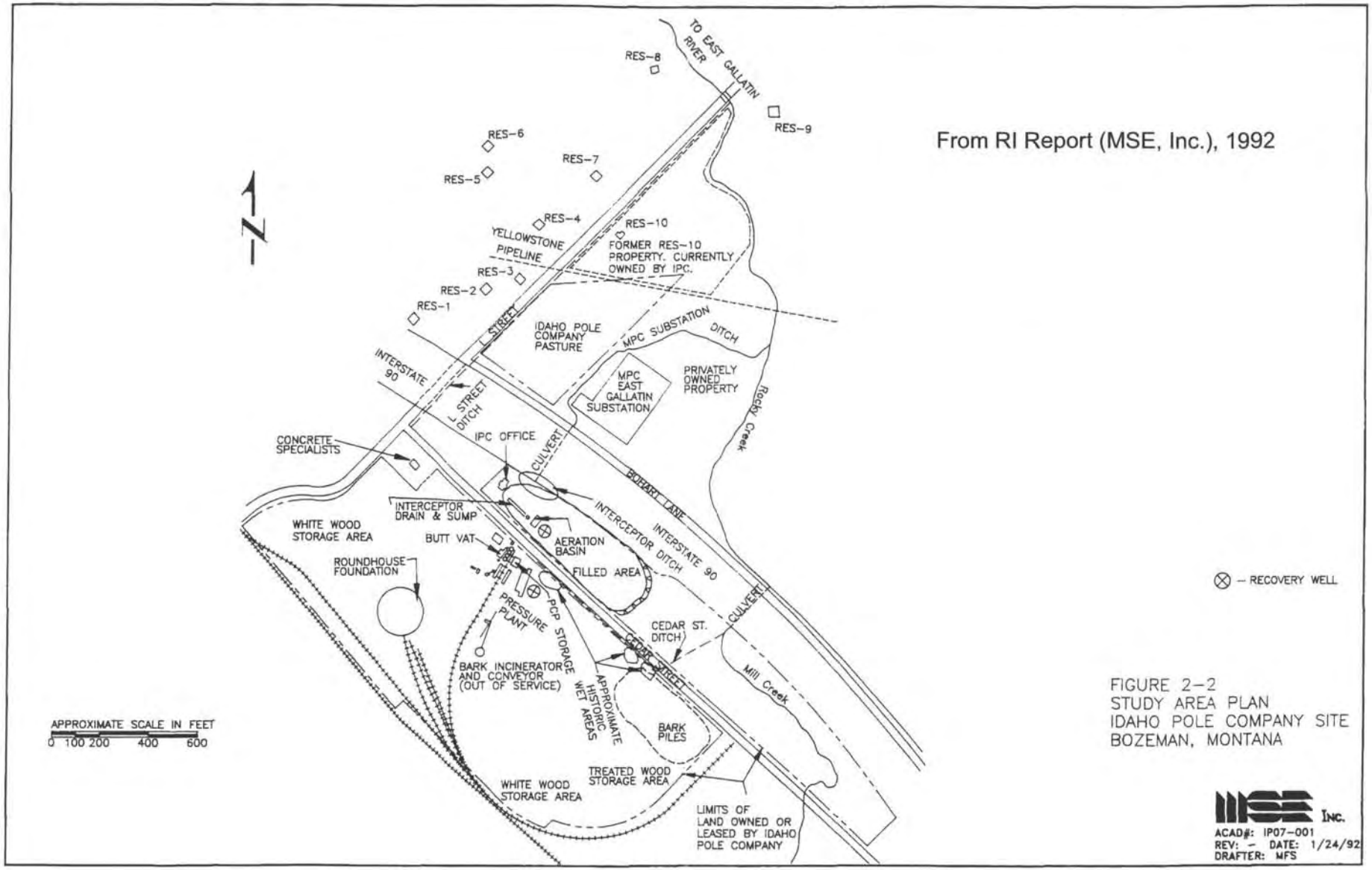
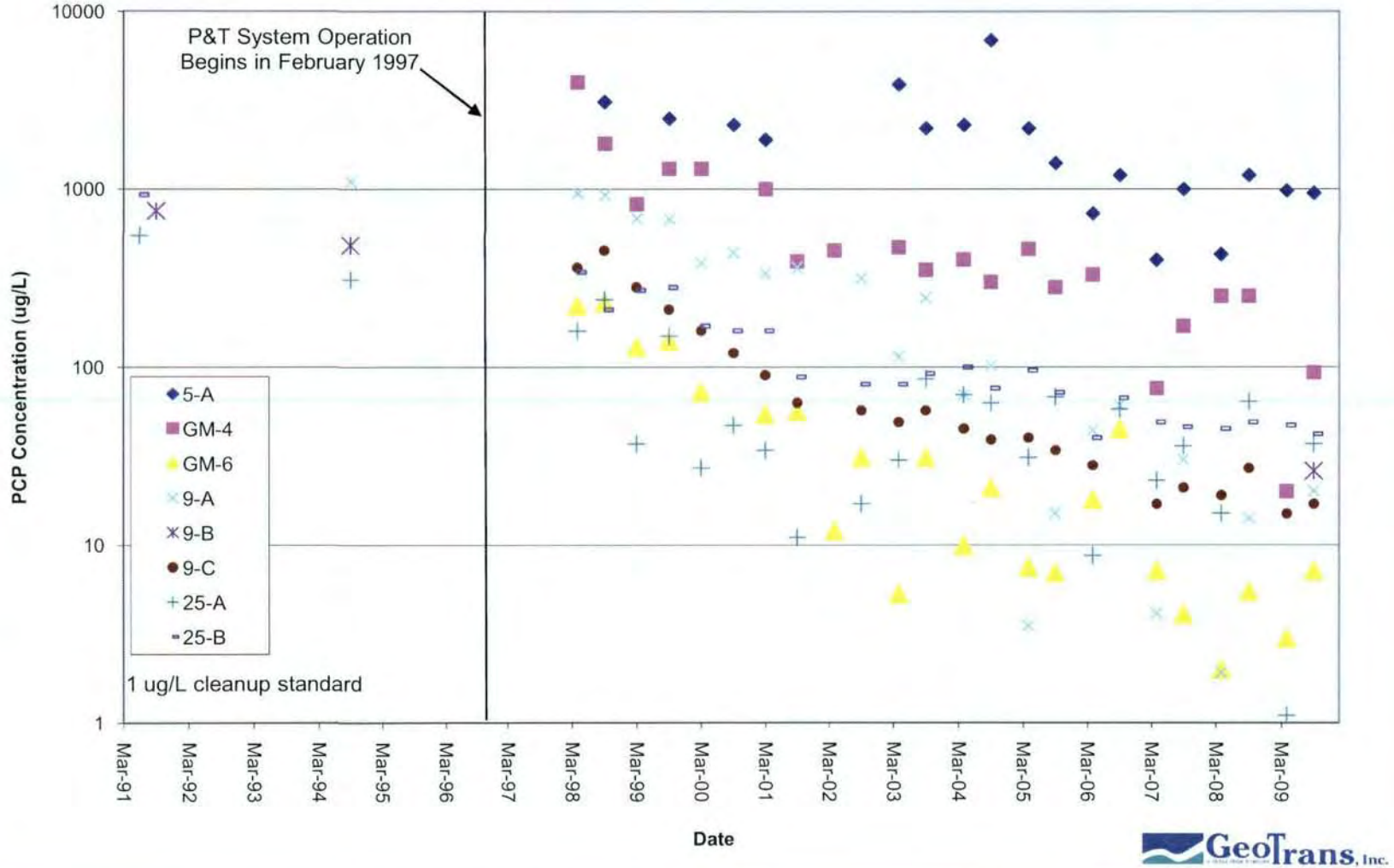


Figure 2. Illustration of Historical Site Features

Figure 3 - Water Level Map Prepared by Hydrometrics, Inc. for September 2009

Figure 4 - PCP Concentrations Versus Time at Selected Wells



Attachments

Attachment 1

Completed Site Inspection Checklist

Site Inspection Checklist

I. SITE INFORMATION

Site name: Idaho Pole Company	**Date of inspection:** October 29-30, 2010
Location and Region: Bozeman, Montana (Region 8)	**EPA ID:** MTD 006232276
Agency, office, or company leading the five-year review: EPA Region 8, Montana Office	**Weather/temperature:** Flurries, 35 F

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☑ Access controls
- ☑ Institutional controls
- ☑ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☑ Other Completed active soil remedy included a Land Treatment Unit
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☑ Inspection team roster attached (see main report) ☑ Site map attached (see main report)

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Les Lonning (Name) Director of Technical and Environmental Affairs, IPC (Title) Oct 29-30, 2009 (Date)
   Interviewed ☑ at site ☐ at office ☐ by phone Phone no. 253-572-3033
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff** Rebecca Fabich (Name) Plant Manager (Title) Oct 29-30, 2009 (Date)
   Interviewed ☑ at site ☐ at office ☐ by phone Phone no. 406-570-0002
   Problems, suggestions; ☐ Report attached _____

   O&M staff Dan Stremcha(Hydrometrics, Inc.) (Name) Project Manager (Title) Oct 29-30, 2009 (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. 406-656-1172
   Problems, suggestions; ☐ Report attached _____

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	**O&M Documents**			
	☑ O&M manual	☑ Readily available	☐ Up to date	☐ N/A
	☑ As-built drawings	☑ Readily available	☐ Up to date	☐ N/A
	☑ Maintenance logs	☑ Readily available	☐ Up to date	☐ N/A
	Remarks			
2.	**Site-Specific Health and Safety Plan**	☑ Readily available	☑ Up to date	☐ N/A
	☐ Contingency plan/emergency response plan	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			
3.	**O&M and OSHA Training Records**	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			
4.	**Permits and Service Agreements**			
	☐ Air discharge permit	☐ Readily available	☐ Up to date	☑ N/A
	☐ Effluent discharge	☐ Readily available	☐ Up to date	☑ N/A
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☑ N/A
	☐ Other permits	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
7.	**Groundwater Monitoring Records**	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
9.	**Discharge Compliance Records**			
	☐ Air	☐ Readily available	☐ Up to date	☑ N/A
	☐ Water (effluent)	☐ Readily available	☐ Up to date	☑ N/A
	Remarks			
10.	**Daily Access/Security Logs**	☑ Readily available	☑ Up to date	☐ N/A
	Remarks			

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
☑ PRP in-house ☐ Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other

Private Party site, estimated costs provided in main report but not detailed below

2. **O&M Cost Records**

☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS ☑ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☑ Gates secured ☐ N/A

Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks – *Residents know to contact Rebecca Fabich if there is trespass on "Pasture Area"*

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☑ No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☑ No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) GW Use Restriction Ordinance enforced by City
Frequency _____
Responsible party/agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☑ N/A
Reports are verified by the lead agency ☐ Yes ☐ No ☑ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☑ No* ☐ N/A
Violations have been reported ☐ Yes ☑ No ☐ N/A
Other problems or suggestions: ☐ Report attached

**ICs for soil left in place still to be finalized*

Also, main report indicates further evaluation may be appropriate to determine if Controlled Groundwater Area can be reduced in extent in some area, or perhaps increased in extent in other areas

2. **Adequacy** ☑ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks _____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☑ No vandalism evident
Remarks _____

2. **Land use changes on site** ☑ N/A
Remarks _____

3. **Land use changes off site** ☑ N/A
Remarks – *There was a planned development (residential and commercial) north of IPC property but it has not moved forward to date.*

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☑ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A
Remarks _____

B. Other Site Conditions

Remarks _____

_____

_____

_____

_____

_____

VII. LANDFILL COVERS ☐ Applicable ☑ N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____
   _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____
   _____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks_____
   _____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
   Areal extent_____ Height_____
   Remarks_____
   _____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
   ☐ Wet areas ☐ Location shown on site map Areal extent_____
   ☐ Ponding ☐ Location shown on site map Areal extent_____
   ☐ Seeps ☐ Location shown on site map Areal extent_____
   ☐ Soft subgrade ☐ Location shown on site map Areal extent_____
   Remarks_____
   _____

