19.4

Five-Year Review Report

Second Five-Year Review Report
for
Gould Superfund Site
City of Portland
Multnomah County, Oregon

September 2002

PREPARED BY:
United States Environmental Protection Agency
Region 10

Approved by:

Michael F. Gearheard, Director
Environmental Cleanup Office
US EPA Region 10

9/30/02
Date

Table of Contents

Attachment 1 - Site Location Map
Attachment 2 - Site Plan
Attachment 3 - List of Documents Reviewed

List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	United States Environmental Protection Agency
CFR	Code of Federal Regulations
DEQ	Oregon Department of Environmental Quality
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PRP	Potentially Responsible Party
RA	Remedial Action
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SDWA	Safe Drinking Water Act

Executive Summary

The remedy for the Gould Superfund Site in Portland, Oregon included construction of an on-site containment facility, stabilization and consolidation of contaminated waste, soils and sediments on-site, institutional controls, and groundwater monitoring. The Site achieved construction completion with the signing of the Preliminary Close Out Report on September 28, 2000. The trigger for this five-year review was the completion of the first five-year report on September 30, 1997.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the Amended Record of Decision (ROD). The remedy is functioning as designed. Operation, maintenance and monitoring at the Site is being performed in accordance with the approved Operation and Maintenance Plan. The immediate threats have been addressed and the remedy is protective of human health and the environment.

Five-Year Review Summary Form

SITE IDENTIFICATION

Site name *(from WasteLAN)*: Gould

EPA ID *(from WasteLAN)*: ORD009412677

Region: 10	**State:** OR	**City/County:** Multnomah

SITE STATUS

NPL status: **G**x Final **G** Deleted **G** Other (specify) _____

Remediation status (choose all that apply): **G** Under Construction **G** Operating **G**x Complete

Multiple OUs?* **G**xYES **G** NO	**Construction completion date:** 9 / 28 / 02

Has site been put into reuse? **G** YES **G**X NO

REVIEW STATUS

Lead agency: **G**X EPA **G** State **G** Tribe **G** Other Federal Agency _____

Author name: Chip Humphrey

Author title: RPM	**Author affiliation:** US EPA Region 10

Review period:** 5 /15 /02 to 9 /30/02

Date(s) of site inspection: 6 / 18 / 02

Type of review:

X**G** Post-SARA **G** Pre-SARA **G** NPL-Removal only
G Non-NPL Remedial Action Site **G** NPL State/Tribe-lead
G Regional Discretion

Review number: **G** 1 (first) **G**X 2 (second) **G** 3 (third) **G** Other (specify) _____

Triggering action:

G Actual RA Onsite Construction at OU #____
G Actual RA Start at OU#____
G Construction Completion
Gx Previous Five-Year Review Report
G Other (specify) _____

Triggering action date *(from WasteLAN)*: 9 /30 /97

Due date *(five years after triggering action date)*: 9 / 30 /02

* ["OU" refers to operable unit.]
** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

Copies of the as-built drawings, Site-specific Health and Safety Plan were not available at the Site.

The gate to the Schnitzer property was unsecured.

The wetland mitigation property acquisition has not been completed. The Gould Site PRPs are actively pursuing the purchase of property through the Trust for Public Lands that has been approved by EPA and US Fish and Wildlife Service.

Recommendations and Follow-up Actions:

Copies of the as-built drawings and Site-specific Health and Safety Plan will be placed in the office/equipment trailer at the Site.

A sign-in sheet will be maintained at the office/equipment trailer.

A chain and lock has been installed on the gate to the Schnitzer property

EPA and US Fish and Wildlife will continue to monitor progress and ensure that acquisition of the off-site mitigation property is completed. The mitigation requirement is enforceable under the Consent Decree for Remedial Action.

Protectiveness Statement(s):

All immediate threats at the Gould Site have been addressed, and the remedy is protective of human health and the environment.

Other Comments:

.

Gould Superfund Site
Portland, OR
Second Five-Year Review Report

I. Introduction

The purpose of the 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 identify recommendations to address them.

