

Five-Year Review Report



Second Five-Year Review Report McCormick and Baxter Superfund Site Stockton, San Joaquin County, California

PREPARED BY

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Executive Summary

This is the second Five-Year Review (FYR) of the McCormick and Baxter Superfund Site (Site) located in Stockton, San Joaquin County, California. The purpose of this FYR is to review information to determine if the remedy is and will continue to be protective of human health and the environment. The triggering action for this FYR was the signing of the previous FYR on September 10, 2008.

The Site is located at 1214 West Washington Street within the City of Stockton, California in San Joaquin County. The Site occupies approximately 32 acres near the Port of Stockton at the junction of Interstate 5 and State Highway 4. The McCormick and Baxter Creosoting Company operated at the Site for approximately 50 years until 1991. Various wood preservation processes were used at the Site during its operational history. Preservatives included creosote, pentachlorophenol (PCP), arsenic, copper, chromium, and zinc. Solvents or carriers for these preservatives included petroleum-based fuels, such as kerosene and diesel, butane, and ether.

In March 1999, EPA selected the following remedies for the groundwater (OU-1) (interim remedy), uplands soils (OU-2), and surface water-sediment (OU-3) Operable Units at the Site to protect long-term human health and the environment:

- OU-1: Extraction of groundwater and on-Site treatment;
- OU-2: Excavation of contaminated soil in the eastern portion of the Site and subsequent consolidation and capping of these soils in the western portion of the Site;
- OU-3: In-situ capping of contaminated sediments in Old Mormon Slough north of the Site.

The interim groundwater remedy has not been implemented to date and will not be addressed in detail in this FYR. EPA is currently conducting semiannual groundwater monitoring as part of the focused feasibility study (FFS) to support the selection of the final groundwater remedy for the Site. Although there is no implemented remedy for the groundwater OU, there are no complete exposure pathways.

In 2005, EPA issued an Explanation of Significant Differences (ESD) to clarify that the sediment remedial action included bank stabilization work needed to protect the cap and the permanent relocation of the individual living on a barge in the slough (including relocation of his vessels).

The remedy for the surface water-sediment OU is protective of human health and the environment. All exposure pathways have been eliminated or controlled through the installation of the sediment cap and implementation of institutional controls.¹

The remedy for the soils OU is protective of human health and the environment. All exposure pathways have been eliminated or controlled through the excavation of contaminated soils, installation of the asphalt cap, and partial implementation of institutional controls. To be protective in the long term, all land use restrictions need to be implemented.

¹ In the McCormick and Baxter Record of Decision (ROD), institutional controls include site access controls as well as land use restrictions.

The implemented remedies for the McCormick and Baxter Superfund Site are protective of human health and the environment because all exposure pathways have been eliminated or controlled.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: McCormick and Baxter Creosoting Co.		
EPA ID: CAD009106527		
Region: 9	State: CA	City/County: Stockton, San Joaquin

SITE STATUS	
NPL Status: Final	
Multiple OUs? Yes	Has the Site achieved construction completion? No

REVIEW STATUS	
Lead agency: EPA	
Author name: Patricia Bowlin	
Author affiliation: USEPA Region 9	
Review period: 14 November, 2012 – 10 September, 2013	
Date of site inspection: 18 April, 2013	
Type of review: Statutory	
Review number: 2	
Triggering action date: 10 September, 2008	
Due date: 10 September, 2013	

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the Five-Year Review:				
Surface Water-Sediment				
Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 2	Issue Category: Institutional Controls			
	Issue: Land use restrictions not fully implemented.			
	Recommendation: Record Land Use Covenant (LUC) for McCormick and Baxter-owned property			
Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	State	EPA	09/30/2018

Five-Year Review Summary Form (continued)

Protectiveness Statement(s)		
Operable Unit: Soil	Protectiveness Determination: Protective	Addendum Due Date (if applicable):
Protectiveness Statement: The remedy for the Soils OU is protective of human health and the environment. All exposure pathways have been eliminated or controlled through the excavation of contaminated soils, installation of the asphalt cap and partial implementation of institutional controls. To be protective in the long term, all land use controls need to be implemented.		
Protectiveness Statement(s)		
Operable Unit: Surface Water-Sediment	Protectiveness Determination: Protective	Addendum Due Date (if applicable):
Protectiveness Statement: The remedy for the Surface Water-Sediment OU is protective of human health and the environment. All exposure pathways have been eliminated or controlled through the installation of the sediment cap and implementation of institutional controls.		

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List of Abbreviations

ARAR	Applicable or Relevant and Appropriate Requirements
bgs	Below Ground Surface
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
COC	Contaminants of Concern
DNAPL	dense non-aqueous phase liquid
DTSC	California Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FS	Feasibility Study
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
IC	Institutional Control
IRIS	Integrated Risk Information System
LUC	Land Use Covenant
M&B	McCormick and Baxter
MCLs	Maximum Contaminant Levels
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
ng	nanograms
NAPL	Non Aqueous Phase Liquid
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
OSWER	Office of Solid Waste and Emergency Response
PAHs	Polycyclic Aromatic Hydrocarbons
PCP	Pentachlorophenol
PRG	Preliminary Remediation Goal
RA	Remedial Actions
RAO	Remedial Action Objectives
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RSL	Regional Screening Level (Formerly PRG)
RWQCB	California Central Valley Basin Regional Water Quality Control Board
TBC	To Be Considered
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence
µg/L	Micrograms per Liter
UCL	upper confidence limit
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
VOCs	Volatile Organic Compound

Second Five-Year Review Report for McCormick and Baxter Superfund Site

1. Introduction

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of FYRs are documented in five-year review reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 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 is being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.”

EPA interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii), which 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 actions no less often than every five years after the initiation of the selected remedial action.”

EPA Region 9, assisted by the U.S. Army Corps of Engineers (USACE), conducted the FYR and prepared this report regarding the remedy implemented at the McCormick and Baxter Superfund Site in City of Stockton, San Joaquin County, California. EPA is the lead agency for developing and implementing the remedy for the Site.

This is the second FYR for the McCormick and Baxter Superfund Site. The triggering action for this statutory review is the previous FYR. The FYR is required due to the fact that hazardous substances, pollutants, or contaminants remain at the Site at levels above those that would allow for unlimited use and unrestricted exposure.