9.	**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability Areal extent_____ Remarks_____
B. Benches	☐ Applicable ☐ N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)
1.	**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay Remarks_____
2.	**Bench Breached** ☐ Location shown on site map ☐ N/A or okay Remarks_____
3.	**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay Remarks_____
C. Letdown Channels	☐ Applicable ☐ N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)
1.	**Settlement** ☐ Location shown on site map ☐ No evidence of settlement Areal extent_____ Depth_____ Remarks_____
2.	**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation Material type_____ Areal extent_____ Remarks_____
3.	**Erosion** ☐ Location shown on site map ☐ No evidence of erosion Areal extent_____ Depth_____ Remarks_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active ☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☐ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks_____

F. Cover Drainage Layer ☐ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks_____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks_____

G. Detention/Sedimentation Ponds ☐ Applicable ☐ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks_____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks_____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks_____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks_____

H. Retaining Walls ☐ Applicable ☐ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☑ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☑Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☑ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
   ☑ Good condition ☑ All required wells located ☐ Needs O&M ☐ N/A
   Remarks – *All wells located and condition verified by EPA in September 2009*

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☑ Good condition ☐ Needs O&M
   Remarks_____

3. **Spare Parts and Equipment**
   ☑ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks – *backup pumps and pump repairs can be dealt with in a days time*

B. Surface Water Collection Structures, Pumps, and Pipelines X Applicable ☐ N/A

1. **Collection Structures, Pumps, and Electrical**
   ☐ Good condition ☐ Needs O&M ☑N/A
   Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
   ☐ Good condition ☐ Needs O&M ☑N/A
   Remarks_____

C. Treatment System ☑Applicable ☐ N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers
   ☑ Filters - Bag Filters
   ☑ Additive (*e.g.*, chelation agent, flocculent) Nutrients (fertilizer)
   ☐ Others_____
   ☑ Good condition ☐ Needs Maintenance
   ☑ Sampling ports properly marked and functional
   ☑ Sampling/maintenance log displayed and up to date
   ☑ Equipment properly identified
   ☑ Quantity of groundwater treated annually - *can be calculated based on ~100 gpm target rate*
   ☐ Quantity of surface water treated annually_____
   Remarks_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☑ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Tanks, Vaults, Storage Vessels**
   ☐ N/A ☑ Good condition ☐ Proper secondary containment ☐ Needs Maintenance
   Remarks_____

4. **Discharge Structure and Appurtenances**
☐ N/A ☑ Good condition ☐ Needs Maintenance
Remarks – *both PPIG and BFIG injection galleries operating at time of visit*

5. **Treatment Building(s)**
☐ N/A ☑ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
☑ Properly secured/locked ☑ Functioning ☑ Routinely sampled ☑ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks_____

D. Monitoring Data

1. Monitoring Data
☑ Is routinely submitted on time ☑ Is of acceptable quality

2. Monitoring data suggests:
☐ Groundwater plume is effectively contained ☑ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☑ N/A
Remarks_____

X. OTHER REMEDIES

☑ N/A

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The soil remedy is considered complete, and efforts are underway by the Site team to finalize institutional controls (discussed later in this section under "Institutional Controls") for these specific areas containing the treated soils, at which point the entire site is expected to be deleted from the National Priorities List with respect to soils. The groundwater treatment system has relatively low influent concentrations, and meeting the effluent standards has not been an issue. Groundwater concentrations of PCP have declined over time, presumably due to remedial actions to date (source removal, P&T, and potentially in-situ biodegradation). Concentrations of PCP well above groundwater cleanup standards remain south of I-90 and north of I-90, but protectiveness is provided by a combination of residential well sampling and ICs. The groundwater remedy has recently transitioned from "Phase 1" to "Phase 2" as intended in the 1996 ESD based on "Phase 1" results. Modifications associated with the transition to "Phase 2" included discontinuation of extraction from the PPEG, increased extraction at the BFEG, and changes to the groundwater monitoring and performance monitoring programs. The duration of the groundwater remedy remains uncertain and the estimated timeframe of the remedy should be updated, but the groundwater remedy is progressing and is functioning as intended.

B.	Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

An optimization evaluation called an RSE was conducted in late 2009 and finalized in 2010. The RSE included recommendations pertaining to pumping strategies, process monitoring and reporting, and long-term monitoring. Subsequently a series of modifications were implemented that address these items. These are more fully described in the following letters, which are included in Attachment 2 of the main report:

- *"Approval letter regarding Request for Shutdown of Pressure Plant Extraction Wells" (EPA Region 8 and MDEQ), November 17, 2009*
- *"Approval letter regarding Request for Modifications to Groundwater Monitoring" (EPA Region 8 and MDEQ), March 24, 2010*
- *"Letter regarding Performance Monitoring Requirements for the Groundwater Extraction/Injection System Modifications" (EPA Region 8 and MDEQ), March 26, 2010*

C.	Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

None

D.	Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

An optimization evaluation was recently performed, called an RSE (Tetra Tech, 2010). Most of the optimization recommendations have already been implemented as indicated above.

Attachment 2

Letters from EPA and MDEQ Regarding Changes to Groundwater Remedy

- ***Shutdown of Pressure Plant Extraction*** **(11/17/09)**
- ***Modifications to Groundwater Monitoring*** **(3/24/10)**
- ***Performance Monitoring Requirements*** **(3/26/10)**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 W. 15th STREET, SUITE 3200
HELENA, MONTANA 59626

Montana Department of
ENVIRONMENTAL QUALITY

Ref: 8MO

November 17, 2009

Les D. Lonning
Manager, Technical and Environmental Affairs
Idaho Pole Company
P.O. Box 1496
Tacoma, WA 98421-1496

Re: Request for Shutdown of Pressure Plant Extraction Wells

Dear Mr. Lonning:

The United States Environmental Protection Agency and Montana Department of Environmental hereby grant approval for the request for shutdown of the pressure plant extraction well gallery at the Idaho Pole NPL Site for the purpose of evaluating the gallery's impact on contaminant recovery. This approval is based on discussions that occurred during the Five Year Review Site In section and Remedial System Evaluation meeting on October 29-30, 2009 and the request for shutdown of the pressure plant extraction wells dated November 16, 2009. Please make sure that you document shutdown procedures and any necessary reconfigurations in the next Site quarterly progress report. Based on review of sampling and analytical results, the Agencies will assess whether it is appropriate to leave the pressure plant extraction well gallery shut down, or if it is appropriate to resume its operation. If you have any questions or concerns about our approval process, please call either of us at the following numbers: Lisa DeWitt at (406) 841-5037 or Roger Hoogerheide at (406) 457-5031.

Sincerely,

Lisa DeWitt
DEQ Project Officer

Roger Hoogerheide
USEPA Project Manager

cc: file
D. Smith, BNSF
L. Scusa, MDEQ
J. Vranka, EPA
D. Stremcha, Hydrometrics

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 W. 15th STREET, SUITE 3200
HELENA, MONTANA 59626

Montana Department of
ENVIRONMENTAL QUALITY

Ref: 8MO

March 24, 2010

Les D. Lonning
Manager, Technical and Environmental Affairs
Idaho Pole Company
P.O. Box 1496
Tacoma, WA 98421-1496

Re: Request for Modifications to
Groundwater Monitoring at the Idaho Pole
Company Site in Bozeman, Montana

Dear Mr. Lonning:

The United States Environmental Protection Agency (USEPA) and Montana Department of Environmental (DEQ) hereby grant approval for the following modifications to the existing groundwater monitoring network at the Idaho Pole Company (IPC) Site.

- Currently monitored bioremediation parameters (ammonia, nitrate, nitrite, total alkalinity, bicarbonate alkalinity, sulfate, sulfite, total organic carbon, orthophosphate, and dissolved oxygen) have established that conditions at the site promote bioremediation. Therefore, these parameters no longer need to be monitored. While Dissolved Oxygen (DO) is no longer required as an analytical parameter, DO will continue to be collected as a field parameter.

- The groundwater levels at the Site are currently measured quarterly and select wells are sampled semi-annually around April and September. IPC requests that the water level measurement frequency be decreased to semi-annually and the sampling frequency be decreased to annually. The Agencies agree that not much is gained by measuring groundwater levels quarterly and water level measurements can be decreased to semi-annually. However, groundwater sampling shall continue on a semi-annual basis given

the speed with which groundwater flows, apparent seasonal fluctuations, and the recent modifications to the groundwater extraction/injection gallery. Semi-annual sampling will continue until the next Five Year Review scheduled for 2015 when sufficient analytical results will be available to conduct the first comprehensive statistical evaluation using a Mann-Kendall statistical evaluation.

- Five monitoring wells have consistently had polycyclic aromatic hydrocarbon (PAH) concentrations below the Record of Decision (ROD) cleanup standard or have not had PAH detections. As such, it is no longer necessary to sample PAH annually at the following wells in the monitoring network: 9-A, 19-A, 25-A, 25-B and 26-C

- The only wells at the Site that have continually had PAH concentrations above ROD cleanup standards are 5-A, 15-A, and 22. However, water from wells down gradient of these wells are not currently analyzed for PAH compounds. As such, the Agencies are in agreement with IPC's proposal to add annual PAH analysis of the following wells to the monitoring program in order to define the extent of the PAH plume: 23-A, 23-B, GM-4, GM-5 and GM-6

- Recent data at 16-B and 27-B (46ug/L and 43 ug/L, respectively) indicate that a preferential pathway for contaminant transport in the down gradient portion of the plume is more significant in the B horizon (or possibly deeper) than the A horizon. To better characterize the core of the plume in the B horizon, the Agencies are in agreement with IPC's proposal to add the following wells to the monitoring network; however, these wells will be sampled on a semi-annual basis for PCP: 9-B, 16-B, 24-B, 26-B, 27-B and GM-5.

- Due to statistically clean groundwater sampling locations and monitoring well redundancy, the following wells can be removed from the sampling network: 4-A, 7-A, 10-A, 12-A, 24-Al, 27-A, and GM-7. GM-8 shall continue to be sampled for pentachlorophenol (PCP) at the same frequency as other wells within the groundwater monitoring network as a sentinel well to indicate any potential changes that could occur over time in groundwater flow direction as long as sampling is necessary.

- Updates to the groundwater monitoring plan shall establish contingency triggers such that if any background, source area and/or down-gradient well demonstrates an increase in PCP and/or PAH concentrations above this trigger and the increase is not due to laboratory discrepancy or any other variable (i.e, fieldwork) that could influence an anomaly, then additional monitoring and/or corrective action is required. Updates to the groundwater monitoring plan shall also establish trends analysis that allow for loosening monitoring or maintaining sampling of any wells in the network.

- Well 19-A shall be the background well since the current background well is rarely sampled. However, it is reasonable to limit sampling of this well to once every five years with the contingency that sampling may be changed if unexpected increases are observed in other on-site wells above a contingency trigger.

- Residential wells (Res 1 through Res 7 and Res 9) will continue to be sampled annually.

This approval is based on recommendations from the February 2010 *Remedial System Evaluation Idaho Pole Company Site* Report; the *Groundwater Monitoring Network Optimization* Report; community interviews conducted for the upcoming Five Year Review; recent discussions between Idaho Pole and the Agencies as well as the Request for Modifications to Groundwater Monitoring at the Idaho Pole Company Site in Bozeman, Montana dated March 19, 2010. The upcoming semi-annual sampling may be conducted incorporating the changes discussed in this approval letter. Please make sure that the appropriate documents that support this revised monitoring network are updated and submitted by June 30, 2010. If you have any questions or concerns about our approval process, please call either of us at the following numbers: Lisa DeWitt at (406) 841-5037 or Roger Hoogerheide at (406) 457-5031.

