Five-Year Review Report

Third Five-Year Review Report

for

Del Norte Pesticide Storage Area

Crescent City

Del Norte County, California

June, 2010

PREPARED BY:

United States Environmental Protection Agency

Region IX

San Francisco, California

Approved by: Date:

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6/14/10

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List of Acronyms

1,2-DCP	1,2- Dichloropropane
2,4-D	2,4- Dichlorophenoxyacetic acid
µg/l	micrograms per liter, also pbb (see below)
AOC	Administrative Order on Consent
ARARs	Applicable or Relevant and Appropriate Requirements
CCR	Code of California Regulations
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
DHS	California Department of Health Services, currently Department of Public Health
DTSC	California Department of Toxic Substances Control
EPA	Environmental Protection Agency
ERCS	Emergency Response Contract Services
ESD	Explanation of Significant Differences
gpm	gallons per minute
IC	Institutional Control
MCLs	Maximum Contaminant Levels
N/A	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCRWQCB	North Coast Regional Water Quality Control Board
NPL	National Priorities List
O&M	Operations and Maintenance
OSC	On Scene Coordinator
OU	Operable Unit
P&T	Pump and Treat
PCOR	Preliminary Closeout Report
ppb	parts per billion
RA	Remedial Action
RAO	Remedial Action Objective, cleanup level
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
RPM	Remedial Project Manager
SSC	State Superfund Contract
TI	Technical Impracticability
VOCs	Volatile Organic Compounds

Executive Summary

This is the third Five-Year Review of the Del Norte County Pesticide Storage Area Superfund Site (Site) in Crescent City, Del Norte County, California. The purpose of this Five-Year Review is to review information from the previous five years to assess the nature of any contamination left on-site and determine whether or not the remedy remains protective of human health and the environment.

The August 29, 2000 Amendment to the Record of Decision (ROD Amendment) concluded that it was technically impracticable to remediate the groundwater plume to cleanup goals. A pump and treat system that had been operating for approximately seven years was no longer effective at reducing concentrations of the contaminant 1,2-Dichloropropane (1,2-DCP), and monitoring data showed that 1,2-DCP levels remained stable whether or not the system was operating.

Groundwater monitoring data since the second Five-Year Review confirm that the Remedial Action Objective (RAO) of containment of the groundwater plume continues to be met. The current array of monitoring wells provides adequate assurance of no significant contaminant migration. The U.S. Environmental Protection Agency (EPA) tasked the Army Corps of Engineers with conducting a rigorous statistical analysis of the groundwater monitoring data since the active treatment was ended in 1997. These analyses show that the concentration of 1,2-DCP in only one monitoring well within the plume area exceeds the Maximum Contaminant Level (MCL) of 5 micrograms per liter (µg/l). The concentration is stable within a relatively narrow range. This MCL is an ARAR that was indentified and waived as an RAO in the 2000 ROD Amendment.

Exposure to the remaining on-site 1,2-DCP contamination is being adequately controlled by formal land use restrictions on the appropriate parcels and by policies of the Del Norte County Department of Health and Social Services and Community Development Department. In accordance with the ROD Amendment and a Consent Decree (CD) between EPA, the California Department of Toxic Substances Control (DTSC), and Del Norte County, a Covenant to Restrict Use of Property was recorded with Del Norte County on July 31, 2002 to further limit exposure to 1,2-DCP. On March 20, 2007 a revised Covenant was recorded to include both parcels of the Site: parcels #120-020-36 and #110-010-22. As part of the current Five-Year Review, it was confirmed that the Covenant is recorded on both parcels.

The remedy at the Del Norte Pesticide Storage Area currently protects human health and the environment because there is no current exposure to the contamination that remains at the Site. A Land Use Covenant to Restrict Use of Property was recorded for both parcels in 2007, and a title search confirmed that this institutional control is in place and effective to ensure long-term protectiveness.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Del Norte Pesticide Storage Area		
EPA ID *(from WasteLAN)*: CAD000626176		
Region: IX	**State: CA**	**City/County: Crescent City/ Del Norte**
SITE STATUS		
NPL status: ☐ Final **X** Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☐ Under Construction ☐ Operating **X** Complete		
Multiple OUs?* ☐ YES **X** NO	**Construction completion date:** 06 / 18 / 1992	
Has site been put into reuse? **X** YES ☐ NO (Continued use of property by Del Norte County)		
REVIEW STATUS		
Lead agency: **X** EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____		
Author name: Kevin Mayer		
Author title: RPM	**Author affiliation: USEPA**	
Review period: 10/01/2009 to 5/27/2010		
Date(s) of site inspection: 10/26/2009		
Type of review: **X** Post-SARA ☐ Pre-SARA ☐ NPL-Removal only ☐ Non-NPL Remedial Action Site ☐ NPL State/Tribe-lead ☐ Regional Discretion		
Review number: ☐ 1 (first) ☐ 2 (second) **X** 3 (third) ☐ Other (specify) _____		
Triggering action: ☐ Actual RA Onsite Construction at OU #____ ☐ Actual RA Start at OU#____ ☐ Construction Completion **X** Previous Five-Year Review Report ☐ Other (specify) Change in land use plans. Consideration of updated toxicity information.		
Triggering action date *(from WasteLAN)*: September 8, 2005		
Due date *(five years after triggering action date)*: September 8, 2010		

Five-Year Review Summary Form, cont'd.

Issues:

There are no issues that affect protectiveness. All required Land Use Restrictions and other ICs are now fully in place.

Recommendations and Follow-up Actions:

There are no recommendations or follow-up actions needed.

Protectiveness Statement(s):

The remedy at the Del Norte Pesticide Storage Area currently protects human health and the environment because there is no current exposure to the contamination that remains at the Site. A Land Use Covenant to Restrict Use of Property was recorded for both parcels of the single Operable Unit in 2007, and a title search confirmed that this institutional control is in place and effective to ensure long-term protectiveness.

The monitoring data confirm that the RAO of containment of the groundwater plume continues to be met. The current array of monitoring wells provides adequate assurance of no significant contaminant migration.

The plume has been stable since the groundwater treatment system was shut down in October 1997. Statistical analyses of the monitoring results since 1997 show that the concentration of 1,2-DCP exceeded the MCL of 5 μg/l in only one monitoring well and has remained stable over the last few years after declining gradually. This MCL is an ARAR that was indentified and waived as a Remedial Action Objective (RAO) in the 2000 ROD Amendment.

Ecological risks from the contaminated ground water are considered insignificant due to no complete exposure pathway to ecological receptors.

1. Introduction

The purpose of a Five-Year Review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review Reports. In addition, Five-Year Review Reports identify issues found during the review, if any, and recommendations to address them.

The Agency is preparing this Five-Year Review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121 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.*

The agency interpreted this requirement further in the NCP. 40 CFR §300.430(f)(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.*

EPA Region IX in collaboration with California Department of Toxic Substances Control (DTSC) has conducted a Five-Year Review of the remedial actions implemented at the Del Norte Pesticide Storage Area Superfund site (Site) in Crescent City, Del Norte County, California. The entire Site comprises one Operable Unit (OU). This review was conducted from October 2009 through May 2010. This report documents the results of the review.