The Agency is preparing this Five-Year Review report pursuant to CERCLA §121 and the National 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 judgement 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)(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 United States Environmental Protection Agency (EPA), Region 10, conducted the five-year review of the remedy implemented at the Gould Superfund Site in Portland, Oregon. This review was conducted by the Remedial Project Manager (RPM) for the Site from June 2002 through September 2002. This report documents the results of the review.

This is the second five-year review for the Gould Site. The triggering action for this statutory review is the completion of the first five-year review in September 1997. The five-year review is required due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

Table 1: Chronology of Site Events

Event	Date
EPA and DEQ investigations documenting lead contamination	**1982, 1983**
NPL listing	**Sept 1983**
RI/FS Consent Order signed signed	**August 1985**
RI/FS completed	**March 1988**
ROD for Soils Operable Unit signed	**March 1988**
Remedial Design Completed	**Sept 1991**
Unilateral Order issued for Remedial Action	**Jan 1992**
Contractor mobilized to start site preparation	**July 1992**
Cleanup operation suspended	**May 1994**
ROD Amendment signed	**June 1997**
Unilateral Order for Remedial Design and Early Remedial Action	**July 1997**
First five-year review completed	**Sept 1997**
Consent Decree for Remedial Action	**Feb 1998**
Remedial action construction excavation and stockpiling East Doane Lake sediments	**June - Oct 1998**
OCF construction begins	**May 1999**
Construction completion	**Sept 2000**
No-action ROD for Groundwater Operable Unit signed	**Sept 2000**
Preliminary Closeout Report	**Sept 2000**

Table 1: Chronology of Site Events

Event	Date
Operation and Maintenance begins	**Jan 2001**
Final Operation and Maintenance Plan approved	**May 2002**
Final Closeout Report Completed	**August 2002**
Operation and Maintenance	**Ongoing**

II. Background

Physical Characteristics

The Gould Superfund Site is located in the City of Portland, Oregon between NW St. Helen's Road and NW Front Avenue in a heavily industrialized area northwest of downtown Portland known as the Doane Lake area. The Site includes a 9.2 acre property currently owned by Gould Inc. that was the location of the former secondary lead smelter and battery recycle facility and areas outside the property boundary where battery casings and other residues from operations on the Gould property were placed.

The Gould Site is adjacent to the former location of the Rhone-Poulenc Ag Company (Rhone-Poulenc) facility. Rhone-Poulenc is conducting an investigation under DEQ oversight and State authority of on-ite and off-site contamination associated with their former pesticide and herbicide manufacturing facility.

The Gould Site is approximately one thousand feet southwest of the Willamette River. The Lower Willamette River, known as the Portland Harbor area, was recently added to the National Priorities List because of sediment contamination. A remedial investigation and feasibility study (RI/FS) of the lower Willamette River is being conducted by a group of Potentially Responsible Parties (PRPs) under a Consent Order signed by EPA and the PRPs in September 2001.

Land and Resource Use

The historic land use of the Site has been industrial since at least 1940. From 1949 until operations ceased in 1981, activities at the Site included secondary lead smelting The current land use for the surrounding area is industrial, commercial. The Willamette River is used for boating and fishing. It is anticipated that a mix of land uses similar to that described will continue into the future. In establishing cleanup requirements for the Site, EPA assumed that the Site would remain industrial. The Site itself is

currently fenced and the treated, stabilized soils and sediments are contained within the fenced area in the containment facility that was constructed with a double bottom liner and an impermeable cap.

The groundwater aquifer underlying the Site is currently not used as a drinking water source. The dominant groundwater flow direction is to the northwest toward the Willamette River.

History of Contamination

Secondary lead smelting operations began at the Gould Site in 1949 under the ownership of Morris P. Kirk and Sons, a subsidiary of NL Industries, Inc. (NL). Facility operations included lead-acid battery recycling, lead smelting and refining, and lead oxide production. Gould purchased the property in 1979 and closed the facility in 1981. During facility operations, discarded battery casing materials and other lead smelter wastes were used as fill on the Gould Site and an adjacent property. Acid from batteries was drained to Doane Lake during several years of operation.