Sincerely,

Lisa DeWitt
DEQ Project Officer

Roger Hoogerheide
USEPA Project Manager

cc: file
D. Smith, BNSF
L. Scusa, MDEQ
J. Vranka, EPA
A. Thorson, Hydrometrics
H. Kaiser, Hydrometrics

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 W. 15th STREET, SUITE 3200
HELENA, MONTANA 59626

Montana Department of
ENVIRONMENTAL QUALITY

Ref: 8MO

March 26, 2010

Les D. Lonning
Manager, Technical and Environmental Affairs
Idaho Pole Company
P.O. Box 1496
Tacoma, WA 98421-1496

Re: Performance Monitoring Requirements
for the Groundwater Extraction/Injection
System Modifications

Dear Mr. Lonning:

On November 17, 2009 the United States Environmental Protection Agency (USEPA) and Montana Department of Environmental (DEQ) granted approval for the request for shutdown of the pressure plant extraction well gallery at the Idaho Pole Company Site for the purpose of evaluating the gallery's impact on contaminant recovery. This approval was based on discussions that occurred during the Five Year Review Site inspection and Remedial System Evaluation meeting on October 29-30, 2009 and the request for shutdown of the pressure plant extraction wells dated November 16, 2009. This letter defines the performance monitoring requirements for this system modification to ensure maximum capture of the most impacted area of groundwater south of I90 (near well 5-A) occurs without losing containment of the plume north of I90 until that area is actively addressed or until the area near well 5-A remediates naturally.

- The Agencies have received email notification on March 22, 2010 from the Rebecca Fabich, the Site water treatment plant operator, that the target rate of 100 gallons per minute (gpm) from the Bark Filled Extraction Gallery (BFEG) has been achieved. The Agencies request that this target rate be maintained as long as the Pressure Plant Extraction Gallery is shutdown and increase this target rate as appropriate. The Agencies understand that the Site water treatment plant operator may need to modify flow rates

based on field conditions. This letter provides authority for the operator to make decisions based on Site conditions without consulting the Agencies as long as these changes are discussed in the quarterly Site progress reports.

- The February 2010 *Remedial System Evaluation Idaho Pole Company Site* report recommends maximizing the amount of water extracted from extraction wells BE-3 through BE-5. The Agencies require monthly flow rates from individual extraction wells be taken for a minimum of two years to ensure that the maximum amount of water is extracted from BE-3 through BE-5. This data should be reported and discussed in the quarterly Site progress reports.

- The Agencies require pentachlorophenol (PCP) concentrations be monitored at GM-4 quarterly as an indicator for a minimum of two years to ensure that sufficient data is collected to perform a single well Mann Kendall statistical analysis. PCP concentration trends at GM-4 will provide valuable information to determine:

    - If PCP concentrations decline rapidly at GM-4 after this change is implemented and approach cleanup goals at GM-4 (and points further down gradient), it will suggest that gaps in capture at the BFEG have been mitigated and also suggest that continuing sources of PCP impacts beneath I-90 and/or north of I-90 are not very significant.
    - If PCP concentrations decline rapidly at GM-4 after this change is implemented but then stabilize well above cleanup goals at GM-4 (and points further down gradient), it will suggest that gaps in capture at the BFEG have been mitigated but that other continuing sources of PCP impacts beneath I-90 and/or north of I-90 are likely significant.
    - If PCP concentrations at GM-4 (and points further down gradient) are not noticeably reduced, it will suggest that the impacts at GM-4 and beyond are more likely due to continuing sources of PCP impacts beneath I-90 and/or north of I-90.

- The February 2010 *Remedial System Evaluation Idaho Pole Company Site* Report recommends sampling the five BFEG monthly for several months to confirm that the highest PCP concentrations are extracted near well 5-A. The Agencies understand that the existing extraction system is not designed for collection of samples from each extraction well without turning off the extraction gallery. The Agencies request a sample be taken from each extraction well with the extraction system shutdown during the upcoming Spring 2010 semi-annual sampling event. While this also doesn't allow IPC to fully illustrate conditions under actual pumping conditions with all wells operating together, it does give some idea of how the concentrations near the BFEG are distributed. This may be an important aspect of the conceptual model which may impact future extraction strategies. After this initial sampling event, the Agencies request that a round of samples be taken from each extraction well once a year for the next two years. The Agencies understand that the extraction system has to be turned off periodically to back flush the system and future sampling events can be taken at the same time back flushing occurs to minimize disruption to the system. Please be sure that an appropriate Standard

Operating Procedure (SOP) is developed for this sampling event and incorporate this SOP into the revised Sampling and Analysis Plan.

- The February 2010 *Remedial System Evaluation Idaho Pole Company Site* Report recommends injecting as much water as feasible at the Bark Filled Injection Gallery (BFIG) and use valves to focus as much of the injection as possible in the portion down gradient of well 5-A. The Agencies want to see more water injected into the BFIG because modeling results using MODFLOW illustrated that injection at the BFIG somewhat enhances containment provided by the BFEG. It is unfortunate that injection can't be controlled at individual injection wells as recommended in the RSE, so the Agencies want to go with the concept that you inject as much as possible at the BFIG as a whole while injecting the remainder at the PPIG. The Agencies request monthly flow rates be taken and report the totals going to each of the injection galleries in the quarterly Site progress reports. The Agencies understand that the Site water treatment plant operator may need to modify injection flow rates between the two injection galleries based on field conditions. This letter provides authority for the operator to make decisions based on Site conditions without consulting the Agencies as long as these changes are discussed in the quarterly Site progress reports.

The upcoming semi-annual sampling may be conducted incorporating the performance monitoring changes discussed in this letter. Please make sure that you present and discuss all performance monitoring results in future Site quarterly progress reports. Based on review of sampling and analytical results after two years, the Agencies will assess whether it is appropriate to leave the pressure plant extraction well gallery shut down, or if it is appropriate to resume its operation. Future monitoring requirements will also be developed. Please ensure that the appropriate Site documents that support this revised performance monitoring network are updated and submitted to the Agencies by June 30, 2010. If you have any questions or concerns about our approval process, please call either of us at the following numbers: Lisa DeWitt at (406) 841-5037 or Roger Hoogerheide at (406) 457-5031.

Sincerely,

Lisa DeWitt
DEQ Project Officer

Roger Hoogerheide
USEPA Project Manager

cc: file
D. Smith, BNSF
L. Scusa, MDEQ
J. Vranka, EPA
A. Thorson, Hydrometrics
H. Kaiser, Hydrometrics

Attachment 3

Interview Summary Forms

Idaho Pole Company NPL 5-Year Review Community Interview Questions
October 30, 2009

Person interviewed: Les Lonning, Director, Technical and Environmental Affairs, McFarland Cascade Pole and Lumber Company, (253) 572-3033, lesl@ldm.com

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. The project has taken longer than I had hoped but the process of remediation is appropriate for the site.

2. What effects have site activities/operations had on the surrounding community?
    a. The neighbors to the north have not been detrimentally affected. The impression is that the Site has been remediated and people informed.
    b. The neighbors to the south have opposite impression. Not well informed and not amenable to industrial redevelopment.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
    YES NO

    If yes, what are they?
        i. Neighbors to the south are not amenable to the increased traffic that would come from industrial redevelopment.

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

5. Do you feel well informed about site progress and activities? **YES** NO

6. What other comments or suggestions do you have?

    a. There's a fairly significant gap in time of keeping the public informed. We need to do more outreach.

Interviewers: Roger Hoogerheide, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
October 30, 2009

Person interviewed: Rebecca Fabich
Consultant for Idaho Pole Company/McFarland Cascade
(406) 570-0002 (cell), rmfabich@msn.com

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. Everyone's goal is to improve the site. I feel passionate about the property and area. Cleanup has come a long way in the last seven years. Excellent job.
    b. Les Lonning of McFarland Cascade (Environmental Manager) is open to improvements in maintenance and other ideas.

2. What effects have site activities/operations had on the surrounding community?
    a. They've only interfered minimally with Montana Ready Mix in that the operations slowed down his trucks a little. I've let him park stuff on site. O&M is not interfering, only minimally. I've always called residents and talked with them. Residents have my cell phone number and I try to be accessible if they need me.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES **NO**
    a. Have not heard neighbors complain, everything is cool. Nothing in past five years.

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

5. Do you feel well informed about site progress and activities? **YES** NO

6. What other comments or suggestions do you have?

    a. It would be beneficial to ID Pole if the public were kept in the loop and informed. It won't be difficult to present the site favorably and get community support. In this case the PRPs have been responsible.

Interviewer/s
Roger Hoogerheide, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
October 30, 2009

Person interviewed: Ada Montague, Planner, Gallatin County Planning Dept., (406) 582-3130, ada.montague@gallatin.mt.gov

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. I don't really know too much about Idaho Pole Federal Superfund Site. I know more about another site, the state Superfund site "Bozeman Solvent."

2. What effects have site activities/operations had on the surrounding community?
    a. Any new development would have to build a water system. The County would require that kind of infrastructure.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
    a. No, but that doesn't mean they don't exist. I'm just not aware.

4. Do you feel the remedy at Idaho Pole is effective?
    a. Yes, according to your website it appears to be effective but I would need more information.

5. Do you feel well informed about site progress and activities?
    a. No.

    If no, how would you like to receive information?
        i. I would suggest you ask to be on the County Commission Agenda. They meet Tuesday mornings at 9 a.m.

6. What other comments or suggestions do you have?
    a. You might want to look at the Greater Bozeman Transportation Plan (TCC). There might be an access acquisition that TCC might want.
    b. I have a primary concern about long-term health effects of PCP. (Note: the 5-year review team then explained PCP to her, in addition to sending a fact sheet on Pentachlorophenol from ATSDR/US Dept. HHS

Interviewers:
Colin McCoy, Lisa DeWitt, Roger Hoogerheide, Doug Sutton, Rob Greenwald, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
October 30, 2009

Person interviewed: Sean O'Callaghan, Planner, Gallatin County
sean.ocallaghan@gallatin.mt.gov, (406) 582-3130

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. There is not a lot of local knowledge about the site. I don't know how the pieces fit together if we're trying to develop the area. He's been here eight years and is not informed about remediation hazards, ICs, groundwater and soil, land use. How does the existence of the site, restrictions, controls play into development?

2. What effects have site activities/operations had on the surrounding community?
    a. Some development constraints; The controlled GW presents constraints but not burdensome; Complicated issues like road extension, i.e. Oak Street east of Rouse.
    b. MSU Professor Cyndi Crayton uses ID Pole Site as project.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
YES **NO**

If yes, what are they?
It's unclear how much the community knows.

4. Do you feel the remedy at Idaho Pole is effective?
    a. It's not clear as I don't know what has been done. I need to look at the data. We don't have enough information to answer the question. Not sure what the metrics for success are.

5. Do you feel well informed about site progress and activities? YES **NO**

If no, how would you like to receive information?
A public meeting to put it back on our radar screen; more press for the site; meet with the "right" people; a meeting with commissioners; Get on agendas and do PowerPoint. County commissioners meet weekly on Tuesday at 9 a.m.; The City meets on Monday evenings.
Upload monitoring results to website.

6. What other comments or suggestions do you have?
    a. I suggest talking to both the City and County Commissioners;
    b. Should look at the Greater Bozeman Transportation Plan.
    c. Resource: Cyndi Crayton, Professor MSU on dewatering issue; could do a "capstone course" on redevelopment including contamination constraints.

d. From a planning perspective, ICs are not great, but the way we (ID Pole) have them set up is okay. Want to know who's going to enforce ICs.
e. Having higher density is better from a planner's perspective so it's better if the area's annexed in. (to City)
f. The NorthEast Neighborhood Assn. is incredibly active.

Interviewer/s
Colin McCoy, Lisa DeWitt, Roger Hoogerheide, Doug Sutton, Rob Greenwald, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
October 30, 2009

Person interviewed: Brian Krueger, Planner, City of Bozeman
(406) 582-2260, bkrueger@bozeman.net

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
   a. There are more questions than impressions. The impression is that little or no activity has taken place and that it's status quo. The site has been sitting there, folks have done their jobs, but there's little or no work that has taken place from what we can see. Only impacts City when something is "going on." We may not be apprised of things until it's cleaned up. There's not enough information to know.