The Site consists of three operable units: groundwater (OU-1), uplands soils (OU-2), and surface water-sediment (OU-3). Final remedies were selected for the surface water-sediment OU and the soils OU, while an interim remedy was selected for the groundwater OU. In 2005, EPA issued an Explanation of Significant Differences (ESD) to clarify that the sediment remedial action included bank stabilization work needed to protect the cap and the permanent relocation of the individual living on a barge in the slough (including relocation of his vessels).

2. Site Chronology

The following table lists the dates of important events for the McCormick and Baxter Superfund Site.

Table 1. Chronology of Site Events

Event	Date
McCormick & Baxter Creosoting Company was in operation at the Site.	1946 - 1991
A fish kill in New Mormon Slough and Stockton Deepwater Channel was caused by PCP-contaminated storm water runoff from the Site.	1977
RWQCB issued a Cleanup and Abatement Order.	1978
M&B entered into an agreement with DTSC and RWQCB to investigate on-site contamination.	1984
EPA site inspection, preliminary assessment, and hazard ranking were conducted.	1984
M&B filed for bankruptcy.	1988
M&B baseline (human health) risk assessment.	1990
M&B ceased on-site wood treating operations.	1990
Site placed on National Priorities List.	1992
EPA became the lead agency for Site cleanup.	1992
Removal of industrial chemicals, sludge, tanks, demolition and removal of most buildings was completed.	1992-1997
Combined Remedial Investigation/Feasibility Study activities were conducted.	1992-1999
A sheet-pile wall was installed along Old Mormon Slough shoreline to control seeps from oily waste ponds area.	1996
Soil and oily waste was excavated from oily waste ponds area and transferred to a lined on-site disposal area. The oily waste pond area was backfilled with clean soil; a lined disposal area and main processing area were capped with asphalt.	1997
The Proposed Plan was issued.	1998
The Record of Decision (final remedies for soil and sediment and interim remedy for groundwater) was signed.	1999
Remedial design of the sediment remedy was developed.	1999-2002
Phase I of the sediment remedy was completed (bank stabilization).	2003
An Explanation of Significant Differences was issued.	2005

Event	Date
Remedial design/remedial action negotiations were conducted for the soil remedy.	2000-2006
Vessels were removed from the capping area within Old Mormon Slough.	2006
The Phase II sediment remedy was completed (sediment capping).	2006
A Consent Decree for soil RD/RA was issued.	2007
The first five-year review was completed.	2008
Post-construction bathymetric survey of the sediment cap was conducted.	2008
Remedial design for the soils remedy was developed.	2008
Soil remedy excavation, confirmation sampling, and cap installation were undertaken.	2009-2011
Post-construction chemical sampling of the sediment cap was conducted.	2010
The second five-year review was completed.	2013

3. Background

3.1. Physical Characteristics

The McCormick and Baxter Superfund Site (Site) is located at 1214 West Washington Street within the City of Stockton, San Joaquin County, California. The Site occupies approximately 32 acres near the Port of Stockton at the junction of Interstate 5 and State Highway 4 (Figure 1). The Site is bounded by Old Mormon Slough to the north, Washington Street to the south and east, and an industrial facility (located at the Port of Stockton Turning Basin) to the west. An 8-acre parcel of land in the southeastern portion of the Site is owned by the Union Pacific Railroad (UPRR). The nearest residential area is located approximately 500 feet southwest of the Site.

Nearby surface water bodies in addition to Old Mormon Slough include New Mormon Slough, the Stockton Deepwater Channel, and the San Joaquin River. Regionally, the Site is situated on the margin of the Sacramento River-San Joaquin River Delta in the Great Valley geomorphic province of California. The terrain has low relief, with elevations ranging from 8 to 15 feet above mean sea level (MSL).

The primary facility areas identified as principal sources of contamination include the main processing area (MPA), oily waste ponds area (OWPA), Cellon process area (CPA) and PCP mixing shed/butt tank area (Figure 2).



Figure 1. Location Map for the McCormick and Baxter Superfund Site



Figure 2. Principal source areas of the McCormick and Baxter Superfund Site

3.2. Hydrology

Site hydrostratigraphy is complex. The shallow aquifer and the uppermost portion of the deep aquifer beneath the Site have been subdivided into five water-bearing zones designated as Zones A through E. These zones represent intervals of intermixed sands, clays, and silts occurring at the following depths below ground surface (bgs):

A-Zone: 0 – 60 ft

B-Zone: 60 – 100 ft

C-Zone: 100 – 150 ft

D-Zone: 150 – 200 ft

E-Zone: 200 – ≥ 1000 ft

The five zones are not hydraulically isolated from one another but separated by silt-sand mixtures which impede (but do not prevent) groundwater movement between zones. Groundwater flow within the zones beneath the Site is predominantly horizontal and has varied in flow direction from northeast to southeast due to seasonal and aquifer zone differences plus nearby historical water extraction (pumping from City of Stockton production wells closest to the Site ended in 1993). Typical horizontal groundwater velocities in the A-, B-, C-, D- and E-zone units are 0.14, 0.05, 0.05, 0.03, and 0.18 ft/day, respectively. These estimates are quite low, and equate to just 11 to 65 ft/year. With few exceptions, the observed vertical gradient of flow between aquifer zones has been downward. In areas of the Site where inter-zone semi-confining units are of substantial thickness, vertical groundwater velocities are approximately two orders of magnitude lower than horizontal velocities.

3.3. Land and Resource Use

The Site is located in a predominantly industrial land-use area. An industrial facility operates to the west of the Site adjacent to the Turning Basin. Other nearby land uses include light manufacturing and residential. The nearest residential areas are one that is approximately 500 feet southwest of the Site boundary and another 750 feet southeast of the Site, beyond the I-5/Hwy 4 junction. These residential areas can be seen in the southwestern and southeastern quadrants of Figures 1 and 2. The 1999 Record of Decision (ROD) identified then-current and projected land use of the Site as continued industrial. This is consistent with the present land use at the Site. It is also consistent with the City of Stockton's 2035 General Plan, which designates the immediate Site area as industrial with commercial land use to the north, low-density residential to the southwest and medium-density residential to the southeast. Non-potable supply wells (for either industrial or agricultural uses) exist to the northeast of the Site; however, the high salinity and total dissolved solids content of the water indicate that potable supply wells likely would not be installed down gradient of the Site. The nearest active municipal water supply wells to the Site are situated over 3.5 miles to the northeast. The City of Stockton has a population of 291,707 (2010 U.S. Census), most of whom reside within five miles of the Site.