Initial Investigation

In 1981 and 1982, a joint investigation of contamination at the Site was conducted by EPA and the Oregon Department of Environmental Quality (DEQ). Based on the results of the joint investigation, EPA included the Site on the NPL in 1983 because of documented lead contamination. In 1985 NL and Gould signed an Order on Consent with EPA under which the two companies conducted a RI/FS. The RI/FS was completed in February 1988.

Basis for Taking Action

The RI/FS showed there were high levels of lead contamination in soil, waste and debris and in East Doane Lake sediments at the Site. Exposures to lead-contaminated waste, soils and East Doane lake sediments were associated with significant human health risks.

IV. Remedial Actions

Remedy Selection

Soils Operable Unit

EPA signed a ROD for the Soils Operable Unit on March 31, 1988. The selected remedy included excavating and treating battery casings, recovering lead and casing materials for recycle, excavation of contaminated soil and East Doane Lake sediments followed by stabilization of excavated soil, matte, and sediment that exceeded RCRA characteristic hazardous waste levels, and monitoring air, ground water and surface water quality. Stabilized material would then be backfilled on-site. The 1988 ROD also included additional study of groundwater to determine whether action was needed because there was insufficient hydrogeologic information was available to make a decision on the groundwater.

The selected remedy was expected to control the migration of contaminants from the Site by minimizing releases to the air and groundwater. Surface soil (0 to 1ft depth) cleanup levels of 1000 mg/kg were selected to be protective for human industrial exposures, including direct contact, inhalation and ingestion. A primary objective of the selected remedy was to recycle materials that could potentially be recycled (lead and casing materials).

Remedy Implementation

Excavation and treatment of contaminated surface soils, battery casing piles, buried battery casings, matte (smelter waste), and other debris began in the summer of 1993. Excavated battery casings were processed through a battery treatment plant to separate materials (lead fines, metallic lead, clean plastic, and clean ebonite) for recycle. Contaminated soil and matte were stabilized to bind contaminants for backfilling on-site.

An estimated 24,000 tons of contaminated battery casings were treated through the treatment/separation process, with 244 tons of plastic and 88 tons of coarse lead recycled. An estimated 20,000 blocks (each measuring one cubic yard) of stabilized material was produced. Several hundred tons of contaminated debris were shipped off-site for disposal. Approximately 15,000 cubic yards of contaminated material were stockpiled on-site.

The treatment/recycle process was suspended in 1994 because of operational problems, inconsistent results, and significantly increased costs. EPA subsequently determined that the selected remedy was no longer appropriate based on operating experience and conditions at the Site.

Amended Remedy

In June 1997 EPA issued a ROD Amendment for the Soils Operable Unit that changed the cleanup remedy previously selected at the Site. The selected remedy included the following:

* Excavation and dewatering of contaminated East Doane Lake remnant (EDLR) sediments followed by backfilling the EDLR with clean imported backfill;

* Excavation of the remaining battery casings on the Gould property;

* Treatment (stabilization or fixation) of the lead fines stockpile, the screened Gould excavation stockpile; and other lead contaminated material identified as principal threat waste;

* Construction of a lined and capped on-site containment facility (OCF), with leachate collection and treatment, on the Gould property;

* Consolidating contaminated material, including sediments, treated and untreated stockpiled

materials, casings, soil and debris in the lined and capped OCF;

* Institutional controls, such as deed restrictions or environmental protection easements, which (1) provide EPA access for the purpose of evaluating the remedial action, and (2) limit future use of properties within the Site to industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, and to uses which do not damage the OCF cap and liner system or cause releases of buried materials;

* Performing groundwater monitoring to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and

* Long-term operation and maintenance requirements and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

The 1997 ROD Amendment also required off-site mitigation/restoration to comply with CWA Section 404 and implementing regulations as compensation for the loss of the estimated 3.1 acres of EDLR open water habitat.