2. What effects have site activities/operations had on the surrounding community?
   a. The site has not been developed, but neither have the surrounding area and the I-90 Corridor. There hasn't been a lot of industrial development in the city. This site is not responsible for the lack of development. The lack of infrastructure is mostly responsible. The Planning Department would like to see the site developed with industry because the City vision is for an industrial area there. Industrial zoning definition is pretty broad with what could be done with the area. Would have to extend infrastructure. We do have a plan for utilities infrastructure.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they?

   The City has planned extensions of water, sewer down Bohart Lane (eventually). The question came up as to restrictions on extensions due to contaminants and ICs. The project is not on capital improvement radar just yet. Want to know what additional costs would be for utility installation due to site constraints and GW impacts. Additional costs might make a project unfeasible and that's a concern to the City.

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

   From my knowledge, yes. Have questions about the long term restrictions, potential easements and where ICs will be.

5. Do you feel well informed about site progress and activities? YES **NO**

   If no, how would you like to receive information?

Would like GIS layer of remediation sites being monitored and cleaned up by DEQ and EPA.

6. What other comments or suggestions do you have?
    a. The City has updated its fire management plan and plans a new fire station in the area. No time table yet. It's still unfunded.
    b. The City has reviewed proposal from NorthWest Energy to significantly expand its substation (double in size) near the site. According to Krueger, NW Energy feels it's exempt from zoning, but City says it's not exempt. NW Energy has design and engineering underway for expansion.
    c. Residences impacted by water restrictions.
    d. Annexation of the entire area into the City would make development easier. The only way the City does annexation is if an individual comes to request it. An issue would be the homeowners. The City could annex before improvements. Interested in water rights. Look for Right of Way easements.
    e. Some of the unannexed property belongs to IPC. IPC can come to City and ask to have property annexed. There is a process where there is comment. Can't pull in other properties against their will.
    f. ID Pole property limits and maps, including future land use maps, at www.bozeman.net (departments, planning, plans). See GIS Department for annexation and zoning maps.

Interviewers:
Colin McCoy, Lisa DeWitt, Roger Hoogerheide, Doug Sutton, Rob Greenwald, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
January 25, 2009

Person interviewed: Debbie Arkell, Director of Public Service, City of Bozeman
darkell@BOZEMAN.NET, (406) 582-2315

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?

   Valuable piece of land for community if it were able to be redeveloped

2. What effects have site activities/operations had on the surrounding community?

   Issues with groundwater because development would involve bringing municipal water onto the Site.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they?

Water. Also when it comes time to be redeveloped, we need to know what can and cannot be disturbed

4. Do you feel the remedy at Idaho Pole is effective

Of what I know, remedy is very effective

5. Do you feel well informed about site progress and activities? YES **NO**

If no, how would you like to receive information?

Five years is a long time to wait to get information.

6. What other comments or suggestions do you have?

None but would appreciate getting periodic updates as the Agencies bring closure to the Site. Especially interested in the partial deletion designation.

Interviewer/s
Lisa DeWitt, Roger Hoogerheide

Idaho Pole Company NPL 5-Year Review Community Interview Questions
March 8, 2010

Person interviewed:
Alan English , Manager, Gallatin Local Water Quality District
(406) 582-3148; alan.english@gallatin.mt.gov

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project? Until last year, thought was just sitting there with not much going on. Now there seems like a lot of activity with communication. Been in meetings with agencies so am more aware of things going on. Biggest issue has been communication. For the soils, probably all that has been done is appropriate; there's more to be done on the groundwater and GWTS. Want to look at the data and take a hard look at the smear zone under the freeway. Maybe there's not much we can do. We might advocate for more.

2. What effects have site activities/operations had on the surrounding community? Was not around early on. I've been here since 2000. In last five years, ID Pole was a non-issue. People would call and I'd show them GW control maps. Residents down gradient were inspected early on and okay.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
YES NO

   If yes, what are they? People who call Alan ask about groundwater contamination, where is it? Could it get into East Gallatin? Is Rocky Creek contaminated?

4. Do you feel the remedy at Idaho Pole is effective? **YES** and **NO**

   Yes for soils with a few questions; No or maybe for groundwater. Has a number of questions for GW. One big question is groundwater cleanup cost effective? It's pretty expensive. Is it worth the results? This is a hard issue. His main focus is water quality and keeping the public informed. Wants to make sure did a good enough job to see if GW plume has changed or not.

5. Do you feel well informed about site progress and activities? **YES** (now) NO
   Have had an opportunity to review documents. Request more on web and linking to EPA with www.gallatin.mt.gov/GLWQD

6. What other comments or suggestions do you have?
   Concerned about dioxin in soil, why is soil considered done? Answer: LTU didn't treat dioxin so there's a cover over the soil. If not for cover soil there would be more restrictive use. Will put administrative controls

Also questioned carrier fuel TPH. Where did it go? TPH analysis?

Hydrocarbons – large quantity on the water table. Why are hydrocarbons not included? Is there free product still? Answer: hydrocarbons break down faster.

Was suggested more well testing: B series sampling with another data point. 16 B and 25 B.

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
November 4, 2009

Person interviewed: Dan Figgins, Resident in City

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. Spent lots of money on cleanup. It seemed like there was study after study. He conceded that the microbes (LTU treatment) did make the cleanup faster, and he added that's a good thing.

2. What effects have site activities/operations had on the surrounding community?
    a. Property values have increased in area. Will Site deletion impact property values? Dan said he has used the SF Site as tax argument that SF makes the land not able to be developed and would like it to stay that way.
    b. If the land on the Site has value then my land will hae value. If the land becomes developable, it will be developed to a trailer court and I'm not happy about that.
    c. The water still needs to be tested. Need to continue sampling annually.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
    YES NO

    If yes, what are they?
    Development concerns.

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

    Soil and water, yes.

5. Do you feel well informed about site progress and activities? **YES** NO

    Want info via snail mail. And would like a residents meeting, not a big public meeting. Want to be kept up to date.

6. What other comments or suggestions do you have?
    a. Most of us have been here a long time and don't want to leave. We don't care if property values go up, we just don't want to be forced out by having to pay higher property taxes.

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
November 4, 2009

Persons interviewed: Jake and Georgia Kroon (pronounced Krone) Residents in County

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. We are thankful for the cleanup and other things like monitoring wells. Otherwise we would continue to have concerns.
    b. Please continue checking the water frequently.
    c. Never seen a sheen on our water or taste petroleum or oil.

2. What effects have site activities/operations had on the surrounding community?
    a. Before cleanup we could see impacts on the GW. Now, we don't see it anymore.
    b. It gave us a spooky feeling at first to hear that the area was declared a SF Site. Now we're glad you have it cleaned up.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they?

   Unique property because surrounded by StoryMill and IP properties. Could get annexed if surrounding property is incorporated.

   We would not want to be annexed. We can have animals now and might not be able to if we were in the City. Part of our family's livelihood is raising bison.

   We are concerned about development. We don't want it subdivided. We don't want a park; open land would be okay.

   We want the county road fixed because it gets used a lot.

   When will development occur? (Note: we answered at least two years)

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO
   As far as we know.

5. Do you feel well informed about site progress and activities? **YES** NO
   Rebecca keeps us on top of things, like the letters she sends out. We would like factsheets. We would like small get-together with residents.

   We also appreciate receiving sampling results.

6. What other comments or suggestions do you have?
    a. We would like to be sampled for oil in the water, although we never detected it.

b. They asked about Tribromophenol and about harm to human health by Penta. (Note: we told them they are not harmful below levels within safety standards)
c. There are transients on the property.
d. More about development: Would not like a trailer park. Would like small acreages to retain the character of the area with deer, wildlife, etc.

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
November 4, 2009

Person interviewed: John Bailey, Jr., resident, owner of DT business, The Meat Shoppe

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
    a. Hard to say as I don't know what's been done. If it would have been cleaned up when IP wanted to it would have been taken care of long ago. It took too much time, and who knows if you got the plume.

2. What effects have site activities/operations had on the surrounding community?
    a. Talk of development. I would not like development. I lived there all my life.
    b. Things need to be spelled out regarding annexation. I need to see a plan.
    c. Against high density.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
    YES NO

    How do you know it's cleaned up and not just a push for development. We have to take your word for it.
    Is there any guarantee if sewer lines were dug that the GW contamination wouldn't seep out?

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

    Everything that can be done is being done.
    I've never noticed a sheen on my water.

5. Do you feel well informed about site progress and activities? YES **NO**

    Would like small group meetings with residents. Also a fact sheet.
    We feel removed, don't know what's being done.

6. What other comments or suggestions do you have?
    a. If you run into a pocket of contamination in my well, who's responsible? (We answered McFarland Cascade)
    b. Have not tasted or smelled oil but would like us to sample well for petroleum.

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
November 4, 2009

Persons interviewed: Kay Barnett, Jim Whittle, Residents in County

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
   a. People wonder if the Site would have cleaned up on its own. If "Mother Nature" took care of it wouldn't waste so much money. But on the other hand, the microbes apparently make it go faster, which is a good thing.

2. What effects have site activities/operations had on the surrounding community?
   a. Am more concerned with water on shallow wells. The water is still being tested and we have no problem with that. Keep the testing at least every year because the longer you go the more people will forget about it and that's bad.
   b. We do have oil (a sheen) on the water. Our stock haven't been sick though. (Note from team: Will sample for TPH in near future)

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they?

   Oil film on water; Jim says he went through throat cancer treatment (radiation and chemo) and asked if his cancer could be related to the previous contamination? He added , "I guess there's no way of knowing."

   Also, Kay and Jim were adamant that they don't want to be annexed in. (They live on the county side).

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO
   a. Both soil and water remedy effective, have cleaned up.

5. Do you feel well informed about site progress and activities? **YES** NO
   a. Rebecca keeps us informed. We would like more info on the 5-year review. They would like a resident meeting. Also, snail mail is better for them, not internet, as they don't have access.

6. What other comments or suggestions do you have?
   a. Why is money always the issue?
   b. Want an informal residents meeting and new information
   c. What is the film on the water?

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
November 4, 2009

Person interviewed: Greg Poncelet, President, Montana Ready Mix and Crane Service (located near IP), 209 E. Cedar, Bozeman, MT 59715; (406) 586-0909, info@montanacraneservice.com

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
   a. McFarland Cascade may have spent more money than necessary. No problems, but the test soil might have been misread by the "first folks."
   b. Long before the buildings were torn down, the Site was overly studied. No problems since then, though.
   c. Would like it commercially developed. It could also be a park. I would ask for that because I like nature and would have a green view.

2. What effects have site activities/operations had on the surrounding community?
   a. No impact since IPC gone.
   b. There was a problem with the plume but the economy has more of an impact on the lack of development, even now with the rail spur. Development is still going to be a tough row to hoe.
   c. Utilities aren't cheap and getting them to properties will be a challenge.
   d. Portion of MCS property will be developed into residences and a park.
   e. SF Site is not the only impediment to development.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they?

   The NorthEast Neighbors Assn. wants to turn the area into a park or soccer field. Don't know for sure because NE Neighbors don't invite me. I've heard they want things like a round-about, which is nonsense. I don't like that idea.

   We need to run trucks. This area historically has had lots of trucks here because of all the business that dates back a long time.

4. Do you feel the remedy at Idaho Pole is effective? **YES** NO

   Do not see results but if the Site is eligible to delete (partial deletion) remedy is probably effective.
   Pumping carbon through the water is working. It's unfortunate that Montana has such high water standards. It's working though, and that's the whole idea.

5. Do you feel well informed about site progress and activities? YES **NO**
   Would like information via internet and email, fact sheets or annual report, public meetings. I like the idea of a small, residents meeting.

6. What other comments or suggestions do you have?
    a. McFarland Cascade was made to look worse than they are. They got beat up more than they should have.
    b. I'm all for redevelopment.
    c. Not worried about government's ability to work SF Sites.
    d. Would like to see it (the Site) turned loose and get delisted and developed.
    e. I would be interested in hooking up to utilities.