The August 29, 2000 Amendment to the Record of Decision (ROD Amendment) altered the remedy originally selected in the September 30, 1985 Record of Decision (ROD). As a result of the ROD Amendment, hazardous substances, pollutants, or contaminants were left on-site at levels that would prohibit unlimited use and unrestricted exposure. This Five-Year Review is therefore required by statute because the remedy now allows contaminant levels in groundwater to exceed the Maximum Contaminant Level (MCL) indefinitely. This is the third Five-Year Review for the Site. The triggering action for this statutory review is the signature date September 8, 2005, of the previous Five-Year Review Report, as shown in EPA's WasteLAN database.

2. Site Chronology

Table 1 lists the chronology of events for the Site.

Table 1: Chronology of Site Events

Event	Date
Operation of the Del Norte Pesticide Storage Area	1970-1981
Initial discovery of problem by NCRWQCB	08/13/1981
EPA inspection reveals RCRA violations	09/25/1981
Cleanup and Abatement Order No. 81.213 issued by NCRWQCB	10/1981
DHS collects on-site soil samples	12/1981
Removal of 1,150 containers from the Site	01/1982
Shipment of 440 contaminated barrels to licensed recycler	04/1982
Final NPL listing	09/21/1984
Remedial Investigation/Feasibility Study complete	05/1985
ROD signature	09/30/1985
Removal of 290 cubic yards of contaminated soil	08/1987
RD complete	04/20/1988
EPA ascertains on-site chromium is naturally occurring	1985-1987
U.S. Army Corps of Engineers contracted to design Pump & Treat (P&T) system	05/1989
ESD (for presence of natural chromium)	09/21/1989
Construction of P&T system begins	10/25/1989
P&T system completed and operational	04/1990
DTSC assumes cost for 50% of RA under SSC	04/23/1990
PCOR/Construction Completion	06/18/1992
P&T system shut off when contaminant concentrations stabilize	10/1997
AOC for cost recovery	05/11/1998
ROD Amendment signature	08/29/2000
First Five-Year Review	09/26/2000
CD entered by Court	03/06/2002
Final Close-out Report	07/19/2002
Deletion from NPL	09/18/2002
Covenant to Restrict Use of Property Recorded with County	07/31/2002
Second Five-Year Review	09/08/2005
Corrected Covenant to Restrict Use of Property Recorded with County	03/20/2007
Third Five-Year Review due	09/08/2010

3. Background

Physical Characteristics

The Site, located approximately one mile northwest of Crescent City, California, consists of less than one acre of land contaminated with a variety of herbicides, pesticides, and other compounds. The Site is located in a rural area immediately south of McNamara Field, the airport that serves Del Norte County (See Figure 1). The Site lies within the 20-acre Jack McNamara parcel, which is comprised of County Assessor parcel #110-010-22 and parcel #120- 020-36 (See Figure 2).

According to the California Department of Finance, the population of Del Norte County was 27,507 in 2000. By 2020, the population is expected to increase to 39,000. In 2000, the population of Crescent City was estimated to be 7,347 (including the population of Pelican Bay State Prison). In 1999, EPA estimated that 800 persons live within one mile of the Site.

Land and Resource Use

Since its closure in 1981, the Site has been fenced, locked, and posted with a public notice stating that hazardous substances may be present. The Site is encompassed by approximately 480 acres of County-owned property, predominantly used as a public airport. The County property is bounded by State-owned land which is intended for use as a natural and recreational area to the north; by Washington Boulevard and farmland to the south; by Riverside Drive and residences to the east; and the Pacific Ocean to the west. The Del Norte County Agriculture Department office and related facilities are currently located within the Site.

The groundwater at the Site is relatively shallow and fluctuates with seasonal and annual precipitation patterns. The direction of groundwater flow in the shallow aquifer is toward the southeast, although rate of groundwater flow is relatively slow due to the gradient and transmissivity of this portion of the aquifer. During the October 2010 site inspection, the water level in drainage ditches at the Site indicated the water table was approximately 3 to 4 feet below the grade level. These ditches are upgradient of the plume area. Since the airport and on-site County Agriculture Department facilities are using municipal water, the underlying groundwater aquifer within one quarter of a mile of the Site is not used as a drinking water source. The nearest residence is a single-family farmhouse to the south of the site more than one-quarter mile from the plume. The nearest multi-family residences, the Seawood Apartments, are one mile to the east of the site.

It appears that the land uses of the Site and surrounding area are essentially the same as they were during the second Five-Year Review in 2005. The General Plan and Zoning Maps for the Site property indicate that part of the Site property is zoned for manufacturing and industrial uses and the remainder of the Site is zoned for resource conservation. As in 2005, the Humane Society building near Washington Street on the Site property is in disrepair and is no longer being utilized.

Regarding future land use, Del Norte County had considered expansion of the county airport and airport-related facilities, resulting in relocation of county facilities from the Jack McNamara parcel and possible removal of some homes on Riverside Drive. The County Department of Health and Human Services had been involved in early planning stages, but due to current economic conditions this development has been postponed indefinitely. It is anticipated that present land uses of the Site and surrounding area will continue into the future.

History of Contamination

In December 1969, Del Norte County notified the North Coast Regional Water Quality Control Board (NCRWQCB) of the County's intent to operate a pesticide container storage area. The County requested operating advice and approval from the NCRWQCB, and in January 1970, the NCRWQCB responded with suggested operating procedures and additional information requests regarding the planned facility. During 1970, the Del Norte Pesticide Storage Area was designated by the NCRWQCB as a Class II-2 disposal site. It was intended to serve as a countywide collection point for interim or emergency storage of pesticide containers generated by local agricultural and forestry-related industries. The NCRWQCB approved the operation of the Del Norte Pesticide Storage Area provided that all containers were triple-rinsed and punctured prior to arrival at the facility.

The Del Norte Pesticide Storage Area operated from 1970-1981. In the fall of 1981, the NCRWQCB and California Department of Health Services (DHS) discovered soil and groundwater contamination. This discovery indicated that pesticide containers had been rinsed on-site and that the residues and rinseates were improperly disposed of in a bermed, unlined sump area. Preliminary investigations from 1981-1983 by NCRWQCB and DHS identified soil and groundwater contamination with herbicides, pesticides and volatile and semi-volatile organic compounds. In January 1982, Del Norte County removed 1,150 containers from the Site and disposed of them at the Crescent City Landfill. In April 1982, 440 remaining unrinsed drums were shipped to a licensed recycler, the Rose Cooperage Company, in Montebello, California. Del Norte County's inability to fund further investigations initiated the process of listing the Del Norte Pesticide Storage Area on the National Priorities List (NPL) in the fall of 1983.

Basis for Taking Action

EPA completed Remedial Investigation/ Feasibility Study (RI/FS) activities in 1985. The results of those investigations indicated that operations at the Site resulted in contamination of soil and groundwater. Contaminants of concern in both soil and groundwater were 1,2-Dichloropropane (1,2-DCP) and 2,4- Dichlorophenoxyacetic acid (2,4-D). Soil contamination was detected to a depth of 15 feet but contained to an on-site area of 15 feet by 20 feet. At the time, the groundwater contaminant plume was estimated to extend approximately 170 feet to the southeast of the Site, the direction of groundwater movement. Potential use of the contaminated aquifer as a water supply would result in a significant health risk. Ingestion of these contaminants at the levels found on-site during the RI/FS has been linked to increased cancer risk. Investigations indicated that elevated levels of chromium were also present in soils at the Site.