The ROD Amendment retained the surface soil cleanup level for lead at 1,000 mg/kg (the cleanup level selected in the 1988 ROD). Lead contamination was the principal threat addressed in the ROD and the primary contaminant of concern addressed in the 1997 ROD Amendment. The ROD Amendment modified the contaminated subsurface material that would be excavated as part of the remedial action. Instead of requiring all subsurface material contaminated above EP Toxicity levels to be excavated, it allowed some subsurface materials in excess of those levels to remain in place based on types of materials, depth, location and updated information about groundwater contamination.

In the 1997 ROD Amendment, EPA determined that results of previous groundwater monitoring had not confirmed lead contamination in area groundwater. Data collected in 1995 and 1996 indicated that lead contamination was not widespread or significant in groundwater near the Site. The ROD Amendment further concluded that although it did not appear there was a need for treatment of groundwater for lead, monitoring would be continued to further evaluate Site conditions and provide a basis for future cleanup or no-action decisions for groundwater.

State Removal Action of East Doane Lake Sediments

DEQ issued a Removal Action Decision Memorandum under State law in May 1998 that evaluated removal alternatives for organic contamination in portions of the East Doane lake remnant that could be performed in conjunction with the sediment removal action described in EPA's ROD Amendment for the Gould Site. DEQ's evaluation was based on additional sampling in the East Doane Lake remnant which indicated that sediments were also contaminated with organic chemicals that appeared to be related to past waste management practices at the Rhone-Poulenc Ag Company (Rhone-Poulenc)

facility that was located adjacent to the Gould property. DEQ determined that removal of additional sediments in portions of East Doane Lake was warranted to address organic contamination and that the removal should occur in conjunction with sediment removal under the Gould Site remedial action. Rhone-Poulenc did not agree to perform the removal action and DEQ funded the removal of additional contaminated sediments.

Amended Remedy Implementation

Nine Gould Site PRPs signed a Consent Decree with EPA that was lodged in US District Court in Portland in March, 1998. The PRPs began work in the summer of 1998 with the excavation, dewatering and stockpiling of contaminated sediments from EDLR. Construction of the on-site containment facility, excavation and treatment of other contaminated materials, placement of the waste in the containment facility, and other cleanup actions required by the ROD Amendment have been completed as described below:

* East Doane Lake contaminated sediments - Dredging, mechanical dewatering and stockpiling an estimated 8700 cubic yards of contaminated EDLR sediment (including sediment removed as part of the DEQ removal action) and debris was completed in November 1999. In addition, 55 compressed gas cylinders that were buried in the east portion of EDLR were recovered, overpacked, and transported to an off-site facility for treatment and disposal.

* Gould property battery casings - An estimated 3590 cubic yards of battery casings and other waste material were excavated from the south shoreline of EDLR.

* Treatment of principle threat/stockpiled material - An estimated 7850 cubic yards of stockpiled material , including the lead fines stockpile, were treated by stabilization to pass RCRA characteristic waste levels.

* On-site containment facility - Construction of the 4.5 acre containment facility on the Gould property is complete. The OCF includes a double bottom liner, leachate collection and treatment, and a multi-media cap. The leachate collection and treatment system are operational. Leachate is pre-treated for metals prior to transport to the Rhone-Poulenc wastewater treatment facility for additional treatment prior to discharge to the Willamette River in accordance with Rhone-Poulenc's NPDES permit.

* Consolidating contaminated material in the OCF - An estimated 77,700 cubic yards of contaminated material have been placed in the OCF. The OCF was capped with a multimedia cap following materials placement. The final topsoil cover and seeding were completed in August 2000.

* East Doane Lake remnant and the open excavation in the Lake Area of the Rhone-Poulenc property - backfilling the East Doane Lake remnant and the open excavation in the Lake Area

of Rhone-Poulenc with clean material was completed in 1998 following excavation of the contaminated sediments.

* Institutional controls - Future use of the property is limited to industrial or other uses compatible with the cleanup under the terms of the Environmental Protection Restrictive Covenant and Easements that were granted by property owners to meet the requirements of the Consent Decree. EPA will evaluate the institutional controls at least every 5 years as part the 5 year reviews that will be conducted at the Site.