Old Mormon Slough was historically used for water-borne transportation of lumber and other goods, and the western end of the Slough, where it adjoins the Turning Basin, is still used as a docking area for barges and other vessels. At the time the sediment remedy was entering the remedial design stage, there was an individual living on an old produce barge docked near the eastern end of the slough.

3.4. History of Contamination

The McCormick and Baxter Creosoting Company conducted wood treating operations at 1214 West Washington Street from 1946 until 1990. Various wood preservation processes were used at the Site during its operational history. The treated wood products were used primarily by power utilities, railroads, and the construction industry. Preservatives included creosote, pentachlorophenol (PCP), arsenic, copper, chromium, and zinc. Solvents or carriers for these preservatives included petroleum-based fuels such as kerosene and diesel, butane, and ether.

Soil contamination occurred through the various handling processes and some on-site disposal of products containing the preserving chemicals. Sediment contamination resulted from stormwater runoff, direct spills of chemicals during processing operations and unloading of chemicals from barges, and migration of non-aqueous phase liquid (NAPL) from the upland portion of the Site. Groundwater contamination occurred through both free-phase and dissolved-phase transport through the vadose zone and spread as the result of advective and dispersive properties of the aquifer and chemical media.

Contamination at the Site was discovered in 1977 when a fish kill occurred in the waters of the New Mormon Slough and Stockton Deepwater Channel following a major storm event. This prompted an investigation into the cause. It was discovered that PCP-laden stormwater runoff from the McCormick and Baxter facility discharged into New Mormon Slough via a connection to the City storm drain system. Based on the results of a preliminary assessment/site inspection, EPA proposed the McCormick and Baxter Site for inclusion on the National Priorities List (NPL) and finalized the listing in October 1992.

3.5. Initial Response

In response to the findings of the 1977 fish kill investigation, the California Regional Water Quality Control Board (RWQCB) adopted a Cleanup and Abatement Order (“C&A Order”) in 1978. Pursuant to the C&A Order, McCormick and Baxter installed a stormwater collection system and perimeter levees to prevent further stormwater discharges from the Site.

In 1981, McCormick and Baxter closed the oily waste ponds by removing approximately 144 tons of contaminated soil from the area of the larger pond and backfilling the area with clean fill. In 1984 McCormick and Baxter entered into an agreement with the California Department of Toxic Substance Control (DTSC) and the RWQCB to conduct soil and groundwater sampling under State oversight. Additional soil and groundwater contamination was found to be present. McCormick and Baxter operated two groundwater extraction wells beginning in the mid-1980s to provide limited control of the groundwater contaminant plume. Dust control was practiced at the Site until closure; however, no actions to address soil or sediment contamination were undertaken.

In 1988, McCormick and Baxter filed for bankruptcy protection under Chapter 11 of the Bankruptcy Code. On November 7, 1990, the U. S. Bankruptcy Court for the District of Oregon entered a First Amended Plan of Reorganization, which included an Agreement RE Environmental Remediation of Stockton Facility (“Reorganization Plan”). The Reorganization Plan required, in part, that McCormick and Baxter undertake environmental response actions at the Site. On October 25, 1991, McCormick and

Baxter advised the State of California (“State”) that due to actions by McCormick and Baxter’s lender, McCormick and Baxter would cease operating and discontinue environmental response actions.

From 1992 to 1997, EPA conducted several phases of removal actions to stabilize Site conditions, improve Site security, and demolish and dispose of above-ground structures and equipment which posed both health and safety hazards. In 1996, EPA addressed contaminant releases into Old Mormon Slough by installing a 437-foot long sheet-pile wall along the southwestern shoreline of the slough to control oily seepages from the former oily waste ponds area. In 1997, EPA excavated approximately 12,000 cubic yards of contaminated soil from the ponds area and contained the excavated soil in a lined repository in the central portion of the Site. EPA then covered the lined repository and main processing area with an asphalt cap.

3.6. Basis for Taking Action

The primary contaminants of concern (COCs) for the McCormick and Baxter Superfund Site are PCP, carcinogenic polynuclear aromatic hydrocarbons (PAHs), arsenic, dioxins/furans, and naphthalene. The presence of these contaminants in groundwater, soils, and sediments provided the basis for taking action under CERCLA. Dioxin and arsenic (by direct contact with soils) and PCP (by ingestion of groundwater) were considered possible and/or probable human carcinogens. The primary threat to human health was posed by incidental ingestion and dermal absorption by on-site workers exposed to Site soils.

Elevated chemical concentrations in Site soils appeared to be present primarily in the western portion of the Site, mainly in the vicinity of the former main processing area, the Cellon processing area, the oily waste ponds area, and the track pit. Areas containing lower levels of contaminants in the western portion were the former pole wash, tank farm, and butt tank areas. Concentrations of COCs in Site soils generally decreased with depth, with one notable exception described below.

Groundwater contamination at the Site was limited to semi-volatile organic compounds and, to a lesser extent, dioxins. Arsenic levels were consistent with naturally occurring background concentrations with the exception of elevated levels in one well within the main processing area.

Sediment contamination related to the Site was ostensibly limited to the adjacent Old Mormon Slough. The primary COCs identified in sediments were PAHs and dioxin; PCP was not widely distributed. Concentrations of PAHs and dioxin were elevated in Old Mormon Slough sediments relative to concentrations at the Stockton Channel reference location. Total PAH concentrations in Old Mormon Slough decreased with increasing depth in the western half of Old Mormon Slough, and increased with increasing depth in the eastern half of the slough.

Because aquatic species migrate to surface water habitats near the Site, including Old Mormon Slough, and reside there for extended periods during sensitive life stages, the focus of the McCormick and Baxter Ecological Risk Assessment was on the aquatic environment. The results of the Ecological Risk Assessment indicated that while sediment contamination for most Site COCs was greater in Old Mormon Slough than in surrounding areas, ecological effects were localized. Some risk to receptor species can be attributed to the presence of PAHs and dioxin, and to a lesser extent, PCP, in surface sediments. In general, Site-related metals were not found to be a risk factor to any of the ecological risk assessment

endpoints. Although the results for PCP were less certain, PCP was estimated to have a potential impact on both fish and benthic animals. The 18 PAHs posed a risk to all assessment endpoints; threshold limits for PAHs were exceeded principally for fish and benthic fauna. Dioxin had little effect on the assessment endpoints, but was estimated to be a potential low risk to bird and fish reproduction and health.

4. Remedial Actions

The following section details the remedial actions selected for the Operable Units at the Site and the status of their implementation, and Site operation and maintenance.