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Idaho Pole Company NPL 5-Year Review Community Interview Questions
March 8, 2010

Person interviewed:
Christine and Kevin Huyser, Owners, Stockyard Café

1. What is your overall impression of the Idaho Pole Company National Priority List (NPL) project?
   Been uninformed but knew it was happening. Somebody's on top of it. Bought property 5 years ago. The plume seems to be shrinking. Phase I testing showed nothing. They're on city water; not on city sewer. Some people have wells tested. Pretty unaffected by site activities.

2. What effects have site activities/operations had on the surrounding community?
   Haven't seen any evidence of cleanup, it's not a hot topic. Wanted to know if the creek is affected? Answer: the flow in the creek would dilute PCB but no evidence of it though.

3. Are you aware of any community concerns regarding the Idaho Pole NPL Site?
   YES NO

   If yes, what are they? Some concerns are being annexed into the city, taxes increased 7 times and rezoned. Infrastructure going in would be great. No environmental concern.

4. Do you feel the remedy at Idaho Pole is effective? No opinion.

5. Do you feel well informed about site progress and activities? YES **NO**

   If no, how would you like to receive information? Mail information to Christine and Kevin Huyser, 402 Bonner Lane, Bozeman, 59715

6. What other comments or suggestions do you have?
   Hope they get it done because would help us with development and infrastructure. They're company is "Wake Up, Inc."

Interviewers: Roger Hoogerheide, Lisa DeWitt, Mary Ann Dunwell

Attachment 4

Notices of Third Five-Year Review

- **Bozeman Daily Chronicle (10/25/09)**
- **Fact Sheet Delivered to Residences within 1 Mile (12/11/09)**
- **Promotion for Public Meeting of May 6, 2010**

CLUBS AND ORGANIZATIONS

Five-Year Review of Cleanup at the Idaho Pole Company Superfund Site

Montana Department of Environmental Quality

The U.S. Environmental Protection Agency (EPA) and Montana Department of Environmental Quality (DEQ) are conducting a Five-Year Review on the Idaho Pole Company Superfund Site. A Five-Year Review is a regular checkup on a Superfund site to ensure that cleanup decisions continue to protect people and the environment. The Five-Year Review at the Idaho Pole Company Superfund Site will be completed in 2010. The Site is located near the northern limits of Bozeman, Montana. This will be the Site's third five-year review.

The review team is composed of an EPA Remedial Project Manager, DEQ Project Officer and their consultants. The consultants are neutral parties. The team will address the status of the cleanup and the laws that apply to the Superfund Site. The soil component of the remedy has achieved the cleanup levels specified in the 1992 Record of Decision. The ground water treatment system continues to operate. A Controlled Groundwater Use Area was created in 2001 under State law.

The review team members collect information about Site cleanup activities. They talk with people who have been working at the Site over the past five years, as well as local officials, to see if changes in resources, working conditions, local policy or zoning might affect the original cleanup plan. The team will visit the Site to see if the water treatment facility is working properly. They may take new samples and they will review records of activities during the past five years. The DEQ and EPA will also be meeting with citizens individually or as a group about the cleanup.

If you know anything about unusual activities at the Site, such as trespassing or odors, or have other concerns, please let the team know. You may submit written comments and mail them to:
Lisa DeWitt, Project Officer
DEQ Remediation Division, P.O. Box 200901, Helena, MT 59620-0901

If you would like to learn more about the Site or the review you may visit:

- DEQ's Remediation Division office at 1100 North Last Chance Gulch in Helena.
- EPA's Montana Office at 10 W. 15th St. in Helena
- Bozeman Public Library at 626 E. Main St. in Bozeman
- Online at ***http://www.epa.gov/region8/superfund/mt/idaho_pole/index.html***

For more information about the review:

Lisa DeWitt, DEQ Project Officer, (406) 841-5037, ***lidewitt@mt.gov***

72nd Wedding Anniversary

Cleo and Claire (Marie) Berdahl

celebrated their 72nd wedding anniversary on October 10, 2009. Married in Dunn Center, ND in 1937, they were blessed with five children; Jerry, Myron, Amy, Loretta and Orley; 21 grandchildren, 34 great-grandchildren and 2 great-great-granddaughters (so far). Before moving to Bozeman in 1986, they lived in North Dakota where Cleo worked 40 years for NP/BN railroads and Claire spent 36 years as a teacher. Sharing in their lives is a blessing for each of us.

IDAHO POLE SUPERFUND SITE

FORMER POLE TREATING PLANT
BOZEMAN, MONTANA

DECEMBER 2009

SITE STATUS

The soil cleanup at the Idaho Pole Company site has been completed. However, the remedy left treated waste in place on approximately 6 acres on Site above unrestricted use and unlimited exposure levels. Groundwater continues to be treated. A Five-Year Review of the remedy is underway to evaluate the implementation and performance of the remedy to determine if the remedy continues to be protective of human health and environment. This is the Site's third five-year review and is required under Federal Superfund Law.

UPCOMING COMMUNITY MEETING

EPA and DEQ will hold a public information meeting in Bozeman in the near future to discuss the Idaho Pole Site cleanup.

FACILITY AND SOIL CLEANUP OVERVIEW

Idaho Pole Company (IPC) operated a wood treating facility near the northern limits of Bozeman from 1945 until the plant's closure in 1997. Plant operations included using creosote and later pentachlorophenol (PCP) in carrier oil to preserve wood. These operations resulted in releases of PCP, polynuclear aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins, and polychlorinated dibenzofurans to soil and groundwater. Site soils and groundwater were listed on the Superfund National Priority List (NPL) in June 1986. In September 1992, the Montana Department of Environmental Quality (DEQ) in cooperation with the United States Environmental Protection Agency (EPA), specified cleanup actions in a Record of Decision (ROD). The ROD established cleanup levels for the contaminants of concern and outlined a selected remedy. The remedy was later modified in Explanations of Significant Differences issued in May 1996 and in November 1998.

A lined Land Treatment Unit (LTU) and retention pond were constructed for biological treatment of contaminated soils and disposal of oily wood treating fluids. All accessible contaminated soils, comprising an approximate 24,100 cubic yards, were excavated and treated on the Land Treatment Unit.

Soil treatment was complete once the soils met the ROD soil treatment levels. Two pits were then excavated on-site and the treated soil, along with the filter sand from the LTU, was placed in each of the pits and covered with 12 inches of clean fill to prevent direct contact. EPA has certified that the soils cleanup has been fully performed and completed in accordance with the ROD.

U.S. EPA
Region 8 - Montana Office
10 W. 15th St., Suite 3200
Helena, MT 59626
Attn: Roger Hoogerheide
Return Service Requested

Contacts:

U.S. Environmental Protection Agency
Roger Hoogerheide, Project Manager
1-800-457-2690 (toll free)

MT Department of Environmental Quality
Lisa DeWitt, Project Officer
(406) 841-5037

Idaho Pole Company
Les Lonning, Project Manager
1-800-841-7809

BNSF Railway Company
Dave Smith, Project Manager
(406) 447-2307

Information Repositories:

Bozeman Public Library
220 East Lamme Street
Bozeman, Montana 59715

U.S. EPA Montana Office
Federal Building, Suite 3200
10 West 15th Street
Helena, Montana 59626

Facility and Soil Cleanup Overview — Continued

The approximate 6-acre area where the treated soil was placed is restricted use area and a survey has been completed to identify the area. The Idaho Pole Company will file a Notice of Institutional Control with the Gallatin County Clerk and Recorder that certifies completion of the soil component of the remedy. With the filing of the Notice of Institutional Controls, development of this 6-acre area is prohibited (including utilities) without specific approval from the property owner and the EPA.

Groundwater Cleanup Overview

A groundwater remediation system (GRS) was installed to accelerate the removal of dissolved phase PCP and PAH compounds from the groundwater beneath the Site. Construction of the GRS began in 1996 and was completed in 1997. Approximately 392 million gallons of groundwater have been treated to date. Using this pump and treat system, concentrations of PCP and PAH in the groundwater have decreased significantly over the past 12 years. A Controlled Groundwater Use Area was created in 2001 to prevent construction of new wells in the vicinity that may pose a threat to human health and to protect the groundwater remedy. Since the groundwater has not yet been restored to its intended beneficial use as a drinking water source, the Idaho Pole Company is required to continue to pump and treat groundwater until groundwater has been restored to its intended use.

WWW.EPA.GOV

WWW.DEQ.MT.GOV

Future Actions

Idaho Pole Company will continue to operate the groundwater treatment system and conduct groundwater monitoring.

Promotion of Public Meeting for May 6, 2010
Idaho Pole Site

- Postcards to residents/property owners within one-mile radius, to address name "and current resident" to address name, mailed so residents receive postcards with one week of the meeting

- Flyers: Distributed by EPA RPM to be posted in public places such as Health Department, City and County buildings, Library, near the site, etc.

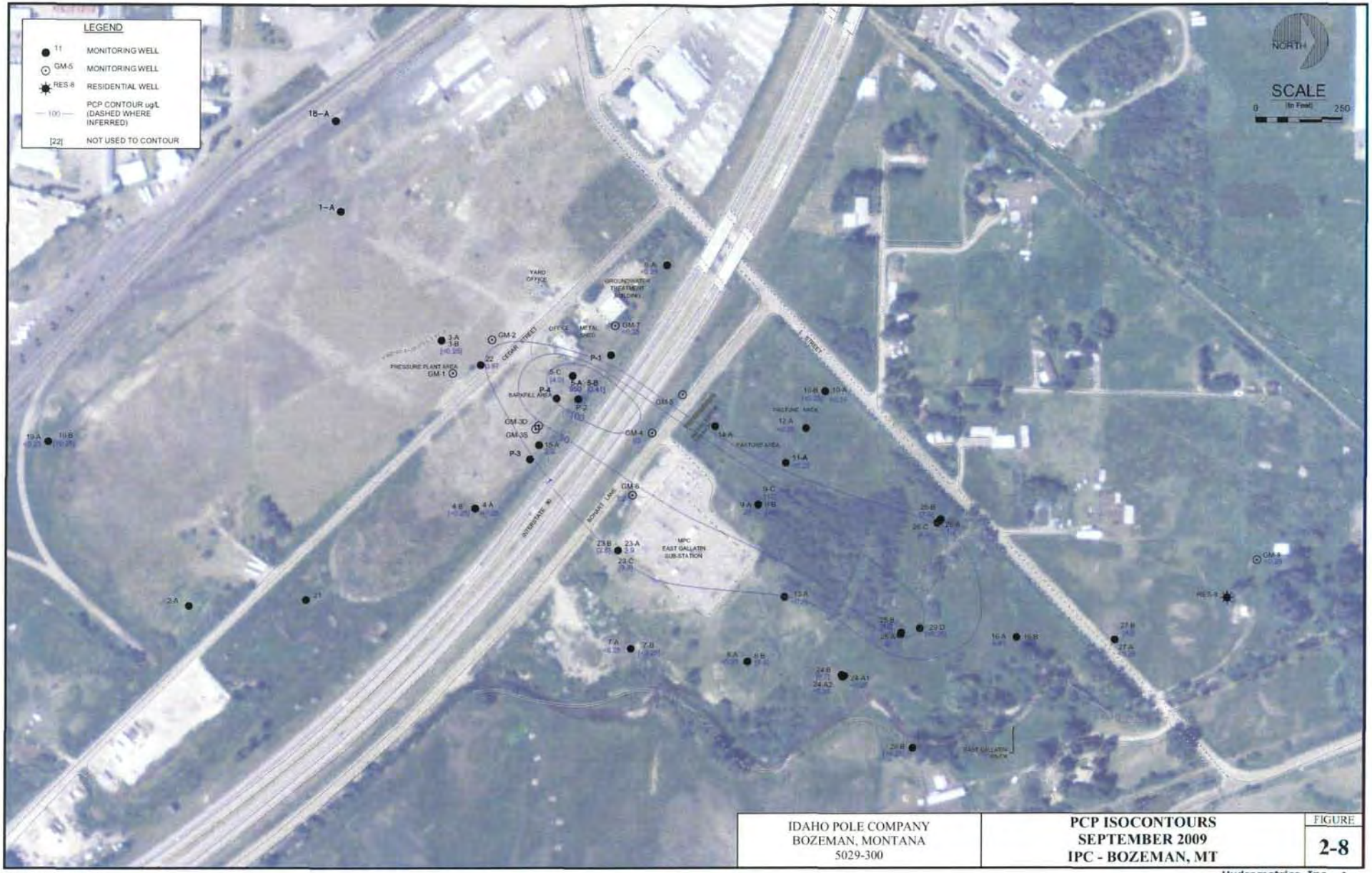
- Placed an online community calendar posting request to Daily Chronicle on April 19, 2010