4. Remedial Actions

Remedy Selection and Remedial Action Objectives

The ROD for the Site was signed on September 30, 1985. Remedial Action Objectives (RAOs) were established based on data collected during the Remedial Investigation to aid in the development and screening of remedial alternatives that were considered for the ROD.

The general RAOs identified in the 1985 ROD were:

- Minimize off-site contamination by migration of contaminated groundwater, and
- Minimize exposure to contaminated soil.

These RAOs were further specified in the 1985 ROD as:

- Prevention of nearby well contamination, and
- Restoration of contaminated on-site ground water to the MCLs of 100 µg/l for 2,4-D and 50 µg/l for chromium, and to the health-based level of 10 µg/l for 1,2-DCP, and
- Clean-up of on-site soils to unrestricted use levels (residential levels).

These RAOs resulted in the selection of a remedy with the following major components:

- Excavation and off-site disposal of contaminated soils,
- Extraction and treatment of groundwater through carbon adsorption and coagulation/filtration treatments,
- Disposal of treated groundwater to the Crescent City Waste Water Treatment Plant, and
- Groundwater monitoring.

A September 21, 1989, Explanation of Significant Differences (ESD) justified and documented the change in the groundwater treatment method that was selected in the 1985 ROD. Following source removal activities and initial biodegradation and/or volatilization of on-site contaminants, concentrations of 2,4-D and 1,2-DCP had reached asymptotic levels, indicating that continuation of the groundwater extraction and treatment aspect of the remedy was no longer appropriate. Furthermore, the discovery of naturally-occurring chromium in on-site bedrock rendered the treatment of groundwater by coagulation/filtration and the remediation of soil to remove chromium impracticable and prohibited under Section 104 (a)(3)(A) of CERCLA as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). The selected groundwater treatment method was changed by the ESD from carbon adsorption and coagulation/filtration to aeration. Aeration had been considered in the original ROD as a remedial alternative but was not chosen due to its ineffective removal of 2,4-D and chromium.

In a ROD Amendment signed on August 29, 2000, EPA concluded that the remedial objective of restoring the contaminated groundwater to MCLs would not be met because no technology exists which is capable of reaching drinking water quality standards under the conditions found at the Site.

The RAOs included in the 2000 ROD Amendment are:

- Containment of contaminated groundwater, and
- Prevention of the groundwater's use as drinking water as long as contaminant concentrations remain above drinking water quality standards.

The 2000 ROD Amendment provides for:

- Containment of the groundwater plume through natural attenuation,
- Semi-annual groundwater monitoring,
- Identification of a new Applicable or Relevant and Appropriate Requirement (ARAR) for 1, 2-DCP (equivalent to the MCL of 5 µg/l),
- A Technical Impracticability waiver (TI) of this newly identified ARAR for groundwater within the existing contaminated area, and
- Institutional Controls (ICs) to prevent exposure to contaminated groundwater.

Remedy Implementation

In December 1987, EPA performed the first remedial action at the Site. Approximately 290 cubic yards of contaminated soil were excavated and disposed of off-site at a licensed hazardous waste disposal facility. The soil cleanup goals in the 1985 ROD were 10 µg/kg for 1, 2-DCP, which is well below the 2009 Regional Screening Levels for 1,2-DCP in residential soil for both carcinogenic target risk and non-cancer hazard index. The 1985 ROD soil cleanup goal of 100 µg/kg for 2,4-D also remains considerably below the current Regional Screening Levels for residential soil. This remedial action completed the soil remedy for the Site.

On July 19, 1988, DHS Toxic Substances Control Division, currently the Department of Toxic Substances Control (DTSC), signed a State Superfund Contract (SSC) with EPA, agreeing to pay for 50% of Remedial Design (RD) and Remedial Action (RA) costs. This contract was later amended in 1993 to include a 50% cost share of removal, RI/FS, RD, and RA costs. The authority for higher and broader cost sharing (exceeding the typical 10% cost share of RA costs) is granted under CERCLA Section 104(c)(3) which provides that States pay at least 50% of all response costs for sites where the State, or a political subdivision thereof, is responsible as an operator.

The RD for the aeration treatment system at the Site was executed by an EPA On-Scene Coordinator (OSC). Construction of the treatment system was conducted from September 1989 through April 1990. Extraction and monitoring wells were already in place from activities conducted during the RI/FS and RD.

Groundwater monitoring indicated that the extent and levels of 2,4-D and 1,2-DCP in groundwater were decreasing significantly. Between 1985 and 1989, after source removal but before installation of the pump and treatment system, the levels of 2,4-D in monitoring wells at the Site decreased to less than 2 µg/l, well below the 100 µg/l cleanup level established under the ROD. The levels of 1,2-DCP also decreased in the same time period from approximately 2000 µg/l to 600 µg/l; although the concentrations remained above the 10 µg/l cleanup level established under the ROD. These reductions were likely the result of the source removal and biodegradation and/or volatilization of the contaminants in the groundwater.

A pump and treatment system was installed in 1990 and began extracting groundwater from one extraction well at the rate of 15 gallons per minute (gpm). The treatment system operated continuously from April 1990 to December 1994. Thirteen monitoring wells in addition to the pumping wells were used to evaluate the remedy, including contaminant levels and groundwater movement (Figure 2). During that period it was observed that 1,2-DCP concentrations in the groundwater monitoring wells located within the plume had reached asymptotic levels, between approximately 15 and 40 µg/l 1,2-DCP. In 1994, EPA installed an air sparging system to determine if the injection of air into the aquifer would enhance contaminant removal. Additional sparge points were added in 1995. No measurable changes in the levels of 1,2-DCP in groundwater resulted.

The Site achieved construction completion status when the Preliminary Close Out Report was signed on June 18, 1992.

In 1994, EPA began a program of turning off the groundwater treatment system for extended periods of time to determine what effect it would have on contaminant concentrations. The system was turned off for approximately six months in 1995, and then restarted. It was turned off again for six months in 1996. No concentration differences were detected on either occasion. The system has been off since October 1997 and semi-annual groundwater monitoring reports show that contaminant concentrations continue to decline slowly, at the same rate as when the treatment system was operating. This trend and subsequent further investigation of plume behavior led the agency to finalize a ROD Amendment on August 29, 2000, with the identification of a new ARAR for 1,2-DCP (equivalent to the newly established MCL of 5 µg/l) and a TI waiver of this ARAR. Ongoing components of the remedy now include containment of the plume through natural attenuation, semi-annual groundwater monitoring, and ICs. The Thirteenth Semi-annual Groundwater Monitoring Report was submitted to EPA on November 10, 2010. A Covenant to Restrict Use of Property which incorporates the ICs necessary to prevent exposure to contaminated groundwater in this area was recorded for parcel #120-020-36 on July 31, 2002. On March 20, 2007, a corrected Covenant to Restrict Use of Property was recorded which included restrictions on both parcels #120-020-36 and #110-010-22. (Appendix C).

Operation and Maintenance

Operations and Maintenance (O&M) of the treatment system is no longer performed, because the treatment system has been turned off since October 1997. While the treatment systems were operating, O&M had been handled in-house by EPA. Repairs to the discharge pipeline, daily inspections and recording instrument readings were performed by employees of Del Norte County.