4.1. Remedy Selection

On March 31, 1999, the ROD was signed for the Site. Final remedies were selected for the soils OU and the surface water-sediment OU, while an interim remedy was selected for the groundwater OU.

4.1.1. Groundwater and Soils Remedies

Remedial action objectives (RAOs) identified in the ROD for the groundwater and vadose zone soils OUs are as follows:

- Prevent human exposure to contaminated surface soils via direct contact, ingestion or inhalation
- Prevent stormwater runoff of contaminated surface soils into adjacent surface water bodies
- Prevent or minimize the migration of contaminants from subsurface soils and from Old Mormon Slough sediment to groundwater
- Prevent human exposure to groundwater contaminated at levels above drinking water standards
- Prevent the further spread of the groundwater contamination plume
- Remove NAPL to the extent practicable to reduce the continuing source to groundwater contamination
- Contain NAPL sources that cannot be removed
- Evaluate remedial action technologies for further groundwater risk reduction (40 CFR Section 300.430(a)(1)(iii)(F)).

Cleanup levels for groundwater have not been established for the Site because a final groundwater remedy has not been selected.

Selected Groundwater Remedy

The interim groundwater remedy identified in the ROD included the following components:

- Extraction of groundwater from an estimated 16 A-Zone, 12 B-Zone, 9 C-Zone, 4 D-Zone and 2 E-Zone wells to contain the contaminant plume;
- Systematic extraction of dense non-aqueous phase liquid (DNAPL) using dedicated wells and removal of light non-aqueous phase liquid using a skimmer in one of the wells (Well A-8);
- On-Site treatment of groundwater through the preferred groundwater treatment train;
- Disposal of treated groundwater through a combination of discharge into surface water as permitted by the National Pollution Discharge Elimination System (NPDES) and reuse for irrigation or industrial uses;
- Off-Site recycling or treatment/disposal of extracted NAPL;

- Long-term monitoring of groundwater and NAPL.

Selected Soil Remedy

In order to identify general response actions and focus the formation of remedial alternatives, EPA divided the Site soils into subareas (see Figure 2). The subarea delineations were based on the lateral and vertical extent of COCs at concentrations above preliminary surface soil cleanup levels, and also took into consideration the locations of historical chemical use and waste storage areas at the Site.

Subarea X included soil contamination in the eastern portion of the Site. Historically, treated wood was stored throughout Subarea X. The resulting soil contamination was shallow, generally restricted to the upper 1 foot. Arsenic was the most widely distributed COC in this subarea. Other chemicals of concern (dioxins, benzo(a) pyrene, and pentachlorophenol (PCP)) were found at much lower levels than in the western portion of the Site, and concentrations were elevated only at a few isolated “hot spots.” At only one location, in the filled area of the slough, was contamination found as deep as 13 feet bgs in the eastern portion of the Site.

Subarea Y included soil contamination to 13 ft bgs in the western portion of the Site. Historical operations in the western portion of the Site occurred at the central processing area and the oily waste ponds. Subarea Y also included areas used for treated wood storage and the former stormwater collection ponds. Contamination in Subarea Y included all the organic and inorganic COCs. The most heavily impacted areas in Subarea Y were in the central processing area and the former oily waste pond area. Subarea Y represented only vadose zone contamination. Deeper soil contamination underlying Subarea Y makes up a third subarea, Subarea Z.

Soil cleanup standards identified in the ROD are shown in Table 2.

Table 2. OU-2 COC Cleanup Levels for Soil, Vadose Zone

Contaminant of Concern	Cleanup Level (mg/kg except as noted)	Basis for Cleanup Level
Carcinogenic PAHs - Benzo(a)pyrene	3.6	Based on 1999 EPA Region 9 Preliminary Remediation Goals (PRGs; currently known as regional screening levels or RSLs) adjusted to a 10 ⁻⁵ risk
Non-carcinogenic PAHs - Acenaphthene	1100	
- Anthracene	57	
- Flourene	900	
- Naphthalene	190	
- Pyrene	1000	
Pentachlorophenol	150	
2,3,7,8-TCDD (Dioxin)	1 µg/kg (dry weight, organic carbon normalized)	
Arsenic	30	

The selected soil remedy consisted of excavating all the Subarea X contaminated soil exceeding soil cleanup standards, moving it to a separate location within the Subarea Y boundary, and covering the consolidated Subarea X and Y soils with a cap. The components of this remedy included:

- Site clearance and debris removal
- Excavation of Subarea X soils
- Initial grading of the area to be capped

- Backfilling of Subarea X excavations with clean import fill
- Backfilling and grading of the stormwater ponds with a portion of excavated Subarea X soils (approximately 10,000 cy)
- Consolidation of remaining Subarea X soils in Subarea Y, and cap construction over the contaminated soil
- Cap maintenance
- Institutional controls (including all or some of the following: site access controls, land use restrictions, and proprietary and/or governmental restrictions).

4.1.2. Surface Water-Sediment Remedy

For the surface water-sediment OU, the ROD identified the following RAOs:

- Reduce potential risks to human health from the consumption of fish contaminated with Site-related chemicals.
- Prevent humans and aquatic organisms from direct contact with sediment having contaminants in excess of risk-based concentrations or that have been shown to be toxic to aquatic organisms.
- Prevent or minimize the migration of contaminants from Old Mormon Slough sediments into the surface water column
- Prevent or minimize the migration of contaminants from Old Mormon Slough sediments to groundwater
- Allow full attainment of the beneficial uses of surface waters in the area of the Site, including fish and shellfish harvesting and the protection of aquatic life and wildlife.

Sediment cleanup standards identified in the ROD (none for surface water) are shown in Table 3.

Table 3. OU-3 COC Cleanup Levels for Sediment (Old Mormon Slough)

Contaminant of Concern	Cleanup Level (mg/kg)	Basis for Cleanup Level
Total PAHs	333 (dry weight, organic carbon normalized)	Site-specific sediment cleanup levels based on the risk-based Maximum Sediment Concentrations developed in the Ecological Risk Assessment report
2,3,7,8-TCDD (Dioxin)	21 ng/kg toxicity equivalence (TEQ)	

Selected Surface Water-Sediment Remedy

Sediment contamination related to the McCormick and Baxter Site was limited to Old Mormon Slough located directly adjacent to the McCormick and Baxter facility. EPA divided Old Mormon Slough into four subareas based on the types and depths of contamination found at different parts of the Site: the eastern end (“END”), the area adjacent to the Site central processing area (“CPA”), the area adjacent to the oily waste ponds area (“OWP”), and the mouth of the slough (“MTH”).