* Groundwater monitoring - groundwater monitoring was carried out during remedial action to ensure the effectiveness of the cleanup and that contaminants were not mobilized during its implementation; and to gather additional information for the groundwater evaluation. Long-term groundwater monitoring will continue as part of the remedial action requirements for the Soils Operable Unit and the operation and maintenance plan for the OCF.

* Long-term operation and maintenance requirements and reviews conducted no less often than every five (5) years to ensure the remedy continues to provide adequate protection of human health and the environment.

Other cleanup activities performed as part of the remedial action included demolition of on-site structures, asbestos abatement and PCB light ballast removal and disposal, and excavation of surface soils contaminated above the 1,000 ppm lead cleanup level established by the ROD Amendment. Extensive air monitoring of lead and particulate levels was conducted to ensure that fugitive dust from construction activities were adequately controlled. Perimeter security fencing was installed to restrict access to the OCF.

The Site achieved construction completion status when the Preliminary Closeout Report was signed on September 28, 2000. EPA and the State have determined that all RA construction activities, including the implementation of institutional controls, were performed according to specifications.

System Operation/Operation and Maintenance

The Gould Site PRPs are conducting long-term monitoring and maintenance activities according to the approved operation and maintenance (O&M) plan. Operation and maintenance activities began in January 2000 in accordance with the Final Remedial Design Report and Draft Operation and Maintenance Plan.

The Final Operation and Maintenance Plan was completed November 6, 2001. It addresses activities, responsibilities and schedules for the following Site components: OCF cover condition and stability, erosion and sedimentation controls, access roads, security fencing, stormwater systems, leachate collection and treatment, and groundwater monitoring. The Gould Site PRPs are conducting inspection, monitoring and maintenance activities according to the O&M plan.

The primary activities associated with O&M include the following:

Inspection of Site security: fences, gates and signage.

Visual inspection of the cap and side slopes with regard to vegetative cover, settlement, stability, and any need for corrective action. In addition, the cap is to be mowed as necessary to a typical height of 6 inches to allow establishment of grass, evaluation of cover conditions and inhibit woody vegetation.

Inspection of the stormwater drainage system for blockage, erosion and instability, and any need for corrective action.

Inspection of the condition of groundwater monitoring wells.

Environmental monitoring: Semi-annual monitoring of groundwater.

Inspection of the leachate collection system (manholes, leak detection pipes) and leachate pre-treatment system. Leachate is to be pumped to the frac tanks prior to 1 foot of water collecting in the bottom of the leachate collection system manholes. When the frac tank is approximately 75% full, leachate is to be pre-treated via the additive/mixing and filtration system and transferred to Aventis for final treatment and discharge.

The inspection frequency established in the final O&M Plan was once per month for the first year after construction completion, with quarterly inspections after the first year. Groundwater sampling is being conducted semi-annually for the first 5 years following completion of construction, and annually after the first 5 years.

The leachate pre-treatment system that was installed to treat leachate from the OCF prior to transporting it to the Rhone-Poulenc (now Aventis) treatment system was modified based on initial tests which determined that filtration was not sufficient as the sole means of treatment. An additive is being used to make the filtration process more effective and meet pretreatment requirements.

O&M costs include OCF cover and drainage structure maintenance, leachate pre-treatment, inspections, Site security and groundwater monitoring. First year costs were higher due the need to establish the vegetative cover on the cap and treatment of leachate. The O&M costs for the first two years are reasonably consistent with the originally estimated annual costs.

V. Progress Since the Last Five-Year Review

EPA's inspection of the Site for the first five-year review, which was conducted prior to initiation of the remedial action under the Amended ROD, identified the following issue that needed to be addressed:

The covers on waste stockpiles S-22 and S-19 had deteriorated and needed to be replaced. The stockpiles contained high concentrations of lead-contaminated material that could be released to the environment.

The Gould Site PRPs were directed to replace the covers, and the work was completed in October 1997. The stockpiles were placed in the OCF as part of the Gould Site cleanup under the Amended ROD that was initiated in 1998 and completed in September, 2000.

Operation, maintenance and monitoring activities are being conducted to ensure that the remedy remains protective.