The remedy has now been amended to containment, monitoring, land use restrictions and a TI waiver of the remediation goal. The 2000 ROD Amendment and the 2002 CD require two years of semi-annual sampling of four specific monitoring wells as a component of the O&M, with an option of an annual schedule if warranted by analysis of at least two years of monitoring results. The monitoring program includes two wells within the known extent of contamination

based on the previous characterization effort (MW-104 and MW-105) and two wells immediately down gradient and lateral to the plume (MW-26 and MW-107, respectively). The two wells outside the plume are within 100 feet of each other and are placed along the potential groundwater flow paths to provide assurances of plume containment. Thirteen semi-annual Groundwater Monitoring Reports are available since the Consent Decree, including the most recent report submitted November 10, 2009. The sampling has been consistent with the previous sampling plan approved under the O&M and Sampling Manual prepared in February 1991. Due to increased budget restrictions, Del Norte County has asked EPA and DTSC to explore options of reduced monitoring frequency as specified in the CD.

5. Progress Since the Last (Second) Five-Year Review

The Second Five Year Review for the Del Norte Site in 2005 concluded that:

> "*The remedy at the Del Norte Pesticide Storage Area across the single OU currently protects human health and the environment because there is no current exposure to the contamination that remains at the Site. However, in order for the remedy to be protective in the long-term, a Land Use Covenant to Restrict Use of Property that is applicable to the entire Site must be put in place to en sure long-term protectiveness.*"

The Second Five Year Review identified only one issue potentially affecting current or future protectiveness, an error in the Covenant to Restrict Land Use. The Covenant was found to apply only to a portion of the Site area, parcel #120-020-36. The Covenant has been revised and the appropriate Covenant was recorded on March 20, 2007, to apply to both parcels #120-020-36 and #110-010-22, in order to fully prevent exposure to contaminated groundwater as intended by the 2000 ROD Amendment. (Appendix C).

6. Five-Year Review Process

Administrative Components

Del Norte County representatives were formally notified of the initiation of the Five-Year Review process on October 21, 2009, following earlier discussions. The Five-Year Review was led by Kevin Mayer, EPA's Remedial Project Manager (RPM) for the Del Norte Pesticide Storage Area Superfund site with Alex Lee, DTSC's Project Manager for the Site. The following EPA Site team members assisted in the review:

• Kim Muratore, Case Developer;
• Svetlana Zenkin, Community Involvement Coordinator (CIC);
• Bethany Dreyfus, Attorney;
• Richard Garrison, US ACE; and,
• Ned Black, Region 9 CERCLA Ecologist.

The following County officials were interviewed as part of the Five-Year Review:
• Ron Aujuard, Del Norte County Department of Health and Social Services; and
• Ernie Perry, Del Norte County Department of Planning;

This Five-Year Review consisted of the following activities: community notification and involvement, a review of relevant documents and data, site inspection, and interviews with Del Norte County personnel.

Community Notification and Involvement

Activities to involve the community in the Five-Year Review were initiated in 2009. A notice regarding the forthcoming Five-Year Review was prepared by Svetlana Zenkin, CIC, and Kevin Mayer, RPM, both of EPA, with review and assistance from Alex Lee, DTSC. The notice was published on May 15, 2010 in *The Daily Triplicate* announcing the Five-Year Review for the Site (Appendix G). The notice provided a brief background and other relevant information on the Site, explained the reason for the Five-Year Review, and requested that anyone interested in submitting comments regarding the performance of the remedy at the Site contact the toll-free phone number provided. No comments were received prior to the closing of the comment period on May 27, 2010.

A second notice will be published in *The Daily Triplicate* announcing that the Five-Year Review Report for the Site is complete and that the results of the review and report are available to the public. The completed Five-Year Review Report will be available at the following locations:

- DTSC File Room, 700 Heinz Avenue, Berkeley, CA 94710
  (510) 540-3800 (Call for appointment)
- Del Norte County Public Library, 190 Price Mall, Crescent City, CA 95531
- EPA Records Center, 95 Hawthorne Street, Suite 403S, San Francisco, CA 94105.

Document Review

This Five-Year Review consisted of a review of relevant documents including records and monitoring data (See Appendix E). The following ARARs for the Site were reviewed for changes that could affect protectiveness:

- National Primary Drinking Water Standards (40 CFR Parts 141)
- Title 22 CCR Section 64444
- Porter-Cologne Water Quality Control Act (California Water code Sections 13140-13147, 13172, 13260, 13262, 13267)

The only standard that has changed since the last Five Year Review is the issuance of a drinking water public health goal (PHG) for 2,4-D. In January 2009, the California's Office of Environmental Health Hazard Assessment issued a PHG for 2,4-D of 0.02 mg/L. However, since at least 1989, levels of 2,4-D in groundwater at the Site have been below 0.002 mg/L, well below the 2009 PHG. Therefore, this new standard does not impact protectiveness at the Site. The other standards have not changed.

The 2002 CD outlined access and institutional controls critical to the effectiveness of the remedy for the Site. The revised March 20, 2007, Covenant to Restrict Use of Property was reviewed to determine if Del Norte County's responsibilities to control Site access and employ ICs under the CD were fulfilled. The Covenant was made between Del Norte County, the Covenantor, and DTSC, the Covenantee, with EPA as a third party beneficiary. The Covenant incorporates standard DTSC LUC provisions such as prohibiting use of the Site as a residence, hospital, school, or daycare, and any restriction of DTSC or EPA's rights of entry and access. The Covenant further enables DTSC and EPA to enforce the provisions of the Covenant.

Data Review

A review of records and monitoring reports through March 2000 indicate that the groundwater treatment system operated for nearly seven years from April 1990 to October 1997. The system operated a total of 79 months extracting approximately 51 million gallons of treated groundwater. The system removed an estimated volume of 3.75 gallons (14.2 liters or 16.4 kilograms) of 1,2-DCP. Approximately 95% of that volume was removed within the first four years of operation. Peak contaminant concentrations in monitoring wells MW104 and MW 105 were reduced from over 400 µg/l of 1,2-DCP in 1990 to less than 40 µg/l in 1997.

By October 1997, both the groundwater and soil cleanup levels for 2,4-D had been achieved. Although the 5 µg/l MCL for 1,2-DCP has not been achieved, groundwater monitoring reports show that 1,2-DCP concentrations continue to decline slowly and the plume is contained within the original contaminated area. The influence of seasonal and annual fluctuations in the water table is likely to be a factor in the variability of 1,2-DCP concentrations in the shallow groundwater. Such year-to-year variation should be considered in assessing

whether the groundwater containment RAO has been fully achieved. Table 2 summarizes the results of the five Semi-annual Groundwater Monitoring Reports since the previous Five Year Review. See Appendix D for a discussion of the statistical analyses of monitoring data since 1997.

Table 2: Concentration of 1,2 DCP (in µg/l) in Del Norte Site Groundwater Monitoring Wells since Second Five Year Review (September 2005)

Sampling Date	*09/14/05*	*03/20/06*	*04/16/07*	*11 /05/07*	*04/30/08*	*10/15/08*	*04122/09*	*10/12/09*
Well 26	ND	ND	ND	ND	ND	ND	ND	NS
Well 104	2.3	4.0	1.2	1.2	0.79	2.4	0.58	2.0
Well 105	9.9	4.7	5.3	4.2	10.0	6.2	9.6	6.5
Well 107	ND	ND	ND	ND	ND	ND	ND	NS

ND – Not detected above analytical reporting limit

NS – Not sampled during this sampling event

During 2009, EPA and DTSC held discussions with Del Norte County Public Health staff to review monitoring results and reassess the monitoring program. The 2000 ROD Amendment specifies, "If 2 years of monitoring data demonstrates that the plume remains stable and concentrations continue to decline, the option of an annual monitoring schedule may be considered." Monitoring results have been remarkably stable since the second Five Year Review, and monitoring wells 26 and 107 have had no detectable contamination at least since 2002. The three parties agreed that annual monitoring would be entirely adequate for those two wells starting in 2009. We further agreed that following review of a statistical analysis of the data, we would consider adjusting the monitoring schedule for the other two wells to an annual basis.