The selected sediment remedy consisted of in-situ capping of contaminated Old Mormon Slough sediments in order to isolate areas of principal threat waste (approximately three-fourths of the slough) by blanketing them with a minimum of 2 feet of clean fine sand. The cap materials would be armored with

rip-rap and gravel filter layer where needed to prevent erosion. The portion of the slough to be capped would run from just north of the oily waste ponds (OWP) area to the east end of the slough.

In the MTH area, sampling results indicated two isolated locations, or “hot spots,” where concentrations exceeded sediment cleanup levels, which would be addressed by the use of institutional controls to:

- limit navigational access to the slough;
- provide more warning signs;
- limit future use of Old Mormon Slough to appropriate uses; and
- control future dredging of the slough to prevent disturbance of residual sediment contamination in the mouth of the slough.

Environmental monitoring would be conducted to assess the progress of natural attenuation processes in the MTH area.

The Explanation of Significant Differences (ESD) issued by EPA in 2005 identified changes affecting implementation of the remedy selected in the ROD for the surface water-sediment OU. One change to the sediment remedy was the inclusion of a bank stabilization component. During the remedial design process for the sediment remedy, it became apparent that the banks along the slough were eroding into the slough and, if not addressed, could be a source of recontamination after the sediment cap was in place. Because of this, EPA determined that it was necessary to stabilize the banks of the slough wherever contaminated soil was located. A second change is that it became necessary to relocate an individual living on a barge in the slough in order to implement the sediment remedy and to ensure that the cap, once constructed, would not be damaged by the continued presence of the barge.

4.2. Remedy Implementation

4.2.1. Groundwater Remedy

The interim groundwater remedy has not been implemented for the Site. This is because groundwater data collected at the Site since the 1999 ROD demonstrated apparent stability of the contaminant plumes. Since the 1999 interim groundwater remedy selection, a considerable amount of investigatory work has taken place concerning NAPL characterization and its direct impact on groundwater. NAPL investigations were conducted in 1999 and 2000, and NAPL removal via thermal treatment was evaluated as a potential part of the groundwater remedy in a 2001 conceptual design report. Routine groundwater monitoring has been conducted at the Site since 1998; currently sampling is conducted on a semi-annual basis. EPA is currently conducting a focused feasibility study (FFS). A 2010 field study using 13C naphthalene biotrap indicated evidence of widespread naphthalene degradation within all aquifer zones under both ambient methanogenic and sulfate-reducing conditions. As part of the FFS, the feasibility of treatment alternatives for both the source area and the dissolved plume will be evaluated. EPA plans to complete the FFS by the end of 2014.

4.2.2. Soil Remedy

Construction Activities were performed over two construction seasons from May 2009 through February 2011 and consisted of the following components:

- Demolition, clearing and grubbing, including demolition of the remaining buildings and structures located on the Site.
- Subarea X: remedial excavation of surface soil (to a maximum depth of 1 foot), with deeper excavation of hot spots, plus the collection of post-excavation confirmation samples
- Subarea Y: waste consolidation, including contaminated soil and non-vegetative debris stockpiled there from prior removal actions plus concrete debris, and the remedial excavation soil from Subarea X.
- Subareas X and Y: backfilling of the excavation areas and grading.
- Subarea Y: capping the consolidated waste with 6 inches of compacted aggregate base overlain by 2 inches of asphaltic concrete.
- Site restoration, including revegetation of Subarea X by hydroseeding, construction of drainage controls, and repair/replacement of the perimeter and slough fences.

Institutional controls include perimeter and slough fences with “No Trespassing” signs. In addition, a land use covenant (LUC) for the parcel owned by Union Pacific Railroad has been recorded. The LUC limits use, protects the integrity of remedial systems, and provides control over future grading and groundwater use on the Site. DTSC has drafted a similar LUC for the McCormick and Baxter-owned parcels that will also protect the integrity of the asphaltic concrete cap.

4.2.3. Surface Water-Sediment Remedy

The surface water-sediment remedy implementation commenced on October 22, 2002 with bank stabilization, a pre-capping remedy component constructed along the southern and eastern edge of the slough that was necessary to prevent the bank from eroding into the slough and potentially compromising cap integrity. Prior to beginning the cap placement, however, it was necessary to relocate an individual living on a barge in the slough (as well as to remove all vessels from the Slough) in order to ensure that the cap, once constructed, would not be damaged by the continued presence of the barge and/or movement of vessels in and out of the Slough. After lengthy but unsuccessful efforts by EPA to permanently relocate him, the resident was moved to a temporary relocation dwelling in 2006 and all vessels were removed from the capping area. Capping work was performed in the latter half of 2006. As placed (after some consolidation), all areas of the cap were at least 18 inches thick, 99.5% of the cap was greater than 18 inches thick, and the average cap thickness was 2.6 ft. Additionally, a log boom was installed at the outer end of the slough to prevent boat traffic from entering and damaging the cap, as well as to exclude people from fishing. Subsequent to completion of construction of surface water-sediment remedy, EPA relocated the vessels to the capped area of the slough. The vessels were eventually permanently removed in August 2007. Due to concerns that the vessels may have damaged the cap, a bathymetric survey was conducted in August 2008 and chemical sampling was conducted in August 2010.

4.3. Operation and Maintenance (O&M)

An operation and maintenance (O&M) Plan for the surface water-sediment OU was developed in 2006 and revised in 2010. The Plan provided for the additional bathymetric survey in 2008 and sediment chemical sampling in 2010 to confirm that the cap was not recontaminated above the cleanup standards. Per the O&M Plan, a draft O&M Manual, which serves as the technical guide for cap performance sampling and laboratory testing, has been completed.

A draft O&M Manual for the soils remedy was completed in 2012 and includes protocols for inspection and maintenance of the cap, revegetated areas, drainage controls, and fencing affected by the remedial action implementation. During the initial O&M period, sampling and analysis of the detention basin stormwater was required to evaluate Site stormwater quality prior to discharge to the municipal storm drain system starting with the 2011-2012 wet season. Two sampling events per year separated by at least 30 days are required for each basin for a period of three years.

Under the CD negotiated with EPA, Union Pacific Railroad Company has responsibility for specific operation and maintenance costs at the site, which are not disclosed. Thus actual total O&M costs over the review period are unavailable.