- Newspaper ad placed in Daily Chronicle

- News release April 26, 2010 to Bozeman news media, AP and other interested news outlets/community partners, and the state NewsLinks wire service

Attachment 5

Recent Groundwater Plume Maps for PCP
(Prepared by Hydrometrics)



IDAHO POLE COMPANY BOZEMAN, MONTANA 5029-300	**PCP ISOCONTOURS SEPTEMBER 2009 IPC - BOZEMAN, MT**	FIGURE **2-8**

UPDATE TIME: 12:49 PM
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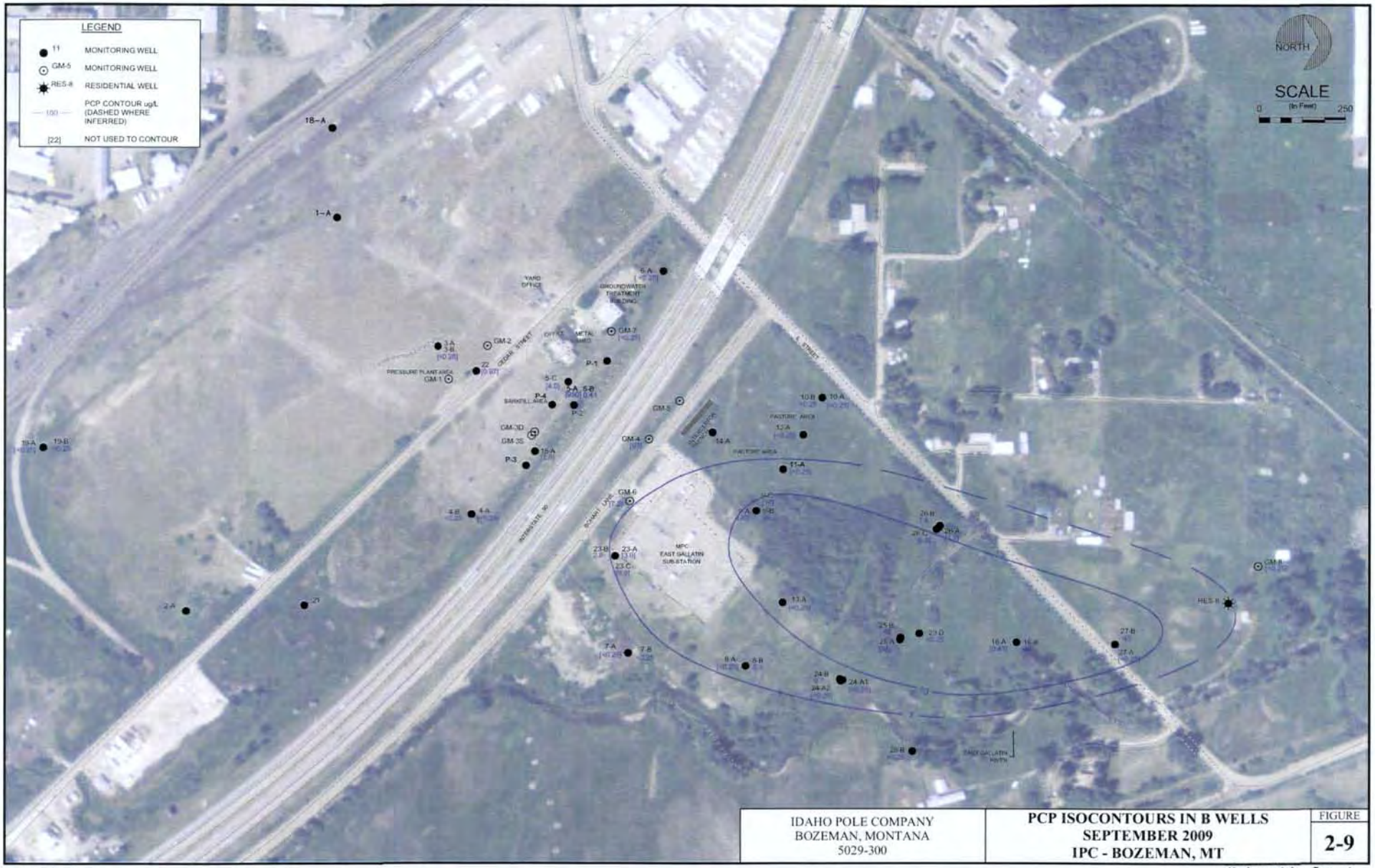
Hydrometrics, Inc.
Consulting Scientists and Engineers



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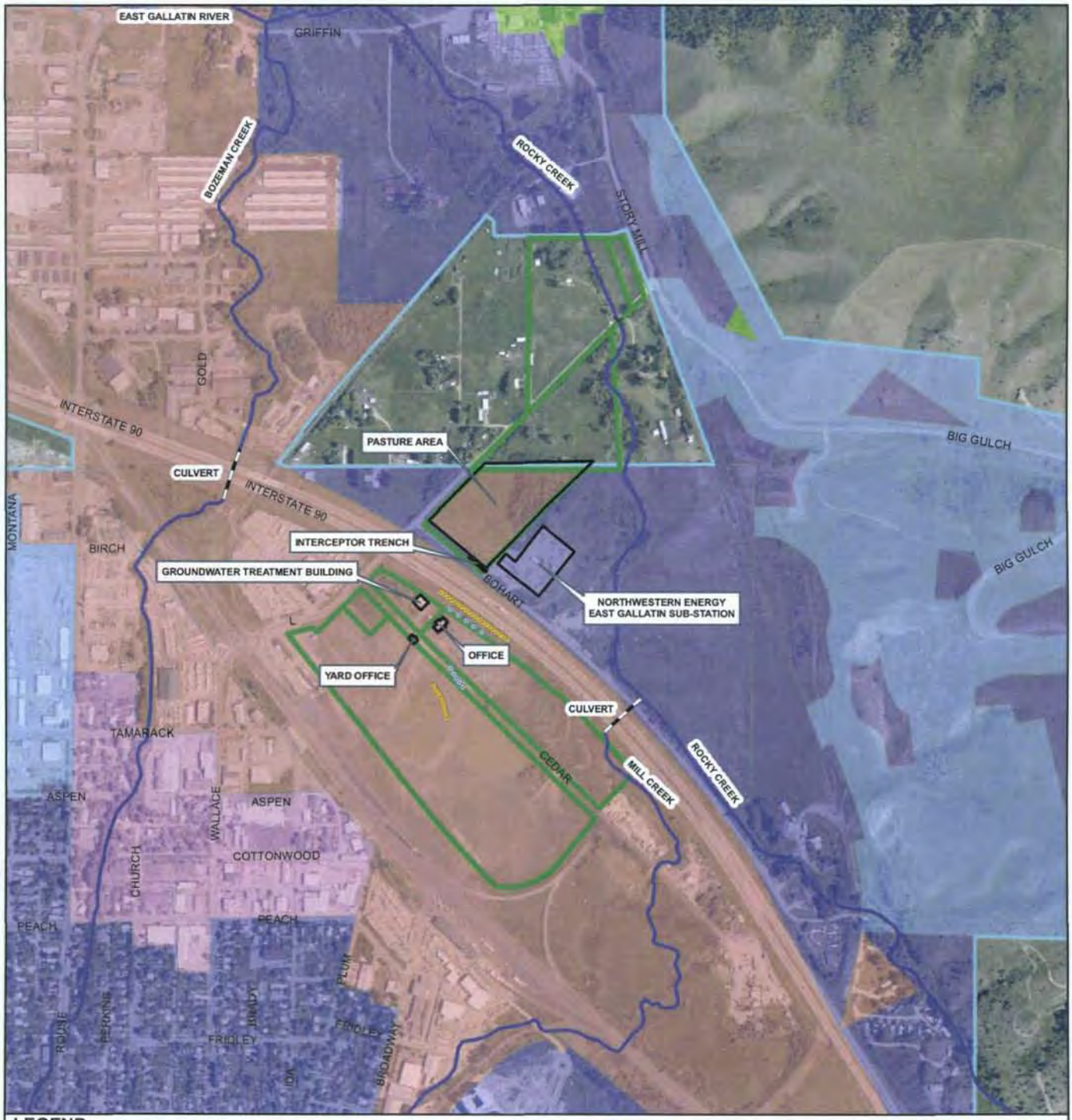
Hydrometrics, Inc.
Consulting Scientists and Engineers

Attachment 6

Existing Zoning and Future Land Use



LEGEND

- PARCEL - IDAHO POLE COMPANY (Source: NRIS-Gallatin County Cadastral, July 2009)
- BOZEMAN CITY LIMITS (Source: City of Bozeman GIS Department, 2004)
- EXTRACTION WELL (Source: Figure 1 from 5-Year Review, 2005)
- INJECTION WELL (Source: Figure 1 from 5-Year Review, 2005)

EXISTING ZONING (Source: City of Bozeman GIS Department, 2004)

- BUSINESS
- HISTORIC MIXED USE
- MANUFACTURING
- PUBLIC LANDS
- RESIDENTIAL

N

350 0 350 700

Feet

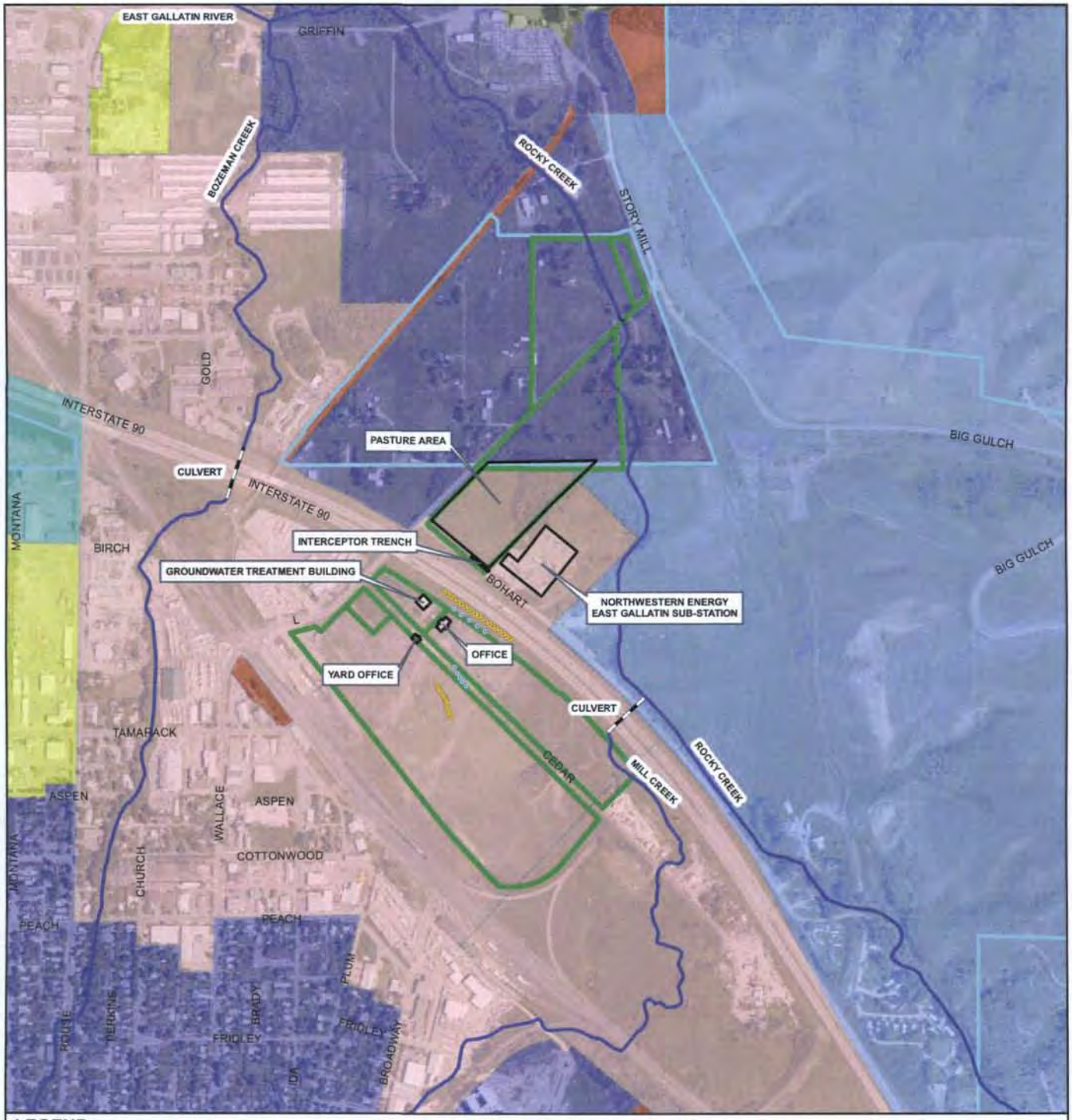
TETRA TECH EM, INC.