EPA tasked the U.S. Army Corps of Engineers to review the groundwater monitoring results since the active treatment system ceased operations in 1997. This report is included as Appendix D. Only two monitoring wells, 104 and 105, have detectable levels of 1,2-DCP. In MW-104, the concentrations have been below the 5 µg/l MCL since 2003. The concentration of 1,2-DCP has fluctuated in MW-105, between 4 and 10 µg/l over the last five years. Weather conditions and water table level have also fluctuated widely, although no direct statistical correlations have been discovered. With such variability, there is no clear trend for predicting when the MCL will be definitively attained. This ARAR was waived in the 2000 ROD Amendment for the currently contaminated portion of the aquifer. The analysis has confirmed the stability of the current range of groundwater concentration. EPA has also reviewed the monitoring data and concluded that the RAO of containment of the groundwater plume continues to be met. The current array of monitoring wells provides adequate assurance of no significant contaminant migration.

Site Inspection

Kevin Mayer and Alex Lee of DTSC performed the Five-Year Review site inspection on October 26, 2009. Ron Aujuard of Del Norte County Department of Health and Social Services participated in the inspection as a site escort and to provide information. The purpose of the inspection was to assess the protectiveness of the remedy by verifying that Site access and land and groundwater use have been restricted according to the CD.

No significant issues have been identified as a result of the site inspections. Perimeter fencing around the Site was in place and in good condition. Portions of the fencing along Washington Boulevard appeared to be relatively new. Signs restricting access were posted. The groundwater treatment system has been shut-off since October of 1997; therefore, no functioning machinery was present to be inspected, although there was evidence of former structure that may have been used during the treatment activities. No new uses of land or groundwater and no activities that would have violated the ICs were observed. Photos documenting the Site conditions are included in the Site Photo section of this report. A trench near the northern portion of the site provided visual evidence that the water table was only several feet below the ground surface (see attached photos).

The monitoring wells and their protective casings stood several feet above the ground surface. The metal casings protecting the monitoring wells showed corrosion, but the metal lids had been replaced and functioned adequately to prevent rainwater from accumulating around the wellhead. The PVC wellheads inside the metal casings were in good condition. However it was suggested that each well be clearly and permanently labeled with the well identification number (MW-26), possibly by writing on the PVC cap with indelible marker. Access to wells was made difficult by overgrowth of the surrounding vegetation and absence of route markings. The County official, Ron Aujuard, suggested bright plastic tape attached to the trees could be useful to mark the route and locations of the wells.

The Site Inspection Checklist (See Appendix A) attached to this document contains more details on the site inspection conducted for this report.

Interviews

The attached Interview Documentation Form (See Appendix B) provides further details regarding the interviews conducted for this Five Year Review.

The Second Five Year Review in 2005 conducted a broader series of interviews to establish a thorough understanding of the Del Norte County's executive structure and policies related to land use planning, development, permitting of wells and subsurface systems and other issues that could potentially impact the Superfund Site and the Remedial Action. With this information as a basis, the interviews and inspections for the Third Five Year Review were limited to those County agencies and managers with direct responsibilities.

Another improvement in the process for the Third Five Year Review is the collaboration between US EPA and California DTSC. The managers of these two agencies arranged to meet in Crescent City and together conduct the site inspection and interview with Del Norte County's project manager for the site.

Ron Aujuard, Environmental Health Scientist for the Del Norte County Department of Health and Social Services, Public Health Branch, was interviewed in person on October 26, 2009, at his office and at the site by Kevin Mayer and Alex Lee. This interview was conducted concurrently with the site inspection.

One of the major issues discussed in the office interview was the evaluation of the monitoring results and the possibility to reduce the semi-annual sampling frequency to an annual event for the four monitoring wells. This change is specifically anticipated in the 2000 ROD Amendment. Representatives of all three agencies felt that an annual monitoring schedule was likely to be sufficient, although we agreed to await the full statistical analysis before making any recommendations for reducing sampling frequency for all four wells.

The interview continued during the site inspection. Mr. Aujuard was relatively unfamiliar with the layout of the monitoring system and our difficulty locating and identifying the wells led to the recommendations for improved route marking and well identification in the thick undergrowth.

Kim Muratore of EPA telephoned the Del Norte Community Development (Planning) Department and verified that the zoning for these two parcels has not changed since the previous Five Year Review. A portion of each parcel is zoned as RCA-1 (Resource Conservation District), which would maintain this low-lying, wooded area as open space. A portion is zoned as MP (Manufacturing & Industrial Performance District). The County interprets the zoning description for MP as allowing for daycare or school usage, subject to approval for a use permit. However, during the course of the previous Five Year Review, the Director of the Community Development Department, Ernie Perry, said that a use permit would never be allowed, given the recorded deed restriction and the intention by the County to allow only airport-related uses of the County property.

7. Technical Assessment

A technical assessment of a site's remedy is based on information gathered during the Five Year Review in response to the following three questions:

- Question A - Is the remedy functioning as intended by the decision documents?
- Question B - Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?
- Question C - Has any other information come to light that could call into question the protectiveness of the remedy?

These questions provide a framework for organizing and evaluating data and information and ensure that all relevant issues are considered when determining the protectiveness of the remedy.

The following conclusions support the determination that the remedy at the Site is protective of human health and the environment.

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

• ***Remedial Action Performance***:
The groundwater treatment system has been inactive since October 1997. Monitoring results show that the plume is contained and contaminant concentrations are stable with only 2,4-DCP levels in one well remaining slightly higher than the MCL. Continued monitoring may eventually establish that the contaminant concentration is slowly declining.
• ***System Operations/O&M:*** Currently, O&M requires either annual or semi-annual sampling. Thirteen Semi-annual Groundwater Monitoring Reports are available. The results since the previous Five Year Review have been consistent with the previous sampling plan approved under the O&M and Sampling Manual prepared in February 1991. Del Norte County has raised the issue of reduced sampling frequency as allowed under the 2002 CD in order to reduce costs during a period of economic difficulty.
• ***Opportunities for Optimization:*** The groundwater treatment system has been shut off since October 1997. Optimization is not applicable.
• ***Early Indicators of Potential Issues:*** No early indicators of potential remedy failure were noted during the review.
• ***Implementation of Institutional Controls and Other Measures:*** Fencing and signs limit access to the Site. A Covenant to Restrict Use of Property was recorded for both on-site parcels. Site use is limited to the Del Norte County Department of Agriculture's office. The land is property of the County and, as the owner and sole user, the County has been able to adequately ensure that no uses of the Site prohibited under the Covenant have occurred.

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

• ***Changes in Standards and TBCs (To Be Considered):*** There were no changes in standards since the ROD Amendment was signed on August 29, 2000. EPA has recognized State of California LUC requirements as an ARAR at sites within the state. Since the LUC for the Del Norte Site was put into place by DTSC, these requirements have already been met.