5. Progress Since the Last Five-Year Review

5.1. Previous Five-Year Review Protectiveness Statement and Issues

The protectiveness statement from the 2008 FYR for the McCormick and Baxter Superfund Site stated the following:

“The implemented surface [water] and sediment remedy at the McCormick and Baxter Superfund Site is protective of human health and the environment from risks posed by contaminated sediments in Old Mormon Slough. Protectiveness statements regarding the soil and groundwater OUs are deferred until after their respective remedy implementation.”

The 2008 FYR included two minor issues and recommendations. Each recommendation and its current status is discussed below.

Table 4. Status of Recommendations from the 2008 FYR

Issues from previous FYR	Recommendations	Party Responsible	Milestone Date	Action Taken and Outcome	Date of Action
Damaged Site perimeter fencing	Site fencing should be repaired and routinely checked for signs of damage or vandalism.	EPA	n/a	Fence repaired	2011
Damaged/ faded signage	Warning signs should be replaced if damaged or illegible.	EPA	n/a	Signage replaced	2011

5.2. Work Completed at the Site During this Five Year Review Period

The soils remedial design was completed in 2008, with subsequent soil remedy construction occurring in 2009-2011. The soil remedy was completed in 2011. For the sediment remedy, a bathymetric survey was

conducted in 2008 and chemical sampling was conducted 2010. For the groundwater FFS, a biotrap study was conducted in 2010 to assess the potential for bioattenuation of contaminants in groundwater. In addition, groundwater monitoring continued at the Site on a semi-annual basis.

6. Five-Year Review Process

6.1. Administrative Components

EPA Region 9 initiated this FYR in November 2012 and scheduled its completion for September 2013. The EPA review team was led by Patricia Bowlin of EPA, Remedial Project Manager (RPM) for the McCormick and Baxter Site. The review team also included the EPA site attorney, and support was provided by U.S. Army Corps of Engineers, Seattle District, including Ellen Engberg, geologist, and Jose Valdes, physical scientist. In November, EPA held a scoping call with the review team to discuss the Site and items of interest as they related to the protectiveness of the remedy currently in place. A review schedule was established that consisted of the following:

- Community notification
- Document review
- Data collection and review
- Site inspection
- Local interviews
- Five-Year Review Report development and review

6.2. Community Involvement

On May 22, 2013, a public notice was published in the *Stockton Record* announcing the commencement of the Five-Year Review process for the McCormick and Baxter Site, providing contact information, and inviting community participation. The press notice is available in Appendix B. No people contacted EPA as a result of this advertisement.

The Five-Year Review report will be made available to the public once it has been finalized. Copies of this document will be placed in the designated public repository: Cesar Chavez Central Library 605 N. El Dorado Street, Stockton, CA 95202-1907. Upon completion of the FYR, a public notice will be placed in the *Stockton Record* to announce the availability of the final FYR report in the Site document repository.

6.3. Document Review

This FYR included a review of relevant, site-related documents including the ROD, remedial action reports, and recent monitoring data. A complete list of the documents reviewed can be found in Appendix A.

ARARs Review

Section 121 (d)(2)(A) of CERCLA specifies that Superfund RAs must meet any federal standards, requirements, criteria, or limitations that are determined to be legally applicable or relevant and

appropriate requirements (ARARs); ARARs are those standards, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, RA, location, or other circumstance at a CERCLA site. Cleanup levels for response actions under CERCLA are developed based on site-specific risk assessments, ARARs, and/or to-be-considered materials (TBCs).

When ARARs are not fully protective, EPA may implement other federal or state policies, guidelines, or proposed rules capable of reducing the risks posed by a site. Such TBC standards, while not legally binding (since they have not been promulgated), may be used to achieve an acceptable level of risk.

Chemical-Specific

The ROD cleanup standards for soils and sediments are health-based TBCs, and not ARARs. They consider risks associated with dermal contact, ingestion, and inhalation of contaminated materials. Thus, there are no regulated soil cleanup values against which cleanup levels chosen in the ROD can be compared.

Location-Specific

No new information has come to light in this review to suggest changes to ARARs or TBC criteria for this location. Accordingly, the legal analyses performed at the time of the ROD and ESD remain valid.

Action-Specific

There are no remaining action-specific ARARs or TBCs for those OUs.

Construction is completed on both the surface water-sediment OU and the soil OU, and no new information has come to light in this review to suggest changes to ARARs or TBC criteria for soils or for sediment and surface waters. Accordingly, the legal analyses performed at the time of the ROD and ESD are no longer pertinent due to the phase of the remedies. There have been no revisions to laws and regulations that affect the protectiveness of the remedy.

For groundwater, since the ROD did not identify final ARARs or TBCs, nor did it establish in-situ groundwater cleanup standards, final identification of ARARs is deferred until the selection of the final groundwater remedy.

Human Health Risk Assessment Review

A human health risk assessment was completed for the Site as part of the remedial investigation, July, 1998 (ICF, 1998; see Appendix A). The baseline risk assessment identified the exposure pathways at the McCormick and Baxter Site as exposure to on-Site workers from soil by way of ingestion, inhalation, and dermal contact. Human ingestion of fish tissue from contaminated waters was also a concern.

The Site-related chemicals that contribute most to the excess carcinogenic risks are dioxin, arsenic, and PCP.

The risk assessment identified the exposure pathways and associated risks shown in Table 5.

Table 5. Human Health Risk Estimates

Exposure Scenario & Pathway		Risk Driver(s)	Risk Estimate	
			Average Cancer	Average Non Cancer
Adult Workers under and Industrial land use scenario	Ingestion of Soil	PAHs, Pentachlorophenol (PCP), Arsenic	5×10^{-4}	0.3
	Dermal contact with Soil		2×10^{-4}	0.1
	Inhalation of dusts in ambient air		3×10^{-4}	3×10^{-6}
Off site Residents under an Industrial land use scenario	Adult/ inhalation of fugitive dust		2×10^{-4}	4×10^{-8}
	Child/ inhalation of fugitive dust		4×10^{-4}	2×10^{-7}
Lifetime Ingestion of Fish Tissue	consumption rate of 150 g/day	2,3,7,8-TCDD (Dioxin)	$7 \times 10^{-5} - 3 \times 10^{-3}$	

The exposures that are most likely to pose excess carcinogenic risks at the McCormick and Baxter Site are those experienced by the on-site workers who are exposed to COCs in site soils through incidental ingestion and dermal absorption. However, any interpretation of the magnitude of these risks should consider the uncertainties associated with the risk estimates. The baseline risks associated with the carcinogenic COCs at the site exceeded EPA’s acceptable cancer risk of 10^{-4} to 10^{-6} , deeming cleanup necessary.