Idaho Pole

Bozeman, Montana

SITE MAP - EXISTING ZONING

Site_Map_Existing-Zoning_040210.mxd - DWH - TtEMI



LEGEND

- PARCEL - IDAHO POLE COMPANY (Source: NRIS-Gallatin County Cadastral, July 2009)
- BOZEMAN CITY LIMITS (Source: City of Bozeman GIS Department, 2004)
- EXTRACTION WELL (Source: Figure 1 from 5-Year Review, 2005)
- INJECTION WELL (Source: Figure 1 from 5-Year Review, 2005)

FUTURE LAND USE (Source: City of Bozeman GIS Department, 2009)

- COMMUNITY COMMERCIAL MIXED USE
- INDUSTRIAL
- PARKS, OPEN SPACE, AND RECREATIONAL LANDS
- PRESENT RURAL
- PUBLIC INSTITUTIONS
- REGIONAL COMMERCIAL AND SERVICES
- RESIDENTIAL

350 0 350 700
Feet

TETRA TECH EM, INC.

Idaho Pole
Bozeman, Montana

SITE MAP - FUTURE LAND USE

Site_Map_Future-Land-Use_040210.mxd - DWH - TtEMI

Attachment 7

Illustration of Controlled Groundwater Area and Parcels Near Downgradient Edge of Plume, and CGA Decision

dresses and places of interest.

Illustration of Conceptual Groundwater Flow Path Relative to Downgradient Extent of the CGA

Map from google maps (tax info added by GeoTrans based on Info from:

http://gis.gallatin.mt.gov/general_viewer/

Tax parcel line from google, consistent with County on-line viewer referenced above

ID Approximate MW Location

Conceptual GW flow path along creek

Tax Code	Owner	Public Water and Sewer
RGH9592	Idaho Pole Company	No
RGH9812	Blue Sky Development, LLC	Yes
RGH7555	Wake Up Inc	Yes
RGH3200	Blue Sky Development, LLC	No
RGH9547	Drysdale Amanda	No

BEFORE THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION OF THE STATE OF MONTANA

****

IN THE MATTER OF PETITION NO. 41H-114172 TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION FOR DESIGNATION OF A CONTROLLED GROUNDWATER AREA IN GALLATIN COUNTY	))))))	**FINAL ORDER**

****

An Amended Proposal for Decision in the above matter was issued March 13, 2001. Copies of the Proposal were mailed to all interested parties. The Amended Proposal recommended designation of the Idaho Pole Company Site as a controlled ground water area.

No objections to the Amended Proposal were received by the Department of Natural Resources and Conservation. Therefore, the Director of the Department of Natural Resources and Conservation, having given the matter full consideration, finds, concludes, and orders as follows:

FINDINGS OF FACT

1. A Petition for Controlled Groundwater Area (Petition) was filed with the Department on September 28, 2000. The Petition was submitted by the Gallatin City-County Board of Health and signed by the Chairperson, Dr. Warren Jones. The Petition alleges water quality within the alluvial aquifer underlying the proposed controlled groundwater area is not suitable for domestic or municipal use insofar as groundwater would be used as a drinking water supply and groundwater withdrawals for industrial or agricultural use from the proposed area may cause contaminant migration.

2. Pentachlorophenol (PCP) is the primary contaminant of concern to human health at the Idaho Pole Company site. The plume of dissolved PCP extends several hundred feet laterally downgradient of the Idaho Pole Company site. (Petition)

3. A Notice to Groundwater Users was published in the *Bozeman Chronicle* on December 6, December 13, and December 20, 2000, setting forth the Petitioner, the alleged cause for the Petition, the legal description of the proposed controlled groundwater area, and the time, place, and purpose of the hearing. Additionally, the Department served notice by first-class mail on approximately 38 individuals

and public agencies which the Department determined might be interested in or affected by the proposed controlled groundwater area. The notice also stated any interested person could appear, either in person or by attorney, file written objections to the granting of the proposal, and be fully heard. (Department file.)

4. The proposed controlled groundwater area is described as follows: the W½SW¼, W½NW¼ of Section 5 and the SE¼NE¼, SE¼ of Section 6, both in Township 2 South, Range 6 East in Gallatin County, Montana. The proposed controlled area includes all underlying aquifers. (See attached map) (Department file.)

5. The Petitioner proposes total closure for groundwater wells in the proposed controlled groundwater area with exceptions for remediation/monitoring wells and replacement wells for existing appropriations as authorized by the Department.

6. The boundary includes all of the Idaho Pole Company property and a buffer zone extending 320 feet from the contaminate plume. The buffer zone is based on a capture zone analysis using 500 gpm as a conservative maximum amount available from the aquifer.

7. Based on the information in the Petition and the evidence presented at the hearing, the Department finds water underlying the PCP plume as shown on the attached map is not suitable for domestic or municipal use and groundwater withdrawals for industrial or agricultural uses may cause contamination migration.

Based upon the foregoing Findings of Fact, the Hearings Examiner makes the following:

CONCLUSIONS OF LAW

1. The Department has jurisdiction over the parties and over the subject matter herein. Mont. Code Ann. §§ 85-2-113, 85-2-506 (1999).

2. The Department gave proper notice of the hearing and all substantive procedural requirements of law or rule have been fulfilled. *See* Findings of Fact 1, 2, and 3.

3. There is sufficient evidence to designate a controlled groundwater which includes all aquifers underlying approximately 62 acres described as follows: the W½SW¼, W½NW¼ of Section 5 and the SE¼NE¼, SE¼ of Section 6, both in Township 2 South, Range 6 East in Gallatin County, Montana. *See* Findings of Fact 1, 2, 4, 5 and 6.

WHEREFORE, based upon the record, the Director makes the following:

ORDER

A controlled groundwater area is designated for the Idaho Pole Company Site generally described as approximately 62 acres in the east half of Section 6 and the west half of Section 5, both in Township 2 South Range 6 East, Gallatin County and more specifically in the W½SW¼, W½NW¼ of Section 5 and the SE¼NE¼, SE¼ of Section 6, both in Township 2 South, Range 6 East in Gallatin County, Montana.

1. Wells for new appropriations are prohibited. Replacement wells for existing appropriations will be allowed as authorized by the Department.

2. This controlled groundwater area does not apply to wells for remedial, response, or restoration actions authorized or undertaken by the United States Environmental Protection Agency or the State of Montana.

3. All new monitoring wells drilled within Controlled Groundwater Area, 41H-114172, shall be installed in accordance with the EPA-approved Standard Operating Procedure (SOP GROUNDWATER-3) for monitoring well design and construction.

4. Upon a showing by **clear and convincing evidence** that any part of the controlled groundwater area is not contaminated and will most likely never be contaminated the designation for that area may be lifted.

NOTICE FROM THE STATE OF MONTANA NATURAL RESOURCES DAMAGES PROGRAM

1. The granting of this petition for a controlled groundwater area does not constitute an irreversible and irretrievable commitment of the groundwater resource, nor does it serve as a permit for the release of hazardous substances into the groundwater aquifer.

2. The controlled groundwater area and groundwater closure is being issued in recognition of existing contaminated conditions and does not relieve any person from liability for contamination of the groundwater.

3. A grant of a controlled groundwater area is not an indication of a finding that the groundwater aquifer should not be remediated or restored.

APPEALS

The Department's Final Order may be appealed in accordance with the Montana Administrative Procedure Act by filing a petition in the appropriate court within 30 days after service of the Final Order. If a petition for judicial review is filed, the Department will transmit a copy of the tape(s) of the oral proceedings to the district court along with documentary evidence in the file. If a party to the proceeding elects to have a written transcription prepared, that party may purchase the tapes and have a transcript prepared.

Dated this 22 day of NOVEMBER, 2001.

Arthur Clinch, Director
Department of Natural Resources
and Conservation
1625 Eleventh Avenue
Helena, Montana 59620
(406) 444-2074

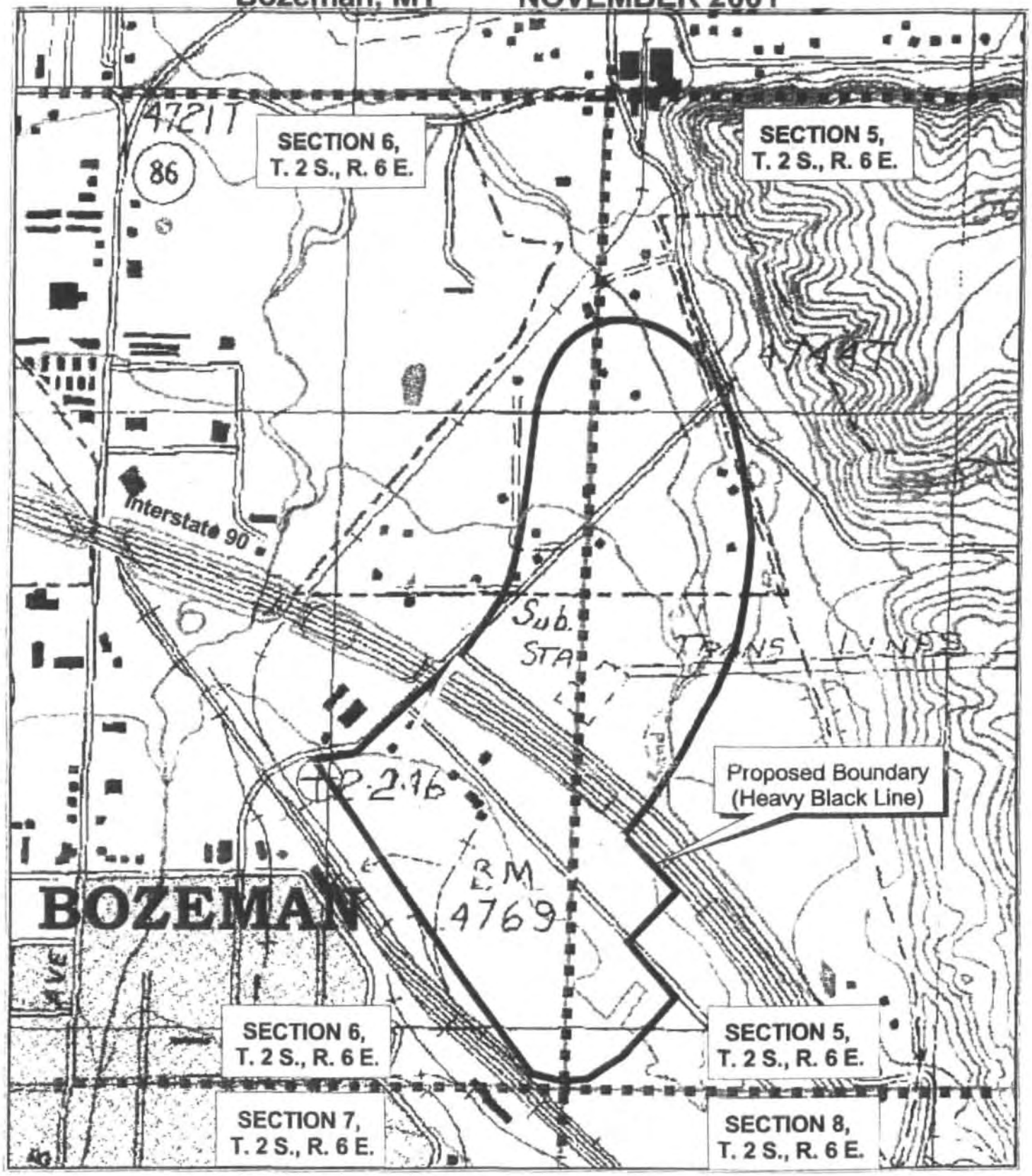
CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the Final Order was served upon all parties on file for this case, listed at the Water Resources Division on this 30th day of November, 2001.