• ***Changes in Exposure Pathways:*** No changes in Site conditions that affect exposure pathways were identified as part of the Five-Year Review. First, there are no current changes in land use. Second, no new contaminants, sources, or routes of exposure were identified as part of this Five-Year Review. Finally, there is no indication that hydrologic/hydrogeologic conditions are not adequately characterized. Results from monitoring data indicate no significant contaminant migration from the original contaminated area.

There have been no changes in exposure pathways to ecological receptors identified during the review and inspection. Although the water table fluctuates with climatic factors, the contaminants of concern remain below ground and there are no complete exposure pathways to ecological receptors.

• ***Changes in Toxicity and Other Contaminant Characteristics:*** EPA revised the Region 9 Regional Soil Screening Levels (formerly PRGs) in December 2009 with an updated toxicity value for 1,2-DCP that is more stringent than previous Screening Levels. Nevertheless, the soil cleanup levels established in the 1985 ROD were less than the most recent soil Screening Levels, so the soil cleanup remains protective, using the revised cancer and non-cancer risk estimates.

Groundwater outside the contained plume meets the revised protectiveness threshold for 1,2-DCP, which is the 5 µg/l MCL. Within the contained plume, the MCL for 1,2-DCP has been waived as an ARAR and is not an RAO. Therefore, the revised toxicity estimate does not affect the protectiveness of the remedy.

In January 2009, OEHHA issued a drinking water Public Health Goal (PHG) for 2,4-D. The PHG is 0.02 mg/L, which is 10 times higher than the level of 2,4-D found at the Site. Therefore, this change does not impact the Site's protectiveness. A PHG is a health-based guidance level, not a promulgated standard.

• ***Changes in Risk Assessment Methods:*** We have identified no changes in risk assessment methodologies since the time of the ROD Amendment which would call into question the protectiveness of the remedy.

• ***Expected Progress Toward Meeting RAOs:*** Although the variability in the recent monitoring data do not lead to an identifiable trend toward eventual attainment of the MCL for 1,2-DCP, the remedy is meeting all RAOs for plume containment and control of exposure through ICs. The MCL for 1.2-DCP within the existing contaminated area was identified as an ARAR and waived as an RAO in the ROD Amendment.

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

No additional information has been identified that could call into question the protectiveness of the remedy.

Technical Assessment Summary

According to the review of relevant documents and data, site inspections, and interviews with Del Norte County personnel, the remedy is functioning as intended by the ROD, as modified by the ESD and ROD Amendment. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. Aside from the 5 µg/l MCL for 1,2-DCP for which a TI waiver was granted in 2002, all RAOs cited in the 1985 ROD and 2000 ROD Amendment have been met. There is no other information that calls into question the protectiveness of the remedy.

8. Issues

No issues affecting current or future protectiveness were identified throughout the course of the Third Five Year Review.

9. Recommendations and Follow-Up Actions

There are no recommendations necessary to address any formal issues nor are there any recommendations that would affect the protectiveness of the remedy.

The Five Year Review process, including the site inspection, provided an opportunity for EPA, DTSC and Del Norte County officials to discuss several follow-up actions to improve the efficiency of the operation and maintenance tasks without effecting the remedy. The monitoring program conducted by Del Norte County may be reduced from semi-annual sampling frequency to an annual event for the four monitoring wells. This change is specifically anticipated in the 2000 ROD Amendment. Representatives of all three agencies felt that an annual monitoring schedule was likely to be sufficient, although we agreed to await the full statistical analysis before making any recommendations for reducing sampling frequency for all four wells. We also agreed with the suggestion that the monitoring well locations and paths should be marked more clearly and the well numbers should be labeled on the wellhead caps.

10. Protectiveness Statement

The remedy at the Del Norte Pesticide Storage Area currently protects human health and the environment because there is no current exposure to the contamination that remains at the Site. A Land Use Covenant to Restrict Use of Property was recorded for both parcels of the single Operable Unit in 2007, and a title search confirmed that this institutional control is in place and effective to ensure long-term protectiveness.

The monitoring data confirm that the RAO of containment of the groundwater plume continues to be met. The current array of monitoring wells provides adequate assurance of no significant contaminant migration.

The plume has been stable since the groundwater treatment system was shut down in October 1997. Statistical analyses of the monitoring results since 1997 shows that the concentration of 1,2-DCP exceeds the MCL of 5 μg/l in only one monitoring well and has remained stable over the last few years after declining gradually. This MCL is an ARAR that was identified and waived as a Remedial Action Objective (RAO) in the 2000 ROD Amendment.

Ecological risks from the contaminated ground water are considered insignificant due to no complete exposure pathway to ecological receptors.

11. Next Review

This Site requires on-going Five-Year Reviews as a matter of statute, because the remedy does not allow for unrestricted use and unrestricted exposure. The next review will be conducted within five years of the completion of this Five-Year Review Report. The completion date is the date of signature shown on the cover of this report.

Figures and Maps

Del Norte Pesticide Storage Area Superfund Site, Crescent City, California Five Year Review