VI. Five-Year Review Process

Administrative Components

Members of the Gould Site PRP Group and the DEQ were notified of the initiation of the five-year review in May, 2002. Natural resource trustees were notified on June 6, 2002. The Gould five-year review team was led by Chip Humphrey of EPA, Remedial Project Manager (RPM) for the Gould Site. Jill Kiernan from the DEQ assisted in the review as the representative for the support agency. Michael Moran from the US Army Corps of Engineers, who provided construction oversight for EPA, also assisted in the review.

Community Involvement

EPA has provided routine progress and fact sheets to keep the public advised of Site cleanup activities. There was not a great level of interest in the excavation of waste materials and construction of the OCF from the general public but workers at an adjacent METRO waste transfer facility did raise concerns about the potential for off-site migration of lead-contaminated dust. Arrangements were made to provide air monitoring results directly to representatives from the transfer facility to keep workers advised and provide assurances that lead levels were being adequately controlled.

EPA issued a fact sheet and published notices in the Oregonian in August 2002 regarding EPA's intent to delete the Gould Superfund Site from the NPL. The fact sheet announced the public comment period for the deletion proposal, described the cleanup activities completed and reasons that EPA was proposing the Site for deletion. The fact sheet briefly described future activities that would be conducted at the Site, including five-year reviews. No comments were received regarding EPA's intent to delete the Site from the NPL.

EPA will be issuing a fact sheet to announce the availability of this five-year review. It will announce that the Five-Year Review Report for the Gould Superfund Site is complete. The results of the review and the report will be available to the public at the EPA Oregon Operations Office and at the EPA Region 10 website.

Document Review

This five-year review consisted of a review of relevant documents including the ROD Amendment, O&M plan and maintenance and monitoring data.

Data Review

Groundwater monitoring has been conducted at the Gould Site since the late 1980s. In general, most contaminants were detected at their highest levels in the mid 1980s. Contaminant levels associated with the Gould Site dropped in the 1990s, which may have been the result of remedial activities eliminating significant source material. A review of quarterly and semi-annual groundwater monitoring results was conducted as part of the no-action ROD for the groundwater operable unit.

Lead levels in groundwater samples collected from wells located directly downgradient from the Site have been below 0.015mg/l, the current action level for lead established by the Safe Drinking Water Act (SDWA), for the past five years, and most of the results have been non-detect for lead. The most recent sampling results were non-detect (0.001 mg/l detection limit) for total and dissolved lead for all monitoring wells except well ASW-6, which had a detected total lead concentraction of 0.0027 mg/l. The SDWA action level for lead was the standard that was evaluated as a basis for EPA's no-action ROD for groundwater.

The area surrounding the Site is currently served by a municipal water supply system that provides potable water. There are no drinking water supply wells on or down gradient of the Gould Site. There are deep wells located near the Gould Site that have been used to supply water for industrial uses (non-drinking water) purposes.

Contamination associated with the former pesticide/herbicide facility adjacent to the Gould Site is being investigated by Rhone-Poulenc under DEQ oversight and authority. Extensive groundwater monitoring for organic contamination is being conducted as part of the investigation.

Site Inspection

An inspection at the Site was conducted on June 18, 2002, by the EPA RPM, DEQ and the Corps of Engineers (See Attachment) and a representative of the Gould Site PRP Group. The purpose of the inspection was to assess the protectiveness of the remedy, including the the integrity of the on-site containment facility, condition of the cover, leachate collection and treatment system, stormwater system, security fencing.

No significant issues were identified regarding the OCF, the cover, drainage structures. The OCF cover was in good condition and no settlement or subsidence was observed. The top surface and side slopes have a well-established grass cover that had been mowed prior to the inspection. One small

animal burrow that was observed was graded and re-seeded. The stormwater system (channels, inlets collection pipes and manholes) were clear of debris. It was noted that the gate to the adjacent Schnitzer property was partially open, and a chain and lock were installed to secure the gate. All other fencing and access controls were adequate.

EPA requested that a copy of the current as-built drawings, the Site Health and Safety Plan, and a sign-in sheet be maintained on-site in the Site trailer.