The risk assessments were reviewed and no changes in exposure pathways or toxicity were identified that would impact protectiveness.

Vapor Intrusion²: EPA’s understanding of contaminant migration from soil gas and/or groundwater into buildings has evolved over the past few years leading to the conclusion that vapor intrusion may have a greater potential for posing risk to human health than assumed when the ROD was prepared. In September 2002, EPA released an external review draft version of its vapor intrusion guidance titled “Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils.” In April 2013, EPA released a final draft version of its vapor intrusion guidance, *OSWER Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air (External Review Draft)*, to the public for comments.

Presently, site access is restricted with fencing and there are no occupied buildings, so the vapor intrusion pathway is incomplete. However, the plume has reached areas under some commercial buildings, and to a lesser extent into a residential area. The potential for vapor intrusion offsite is evaluated following a “multiple lines of evidence” approach.

The EPA has developed a spreadsheet tool, the Vapor Intrusion Screening Level Calculator <<http://www.epa.gov/oswer/vaporintrusion/guidance.html#Item6>> , that identifies chemicals considered to be sufficiently volatile and sufficiently toxic through the inhalation pathway; and provides screening

² The California EPA released guidance on vapor intrusion in October 2011 (“Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air-Vapor Intrusion Guidance” Department of Toxic Substances Control, October, 2011).

levels to assess whether chemicals found in ground water can pose a significant risk through vapor intrusion; and, if so, whether a site-specific vapor intrusion investigation is warranted.

At the McCormick and Baxter Site, naphthalene is the only chemical that has the potential to pose a vapor intrusion risk. The most recent data from groundwater monitoring at wells within 100 feet of buildings show naphthalene levels well below the Vapor Intrusion Screening Level (4 ug/L) for groundwater assessment of the vapor intrusion pathway. Wells where concentrations exceed this value are well over 200 feet from any building, and the higher concentration of contamination is more than 100 feet below ground surface. Commercial and residential properties are not at risk.

At this time, given current site conditions, the groundwater data indicate the pathway is incomplete and/or does not pose an unacceptable risk to human health. As part of the groundwater FFS, a soil vapor investigation is planned for the Site to evaluate risk from this pathway under potential future use scenarios.

Toxicity values: EPA’s Integrated Risk Information System (IRIS) has a program to update toxicity values used by the Agency in risk assessment when newer scientific information becomes available. In the past five years, there have been a number of changes to the toxicity values for the Site COCs (table 6).

The risk assessment was reviewed to identify any changes in exposure or toxicity that would impact protectiveness.

Table 6. Toxicity Values

Contaminant of Concern (COC)	Toxicity Values				Change	RSL for Industrial Soil (mg/kg) (corresponds to a 10 ⁻⁶ risk)	ROD Selected Cleanup Level (mg/kg)
	Cancer		Non-Cancer				
	IUR** (1/μg/m ³)	SFo (1/(mg/kg-day))	RfCi**	RfDo (mg/kg-d)			
Carcinogenic PAHs							
Benzo(a)pyrene	OLD: 7.3/(mg/kg-day) NEW: 1.1E-03/μg/m ³				No change	0.21 No change since 1999 ROD	3.6
Non-Carcinogenic PAHs							
Acenaphthene					No change		1100
Anthracene					No change		57
Fluorene					No change		900
Naphthalene					No change	18 No change since 1999 ROD	190
Pyrene					No change		1000
Total PAHs					No change		333 ***(sediment)
Pentachlorophenol (PCP)	OLD: 0.12/(mg/kg-day)[3.4E-5] NEW: 5.1E-06	OLD: 0.12 NEW: 0.40		OLD: 3.0E-02 NEW: 5.0E-03	Cancer: More Stringent Non-Cancer: Less Stringent	2.7 (2010) 1900 (2010)	150

Contaminant of Concern (COC)	Toxicity Values				Change	RSL for Industrial Soil (mg/kg) (corresponds to a 10 ⁻⁶ risk)	ROD Selected Cleanup Level (mg/kg)
	Cancer		Non-Cancer				
	IUR** (1/μg/m ³)	SFo (1/(mg/kg-day))	RfCi**	RfDo (mg/kg-d)			
Dioxin *TEQ	OLD: 1.5E+05 / (mg/kg-day)[4.3E+1] NEW: 3.8E+01	OLD: 1.5E+05 NEW: 1.3E+05		NEW: 7.0E-10	Cancer: Slightly More Stringent Non-Cancer: New	1.8E ⁻⁰⁵ (cancer) 6.0 x10 ⁻⁰⁴ (non cancer)	1.0E ⁻⁰³ (soil) 2.1E ⁻⁰⁵ (sediment)
Inorganics							
Arsenic	OLD: 12 / (mg/kg-day)[3.4E-3] NEW: 4.3E-03	OLD: 1.5 NEW: 1.5			No change	1.6 No change since 1999 ROD	30

Definitions: IUR = Inhalation Unit Risk; SFo = Slope Factor; RfCi = Reference Inhalation; RfDo = Reference Dose Oral.

* The quantitative values were not available from the 1988 HHRA and were supplemented with the 2004 PRG summary tables.

** EPA no longer recommends using inhalation toxicity values that are derived from oral data (i.e., no longer using inhalation slope factors [SF_i] or inhalation reference doses [RfDi]). For comparison with newer IURs (in units of (μg/m³)⁻¹), older inhalation toxicity values are converted to IURs for cancer risks using the following formula: IUR (ug/m³)⁻¹ = [SF_i (mg/kg-day)⁻¹ x 20 m³/day x 0.001 mg/ug]/70 kg. Converted values are shown in brackets “[]” following the original inhalation toxicity value.

*** Dry weight, organic carbon normalized

Benzo(a)pyrene, Naphthalene, and Arsenic: No significant revisions for the toxicity of these substances have been made since the ROD, but the method to assess them has. Units have changed for the standard inhalation risk, and the inhalation reference dose. Though some of the toxicity values have changed slightly in the switch to this method, the ROD selected cleanup levels remain protective, as they still fall within the acceptable excess risk range of 10⁻⁴ to 10⁻⁶ risk, based on current RSLs for industrial soils.