Del Norte Disposal Area,
Northern CA

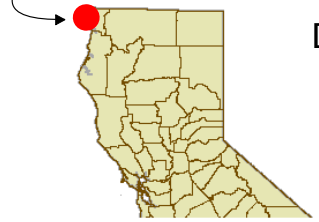

Figure 1: Area Map

EPA Region 9 GIS Center

Del Norte Pesticide Storage Area Five-Year Review: May 2010

N
W E
S

0 0.25 0.5 1 Miles

SFD1001811.1 May 04, 2010

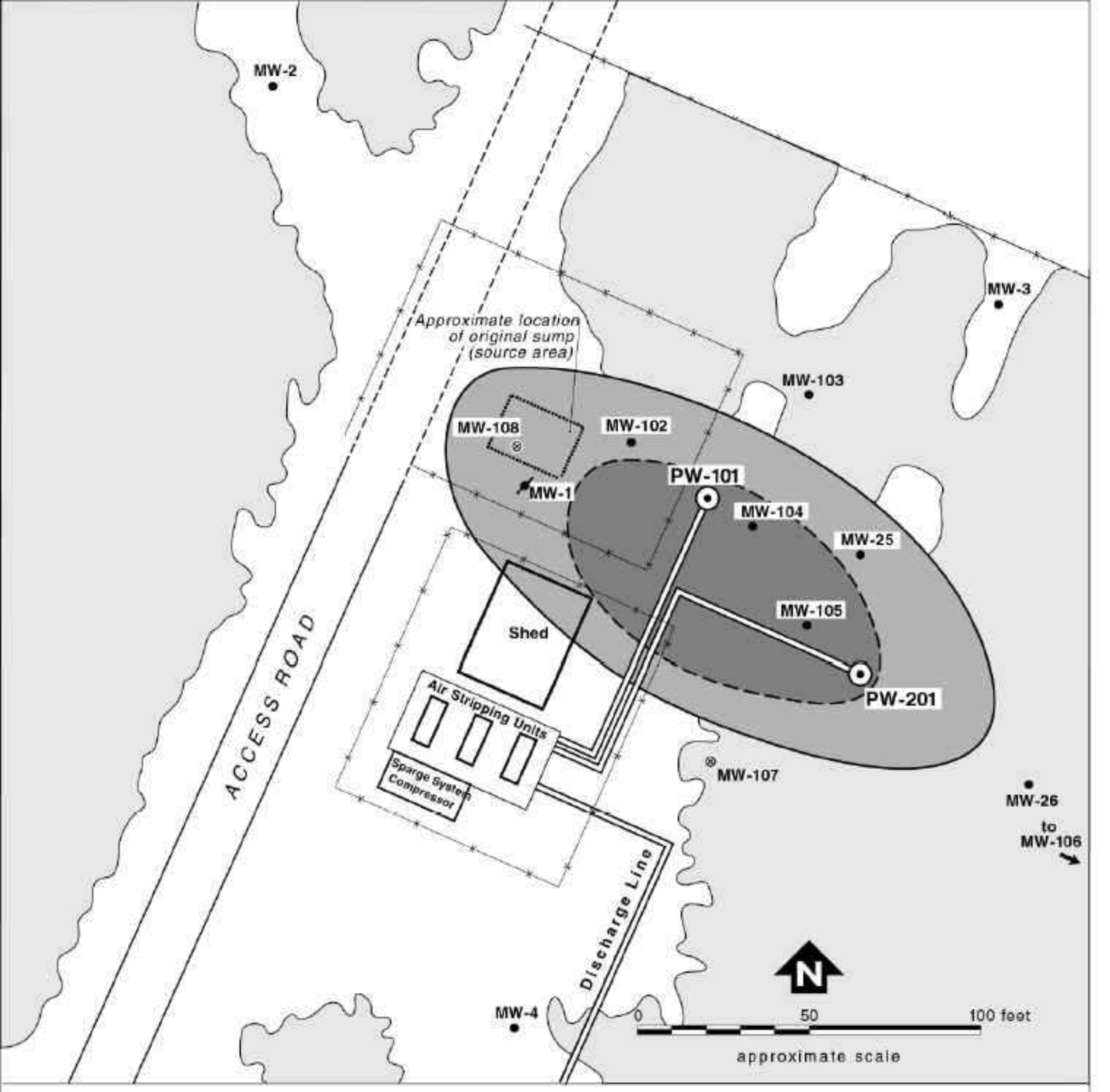

Figure 2
Areal Extent of 1,2 DCP Concentrations > 5 ppb
Del Norte Pesticides NPL Site
Crescent City, California

Current Site Photos

Del Norte Pesticide Storage Area Superfund Site, Crescent City, California Five Year Review

Boundary Fence between Airport and northern edge of Del Norte Pesticide Storage Area Site, View toward East. October 26, 2009.

Boundary Fence between Airport and northern edge of Del Norte Pesticide Storage Area Site, View toward Northwest. October 26, 2009.

Trench showing shallow depth to groundwater at Del Norte Pesticide site. 10/26/2009

Del Norte Site, trail to monitoring well through underbrush. 10/26/2009

Jack McNamara Field -Del Norte County Airport, Adjacent to Del Norte Pesticide Storage Site

Boundary Fence between Del Norte Pesticide Storage Site and Airport, View toward the East

Trench at northern edge of Del Norte Pesticide Storage Site,
Showing Shallow (1 meter) Depth to Water Table, October 26, 2009

Del Norte Site, October 26, 2009. Underbrush along Trail to Monitoring Wells

Del Norte Monitoring Well, Wellhead Exterior, October 26, 2009

Del Norte Monitoring Well, Wellhead Exterior, October 26, 2009

Del Norte Monitoring Well, Inside Protective Steel Casing, Well Not Identified. October 26, 2009

Del Norte Monitoring Well, Second Unidentified Wellhead, October 26, 2009

Entrance to County Property at Del Norte Pesticide Storage Site, Gate along Washington Boulevard – Southern Boundary of Site, October 26, 2009.

View toward South from Del Norte Site Entrance across Washington Boulevard, Showing Proximity to Pacific Ocean and Rural Surroundings. October 26, 2009.

Appendix A
Site Inspection Report

I. SITE INFORMATION	
Site name: Del Norte Pesticide Storage Area	**Date of inspection: 1/25/2007**
Location and Region: Crescent City, Del Norte County California; Region 9	**EPA ID: CAD000626176**
Agency leading the five-year review: US EPA Region 9 and DTSC project managers (Mayer and Lee), with Del Norte County manager (Aujuard)	**Weather/temperature: Approx. 60 F, Overcast after earlier rain**

Remedy Includes: (Check all that apply)

☐ Landfill cover/containment
☐ Access controls
X Institutional controls
☐ Groundwater pump and treatment
☐ Surface water collection and treatment
☐ Other
X Monitored natural attenuation
☐ Groundwater containment
☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached (see Figures section of Five Year Review)

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** ____Ron Aujuard_____ __Environmental Health Scientist_ __1/25/2007__
   Name Title Date
   Interviewed **X** at site **X** at office ☐ by phone Phone no. _707-464-3191 ext 295_
   Problems, suggestions; **X** Report attached __ _____

2. **O&M staff** _____NA_____ _____ _____
   Name Title Date
   Interviewed — ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

   Agency __California EPA, DTSC_
   Contact __Alex Lee____ Hazardous Substances Scientist __10/26/2009_ _510-540-3844
   Name Title Date Phone no.
   Problems; suggestions; ☐ Report attached __Conducted inspection along with Kevin Mayer of US EPA_

4. **Other interviews** (optional) **X** Reports attached.

   Agency _Del Norte Community Development (Planning) Department__
   Contact Ernie Perry __ _Director___ 3/02/2010 (707) 464-7254
   Name Title Date Phone no.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (All relevant documents kept at County office, not on-site)

1. **O&M Documents**
   - ☐ O&M manual ☐ Readily available ☐ Up to date **X** N/A
   - ☐ As-built drawings ☐ Readily available ☐ Up to date **X** N/A
   - ☐ Maintenance logs ☐ Readily available ☐ Up to date **X** N/A

   Remarks_____

2. **Site-Specific Health and Safety Plan** ☐ Readily available ☐ Up to date **X** N/A
   - ☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date **X** N/A

   Remarks_____

3. **O&M and OSHA Training Records** ☐ Readily available ☐ Up to date **X** N/A

   Remarks_____

4. **Permits and Service Agreements**
   - ☐ Air discharge permit ☐ Readily available ☐ Up to date **X** N/A
   - ☐ Effluent discharge ☐ Readily available ☐ Up to date **X** 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 **X** N/A

   Remarks_____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date **X** N/A

   Remarks_____

7. **Groundwater Monitoring Records** **X** Readily available **X** Up to date ☐ N/A

   Remarks:_____

8. **Leachate Extraction Records** ☐ Readily available ☐ Up to date **X** N/A

   Remarks_____

9. **Discharge Compliance Records**
   - ☐ Air ☐ Readily available ☐ Up to date **X** N/A
   - ☐ Water (effluent) ☐ Readily available ☐ Up to date **X** N/A

   Remarks _____No discharges _____

10. **Daily Access/Security Logs** ☐ Readily available ☐ Up to date **X** N/A

    Remarks_____

IV. O&M COSTS **N/A**

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_____
_____

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: ___Discussed reduction of monitoring frequency_____

V. ACCESS AND INSTITUTIONAL CONTROLS **X** Applicable ☐ N/A

A. Fencing

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

Remarks: Fencing was in good condition. Apparently new fencing along part of Washington Blvd.