Jennifer L. Hensley
Water Rights Bureau
Hearings Unit
406-444-6615

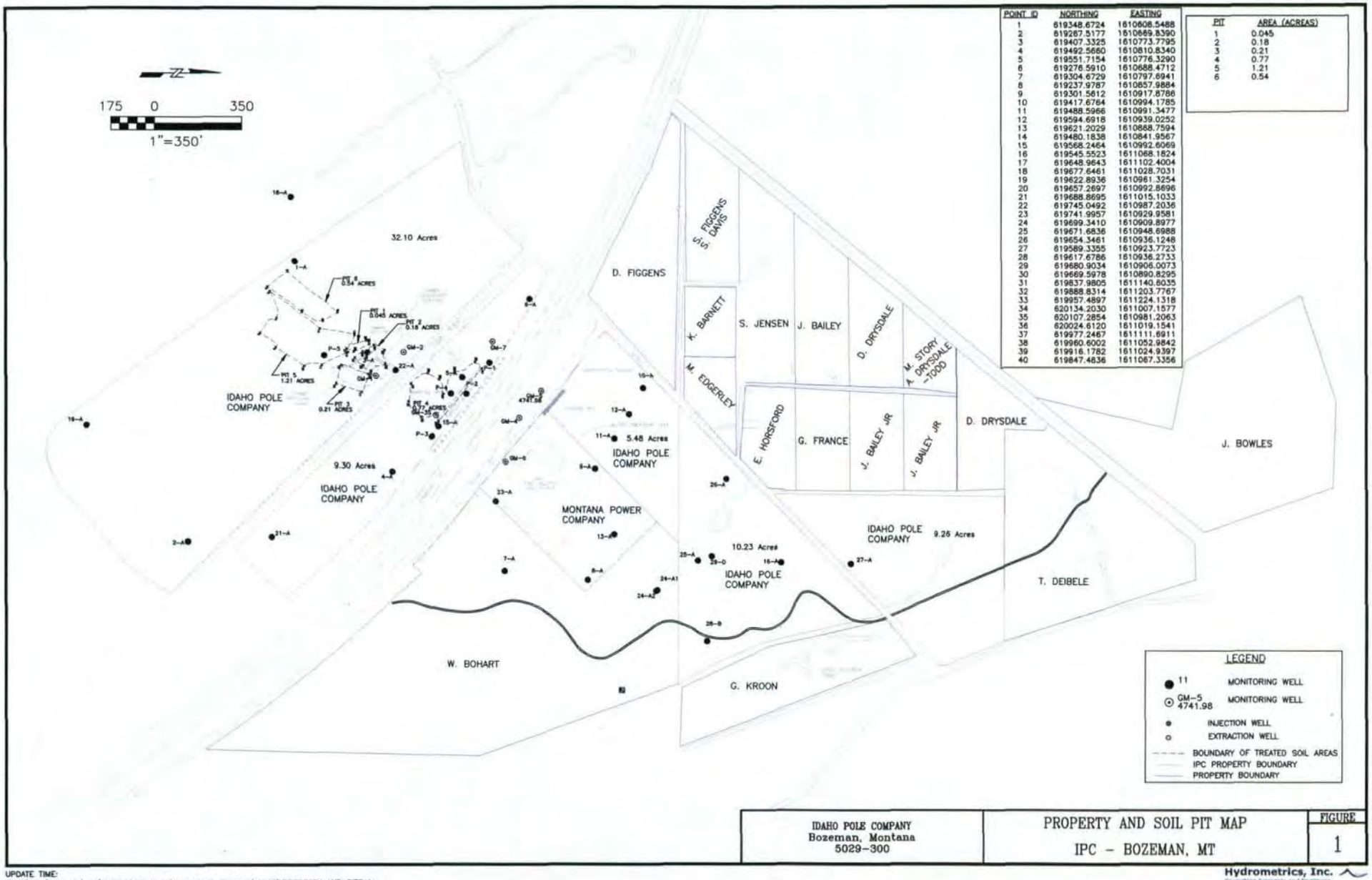
ATTACHMENT TO FINAL ORDER FOR 41H-114172

Montana Department of Natural Resources and Conservation
Proposed Idaho Pole Company Controlled Groundwater Area,
Bozeman, MT NOVEMBER 2001



Attachment 8

Areas Where Treated Soils Were Placed Back On Site



POINT ID	NORTHING	EASTING
1	619348.6724	1610608.5488
2	619267.5177	1610689.8390
3	619407.3325	1610773.7795
4	619492.5660	1610810.8340
5	619551.7154	1610776.3290
6	619276.5910	1610688.4712
7	619304.6729	1610797.6941
8	619237.9787	1610857.9884
9	619301.5612	1610917.8786
10	619417.6764	1610994.1785
11	619488.5966	1610991.3477
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13	619621.2029	1610868.7594
14	619480.1838	1610841.9567
15	619568.2464	1610992.6069
16	619545.5523	1611068.1824
17	619648.9643	1611102.4004
18	619677.6461	1611028.7031
19	619622.8936	1610961.3254
20	619657.2697	1610992.8696
21	619688.8695	1611015.1033
22	619745.0492	1610987.2036
23	619741.9957	1610929.9581
24	619699.3410	1610909.8977
25	619671.6836	1610948.6988
26	619654.3461	1610936.1248
27	619589.3355	1610923.7723
28	619617.6786	1610936.2733
29	619680.9034	1610906.0073
30	619669.5978	1610890.8295
31	619837.9805	1611140.6035
32	619888.8314	1611203.7767
33	619957.4897	1611224.1318
34	620134.2030	1611007.1577
35	620107.2854	1610981.2063
36	620024.6120	1611019.1541
37	619977.2467	1611111.8911
38	619960.6002	1611052.9842
39	619916.1782	1611024.9397
40	619847.4836	1611067.3356

PIT	AREA (ACREAS)
1	0.045
2	0.18
3	0.21
4	0.77
5	1.21
6	0.54

IDAHO POLE COMPANY Bozeman, Montana 5029-300	PROPERTY AND SOIL PIT MAP IPC - BOZEMAN, MT	FIGURE 1

UPDATE TIME:
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Hydrometrics, Inc.
Consulting Scientists and Engineers

Attachment 9

Idaho Pole and MDEQ Approval Correspondence

Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor

1520 East 6th Avenue • Helena, MT 59620 • (406) 444-4218 • Fax: (406) 444-5330

August 30, 2010

Roger Hoogerheide, RPM
10 West 15th Street, Suite 3200
Environmental Protection Agency
Helena, MT 59626

RE: Idaho Pole Five-Year Review

Dear Roger,

DEQ has reviewed and commented on the Draft Idaho Pole Five-Year Review, and has been intimately involved in the development of both the draft and final documents. DEQ hereby concurs with the findings and recommendations of the Idaho Pole Five-Year Review.

We appreciate the opportunity to work with you on this effort.

Sincerely,

Sandi Olsen

Cc: Brad Smith, DEQ
Steven Moores, EPA
Les Lonning, Idaho Pole
Lisa DeWitt, DEQ

Hydrometrics, Inc.
Consulting Scientists and Engineers

5602 Hesper Road
Billings, MT 59106
(406) 656-1172
Fax: (406) 656-8912
www.hydrometrics.com

July 9, 2010

Mr. Roger Hoogerheide
US EPA Montana Operations
10 West 15th Street, Suite 3200
Helena, MT 59626

RE: Comments on Third Five-Year Review Report for the Idaho Pole Company Site

Dear Mr. Hoogerheide:

On behalf of the Idaho Pole Company (IPC) and BNSF Railway Company (BNSF), Hydrometrics, Inc. is submitting this letter outlining comments on the Third Five-Year Review Report for the Idaho Pole Company Site.

Comments are as follows:

Page 3, Paragraph 4: Change the first sentence to read, "Buildings currently on the former wood treating property south of I-90 include the treatment building associated with the groundwater treatment system, **a yard office building,** and an office building owned by IPC (not currently occupied).

Page 10, Paragraph 1: Change the first sentence to read, "The treated soil was placed above historic high groundwater levels and was covered with **12 to 18 inches** of clean soil to prevent direct human contact with treated soils."

Page 10, Paragraph 2, Bullet 2: Change the last sentence to read, "The 'barkfill injection gallery' (BFIG) was installed just **North** (i.e., downgradient) of the BFEG."

Page 25, Data Review: Change first sentence to read, "Recent influent and effluent concentrations for PCP ~~are~~ at the groundwater treatment plant are presented in Table 6, below."

Page 27, Bullet 6: Change sentence to read, "Discontinuation of sampling for PAHs at five monitoring wells that have consistently had PAH concentrations that are 'non-detect' or below the ROD cleanup standard since performance monitoring was implemented in 1996 (9-A, 19-A, 25-A, 25-B and 26-C), and addition of sampling for PAHs at five monitoring wells down-gradient of observed PAH detections to better define the extent of the PAH plume (23-A, 23-B, GM-4, **GM-5**, and GM-6)."

Page 29, Paragraph 2: Change the last sentence to read, "Using cleanup data collected since the remedy was initiated, the Agencies intend to ~~a~~ estimate a new, more accurate time frame in which remediation levels may be achieved.

Page 30, Last Paragraph: Change the second sentence to read, "The remaining soil remedy objective is to establish ~~proprietary~~ ICs on Site to protect areas where treated soil has been disposed of with remaining contamination above levels that allow for unlimited use and unrestricted exposure."

Page 31, First Paragraph: Change the second sentence to read, "These areas will have use restrictions set out in ~~proprietary~~ ICs."

If you have any questions, please feel free to call us at (406) 656-1172.

Sincerely,

Hydrometrics, Inc.

Ashley Thorson, E.I.
Chemical/Project Engineer

Heidi Kaiser, P.G.
Senior Geologist

cc: Lisa DeWitt, MDEQ
Les Lonning, IPC
Dave Smith, BNSF
Rebecca Fabich, IPC Field Office
Hydrometrics File 5029

Draft 5 Year review sent out 7/26/10
Ashley Thorson
to:
Roger Hoogerheide
08/17/2010 01:34 PM
Cc:
lidewitt, LesL, "Heidi Kaiser"
Show Details

Roger - McFarland Cascade has no comment on the draft 5 year review sent out via electronic mail on July 26, 2010

Ashley Thorson
Chemical / Project Engineer
Hydrometrics, Inc.
5602 Hesper Road
Billings, MT 59106
Ph: (406) 656-1172 X 302
Cell: (406) 671-8177
fax: (406) 656-8912