The institutional controls that are in place include prohibitions on the use or disturbance of containment facility, and any other activities or actions that might interfere with the implemented remedy. No activities were observed that would have violated the institutional controls. The containment facility and the surrounding area were undisturbed, and no new uses of groundwater were observed.

VII. Technical Assessment

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

The results of the Site inspection and review of documents, ARARs, risk assumptions, indicates that the remedy is functioning as intended by the Amended ROD. The excavation, stabilization and consolidation of the contaminated waste, soils, debris and sediments in the OCF has achieved the remedial objectives to prevent direct contact with or ingestion of contaminants.

Operation and maintenance of the on-site containment facility, leachate collection and treatment system, and stormwater runoff system has been effective. The Gould PRP Group are maintaining the remedy in accordance with the Amended ROD and O&M Plan . O&M annual costs are consistent with original estimates and there are no indications of any difficulties with the remedy. EPA and US Fish and Wildlife are currently working to ensure that the Gould Site PRPs complete the acquisition of off-site mitigation property. The failure to meet the wetlands mitigation requirements for the Site does not affect the potential for release of contaminants and does not affect protectiveness for the Site.

There were no opportunities for system optimization observed during this review. EPA will continue to assess groundwater data and the adequacy of the monitoring well network to ensure that it provides sufficient data to evaluate the effectiveness of the remedy..

The institutional controls that are in place include prohibitions on the disturbance of the cap, and any other activities or actions that might interfere with the implemented remedy. No activities were observed that would have violated the institutional controls. The cap and the surrounding area were undisturbed, and no new uses of groundwater were observed. The fence around the Site is intact and in good repair.

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?*

No significant changes to the remedial action objectives or cleanup levels are necessary based on the results of the five-year review. The following describes the objectives, cleanup levels and monitoring results:

1. Direct contact exposures: Prevent direct contact exposures to battery casings, waste material and contaminated soils.

The waste excavation and consolidation in the lined and capped OCF prevents direct contact with the contamination. Sampling verified that surface soils above 1,000 mg/kg cleanup level specified in the ROD have been excavated and placed in the OCF. The OCF cover system and clean imported backfill which was placed over the excavation areas also provide additional protection from direct contact exposures. Institutional controls limit future use of the Gould Site properties to uses compatible with the industrial cleanup levels selected and achieved for this Site.

2. Inhalation exposures: Prevent releases and inhalation of lead exceeding ambient air standards.

Previous violations of the ambient air standard for lead were attributed to releases from piles of battery casings and other waste material at the Site. Waste material and contaminated surface soils above 1000 mg/kg lead have been contained in the OCF. Air monitoring was conducted and protective measures were used throughout the remedial action to ensure that the remedial construction activities did not cause unacceptable releases of lead. Average quarterly lead concentrations for the Site did not exceed the Federal and State of Oregon standard of 1.5 ug/cubic meter (quarterly average).

3. Groundwater: Minimize migration of contamination from waste materials to ground water.

Sources of potential groundwater contamination were addressed in the remedial action for the Soils Operable Unit. EPA issued a no-action ROD for groundwater in September 2000 which documented the results of groundwater monitoring for Gould Site constituents. There have been no exceedences of the 0.015 mg/l action level for lead established under the Safe Drinking Water Act at the monitoring wells located on or directly downgradient of the Site for the past four years. The DEQ is continuing an investigation of organic contamination in groundwater associated with the adjacent Rhone-Poulenc property, and may require future cleanup of Rhone-Poulenc contaminants at Rhone-Poulenc and the Gould Site under state authority.

4. Wetlands: Provide mitigation for loss of wetland and open-water habitat.

EPA recently approved the wetlands mitigation plan which provides funding and requires acquisition of an off-site property as mitigation for the loss of East Doane lake wetland and open-water habitat. EPA will approve the specific property in consultation with US Fish and Wildlife Service prior to acquisition.