B. Other Access Restrictions

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

Remarks: Signs are posted on fencing and at gate_____
_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

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

Type of monitoring (*e.g.*, self-reporting, drive by) _____N/A_____
Frequency _____
Responsible party/agency ___Del Norte County (landowner and manager), Cal EPA DTSC _____
Contact _Del Norte County Assessor's Office_ __(see attached interview report from 3/2/2010)
Name Title Date Phone no.

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

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

_____
__EPA confirmed that land use restrictions are recorded with the deed on both applicable parcels.

2. **Adequacy** **X** ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks: The ICs are adequate for the purpose designated in conjunction with County policies.

D. General

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

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

3. **Land use changes off site** ☐ N/A
Remarks: Reported planning for expansion of adjoining airport. County Health officials are actively involved in early planning efforts. No progress on expansion or development is expected in the near future due to economic conditions.

VI. GENERAL SITE CONDITIONS

A. Roads **X** Applicable ☐ N/A

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

B. Other Site Conditions

Remarks ___Underbrush obscures the location and pathways to the monitoring wells. This makes it difficult for staff unfamiliar with the site to easily locate the wells. EPA and DTSC agreed with the County staff that bright plastic marking would be useful.

VII. LANDFILL COVERS ☐ Applicable **X** N/A

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

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.).
Statistical analyses are to be conducted to establish whether the remedial action objects are predicted to be met in the near future. Such analysis could inform decisions to adjust monitoring frequency.

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.

_____
_____N/A_____

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 noted_____

D. Opportunities for Optimization

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

_____N/A_____

Appendix B – Interviews

INTERVIEW DOCUMENTATION FORM			
The following is a list of individual interviewed for this five-year review. See the attached contact records for a detailed summary of the interviews.			
Name	Title/Position	Organization	Date
Ron Aujuard	Environmental Health Scientist, Project manager for County	Del Norte Co.Department of Health and Human Services, Public Health Branch	10/26/2009
(Ernie Perry)	Director	Del Norte Co. Community Development Department	03/02/2010

INTERVIEW RECORD

Site Name: Del Norte Pesticide Storage Area		**EPA ID No.:** CAD000626176
Subject: Site Inspection for Five Year Review		**Time:** after 1 pm / **Date:** 10/26/2009
Type: **Visit** **Location of Visit:** County Office and Pesticide Storage Area Site		Incoming Outgoing
Contact Made By:		
Name: Kevin Mayer Alex Lee	**Title:** Remedial Project Manager Hazardous Substances Scientist	**Organization:** US EPA Region IX California EPA, DTSC
Individual Contacted:		
Name: Ron Aujuard	**Title:** Environmental Health Scientist, Project Manager for County	**Organization:** Del Norte County Department of Health and Human Services, Public Health Branch
Telephone No: (707) 464-3191 ext 295 **Fax No:** (707) 465-1792 **E-Mail Address:** raujuard@co.del-norte.ca.us		**Street Address:** 880 Northcrest Dr **City, State, Zip:** Crescent City, CA, 95531

Summary Of Conversation Kevin Mayer of EPA and Alex Lee of DTSC met with Ron Aujuard of Del Norte County at his office and later drove to the Del Norte Pesticide Storage Area site to continue our discussion along with the site inspection. We introduced ourselves and discussed plans to proceed with the Five Year Review including the site inspection. Mr. Aujuard is an experience professional that had been working for Del Norte County for a relatively short time. He assumed the project management responsibilities for the Superfund site upon the recent retirement of Leon Perrault, less than two months earlier. Mr. Aujuard had the site files and records in his office. (continued)

Page 1 of 2

Summary Of Conversation, continued (Mr. Ron Aujuard, Del Norte County, 10/26/2009

We spoke about the economic conditions of the County, particularly related to the sampling frequency and related analytical costs. There was some reason for optimism in the apparent slow rate of decline of the groundwater contaminants in the final monitoring well above the cleanup levels (Remedial Action Objectives). Yet the concentrations were likely to remain above the RAO for a few years, at least. We discussed how a statistical analysis might help predict when the RAO may be attained, and how many samples would be required for confirmation. In the meantime, the County was interested in reducing their costs by switching to a less frequent sampling schedule We asked Mr. Aujuard about any changes in land use patterns or development that might affect the project. He mentioned that there had been interest in expanding development of the County Airport. The Department of Health and Human Services was represented in a meeting and a field trip to the airport. Whether or not the airport development could have any effect on the cleanup project, the development plans seemed to have evaporated, at least temporarily, due to the economy.

We drove to the site along Washington Boulevard and noticed no new development since 2005. As we approached the site, we could see that the cyclone fence on the north side of the street appeared to be nearly new and in very good condition, with warning signs. This fence is part of the Site and airport security. Signs along the fence and at the gate are not specific about potential hazards from the residual contamination at the Superfund site. Very little of the land within the fenced County property is actually contaminated. Several vehicles were inside the gate for the site, apparently belonging to staff at the County Animal Control offices.

We walked along the dirt road through wooded area to the north end of the property near the fence for the airport. We observed the drainage ditch in this open area and noted that the water level was only three or four feet from the ground surface, indicating a relatively shallow water table.

We then tried to find the location of the monitoring wells in the wooded area with fairly thick, wet underbrush. Our location maps were of some help, but we could not be certain of the well identification numbers of the wells we found. Simply marking the PVC cap and well pipes with an indelible marker would be helpful. The caps of the outer steel protective casings had been replaced since 2005. This improved the protection of the well head from leaking rainwater. Some of the trails were overgrown and trail markings would be helpful to find our way to the wells. Mr. Aujuard suggested hanging brightly colored plastic tape (“tree tape”). He also thought that he might ask his predecessor to help confirm locations and identifications.

We went back to the entrance to see the gate and signage and to observe the proximity of the site to the farm house south of Washington Blvd and to the Pacific ocean. Alex and Kevin drove to the airport to get a sense of the size and activity, as well as orient ourselves to the Pesticide Area. The McNamara Airport is a small regional facility. There is no apparent evidence of construction or expansion anywhere on the facility, and certainly no activity near the Pesticide Area.

INTERVIEW RECORD

Site Name: Del Norte Pesticide Storage Area		**EPA ID No.:** CAD000626176	
Subject: Five-Year Review Telephone Inquiries		**Time:**	**Date:** 03/02/2010
Type: **Telephone** Visit Other **Location of Visit:**		Incoming **Outgoing**	
Contact Made By:			
Name: Kim Muratore	**Title:** Case Developer	**Organization:** US EPA Region IX	
Individual Contacted:			
Name: Staff	**Title:** Staff	**Organization:** Del Norte County Assessor's Office, and Del Norte Community Development (Planning) Department	
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Summary Of Conversation

I called the Del Norte County Assessor's Office and verified the following:

1) The two parcels in question, 110-010-22 and 120-020-36 are still owned by the County (they haven't changed ownership)

2) The deed restrictions on these two parcels, which was filed on 03/20/07 by DTSC, are still in place

I then called the Del Norte Community Development (Planning) Department and verified that the zoning for these two parcels has not changed since the last 5 year review. A portion of each parcel is zoned as RCA-1 (Resource Conservation District) aka swampy, open space; and a portion is zoned as MP (Manufacturing & Industrial Performance District). The zoning description for MP the County interprets as allowing for daycare or school usage, subject to approval for a use permit. However, during the course of the previous 5-year review, I interviewed the Director of the Community Development Department, Ernie Perry, and he said that a use permit would never be allowed, given the recorded deed restriction and the intention by the County to allow only airport-related uses of the County property

Appendix C