5. Future land use: 1) Provide EPA access for the purpose of evaluating the remedial action,

and 2) limit future use of properties within the Site to industrial operations or other uses compatible with the protective level of cleanup achieved after implementation of the selected remedial action, and to uses which do not damage the OCF cap and liner system or cause releases of buried materials.
Access is provided and future use of the property is limited to industrial or other uses compatible with the cleanup under the terms of the Environmental Protection Restrictive Covenant and Easements that were granted by property owners. The Restrictive Covenants and Easements were finalized and recorded for each of the Gould Site properties by September 2001.

There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. As the remedial work has been completed, most ARARs for soil contamination cited in the ROD have been met. Semi-annual groundwater monitoring is being conducted to evaluate groundwater quality relative to the action level for lead established under the Safe Drinking Water Act. Lead levels in groundwater samples collected from wells located directly downgradient from the Site have been below 0.015mg/l, the current action level for lead established by the Safe Drinking Water Act, and most of the results have been non-detect for lead. There have been no significant changes in ARARs and no new standards affecting the protectiveness of the remedy.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics
There have been numerous changes to the standardized risk assessment methodology since the completion of the endangerment assessment that was performed under the 1988 RI/FS. EPA reviewed information and evaluated changes that could affect the protectiveness of the remedy in the 1997 Amended ROD. No significant changes in lead exposure pathways or toxicity that could affect the protectiveness of the remedy were identified during the five-year review.

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

No other information that calls into question the protectiveness of the remedy was identified during the five-year review..

Technical Assessment Summary

According to the Site inspection and documents and data reviewed, the remedy is functioning as intended by the Amended ROD. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. ARARs for soil contamination cited in the Amended ROD have been met. No changes in the toxicity factors for the contaminants of concern were identified since the Amended ROD was issued. No other information was identified during hte five=year review that calls into question the protectiveness of the remedy.

VIII. Issues

The following issues were noted from the inspection -

Copies of the as-built drawings and the Site-specific Health and Safety Plan were not available at the Site at the time of the inspection..

The gate to the Schnitzer property was unsecured.

The following an off-site issue that does not affect the protectiveness of the onsite remedy:

The wetland mitigation property acquisition has not been completed. The Gould Site PRPs are actively pursuing the purchase of property through the Trust for Public Lands that has been approved by EPA and US Fish and Wildlife Service.

IX. Recommendations and Follow-Up Actions

EPA requested that copies of the as-built drawings and Site-specific Health and Safety Plan be placed in the office/equipment trailer at the Site.

EPA requested that a sign-in sheet will be maintained at the office/equipment trailer.

A chain and lock has been installed on the gate to the Schnitzer property

EPA and US Fish and Wildlife will continue to monitor progress and ensure that acquisition of the off-site mitigation property is completed. The mitigation requirement is enforceable under the Consent Decree for Remedial Action.

X. Protectiveness Statement

The remedy is protective of human health and the environment. Exposure pathways that could result in unacceptable risks have been controlled. All threats at the Site have been addressed through stabilization, consolidation and placement of contaminated waste, soil and debris in the on-site containment facility, the installation of fencing and warning signs, and the implementation of institutional controls. Long-term protectiveness of the remedial action will be verified by continued on-site inspections, operation and maintenance of the containment facility, and semi-annual groundwater monitoring. Current information indicates that the remedy is functioning as required.

XI. Next Review

The next five-year review for the Gould Superfund Site is required by September 2007, five years from the date of this review.

ATTACHMENTS

Site Map
Site Plan
List of Documents Reviewed

ATTACHMENT 3
List of Documents Reviewed

Record of Decision, Gould Site Soils Operable Unit, US Environmental Protection Agency, March 1988.

Amended Record of Decision, Gould Site Soils Operable Unit, US Environmental Protection Agency, June 1997.

Record of Decision, Groundwater Operable Unit, US Environmental Protection Agency, September 2000.

Final Report for Early Remedial Action and Remedial Action, Prepared for the Gould Site Respondents by Advanced GeoServices, March 2001.

Operation and Maintenance Plan, Gould Superfund Site, Prepared for the Gould Site Respondents by Advanced GeoServices, November 2001.

Semi-annual groundwater monitoring reports.