Pentachlorophenol: Revisions to the toxicity value for pentachlorophenol (PCP) indicate a higher risk from exposure than previously considered. The 2010 health hazard assessment decreased the chronic oral exposure RfD from 0.03 mg/kg-day to 0.005mg/kg-day. The ROD selected soil cleanup level of 150 mg/kg still falls within the acceptable cancer risk range with the new RSL of 2.7 mg/kg for 10⁻⁶ risk to 270 mg/kg for 10⁻⁴ risk. In addition, the PCP final residual concentration, at 95% upper confidence level (UCL), of 5.9 mg/kg is at the low end of the risk range.

Dioxin:

In February of 2012, EPA evaluated the non-cancer toxicity value for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and recommended that people consume not more than 0.7 picogram per kilogram of body weight per day on average. When default exposure parameters are applied, this non-cancer toxicity value results in non-cancer soil screening levels of 50 ppt toxicity equivalence (TEQ) for residential settings and 600 ppt TEQ for industrial scenarios. The Remedial Screening Levels based on cancer effects are currently 4.5 ppt for residential and 18 ppt for industrial land uses (EPA, 2013) based on a cancer risk of 1 x 10⁻⁶.

Unique to 2,3,7,8-dioxin is the evaluation of similar chemicals that have dioxin-like effects. The concentrations of these chemicals are multiplied by toxicity equivalence factors (TEFs) to the standard 2,3,7,8-dioxin, summed, and presented as total dioxin TEQs. The original document used the

International 1989 TEFs. Subsequently, these TEFs were reevaluated and adjusted based on more current dose-effect results and mechanisms of action. The most recent dioxin-like TEFs were published by the World Health Organization (WHO) in 2005. The changes in TEFs associated with specific dioxin and furan compounds included both slight increases in the less toxic congeners, as well as slight decreases in the more toxic congeners. The current range for dioxin concentrations in soil considered protective is 0.018 µg/kg up to 0.6 µg/kg. The selected cleanup level in the 1999 ROD for dioxin in soil was 1.0 µg/kg which is outside the current protective range considering the new toxicity information. However, the dioxin final residual concentration, at 95% UCL, is 0.56 µg/kg for the excavated areas.

Ecological Review

The Ecological Risk Assessment concluded that while sediment contamination was greater in Old Mormon Slough than in surrounding areas, biological effects were localized. Some risk to reception species can be attributed to the presence of PAHs and dioxin, and possibly PCP, in surface sediments. In general, metals were not found to be a risk factor to any of the assessment endpoints. The results for PCP were less certain, but PCP was estimated to have a potential impact to both fish and benthic animals. The PAHs posed a risk to all assessment endpoints; threshold limits for PAHs were exceeded principally for fish and benthic fauna. Dioxin had little effect on the assessment endpoints, but was estimated to be a potential low risk to bird and fish reproduction and health.

New Mormon Slough and the Stockton Channel reference location were less contaminated and posed less risk than Old Mormon Slough; however, both were contaminated relative to concentrations at the San Joaquin River reference location. Although it can be reasonable to conclude that the ecological risk to aquatic communities from Old Mormon Slough contamination is attributable to the McCormick and Baxter Site, it is not as clear whether contamination (and risk) in New Mormon Slough and the Stockton Channel are attributable to the McCormick and Baxter Site.

Because Old Mormon Slough is a dead end slough that is not well flushed by river flow or tidal action, the rate of sediment transport out of it is expected to be very low. The estimated rate would tend to result in burying and stabilizing the contamination in place, rather than transporting it outside the Old Mormon Slough to other areas.

6.4. Data Review

6.4.1. Ground Water

As stated earlier, EPA is currently conducting a FFS for the groundwater OU in order to develop the final groundwater remedy. As part of the FFS, EPA is conducting groundwater monitoring.

Water Levels

Groundwater level measurements are collected semi-annually from approximately 100 monitoring wells (Figure 3). Measurements collected between December 2010 and May 2012 revealed that, notwithstanding slight differences in horizontal gradient magnitudes, vertical gradient magnitudes and horizontal and vertical flow directions remained consistent with past results prior to uplands soil capping. This suggests that capping has not altered groundwater flow and that there are no offsite hydraulic influences that could shift contaminant migration. As part of the FFS, the potential impact of infiltration from the stormwater detention basins will be assessed.

Analytic Data

Groundwater sampling for naphthalene, acenaphthene, and pentachlorophenol (PCP) was conducted in April 2009, December 2010, July/December 2011 and May/October 2012. Revisions to the groundwater monitoring program were implemented beginning in December 2010 which included the overall reduction in number of wells sampled from 65 to the 31 shown in Figure 3. Table 7 shows arithmetic mean concentrations at all wells currently sampled since routine sampling began in 1999.

Although PCP contamination of groundwater is mostly restricted to the A-zone of the aquifer, concentrations of this contaminant have decreased generally in all aquifer zones since 2009. PCP concentrations in A-zone wells SW-186A and OFS-4A1, near the leading downgradient edge of the plume, have generally remained below detection levels.

Acenaphthene and naphthalene plumes extend up to several hundred feet off-property in the B-, C-, D- and E-zones. Except in the A-zone, where the extent of the naphthalene and acenaphthene plumes are about the same, acenaphthene has a larger dissolved-phase extent than naphthalene. This is attributable to higher degradation rates for naphthalene.

No significant change in downgradient acenaphthene or naphthalene plume extent in the A-, B-, C-, and D-aquifer zones has been evident over the five years of the review period. EPA has identified the need for additional downgradient monitoring wells in the E-zone to further evaluate the distal concentrations in the E-zone. EPA plans to install the new wells in 2014.

Table 7. Groundwater Analytical Results

Well_ID	Naphthalene (µg/l)		Acenaphthene		PCP	
	May 2012	Hist. Mean	May 2012	Hist. Mean	May 2012	Hist. Mean
A6	0.12	NC	0.038	NC	1500	929
MW1A	17000	17675	340	313	5800	8300
MW11A	0.07 (<1.1)	0.04	<0.054 (<1.1)	NC	<1.1 (<5.3)	NC
OFS4A1	0.027 (0.042)	NC	<0.05 (0.027)	NC	<1.0 (<1.0)	NC
SW162A	<0.05	NC	<0.05	NC	0.7	NC
SW182A	0.04 (<0.05)	NC	<0.05 (<0.05)	NC	65 (35)	508
SW183A	0.11 (<1.0)	NC	<0.05 (<1.0)	NC	<1.0 (<5.0)	NC
SW184A1	0.42 (<1.0)	NC	<0.05 (<1.0)	NC	2.1 (<5.0)	6.4
SW184A2	0.079	0.14	<0.05	NC	<5.0	NC
MW9B	0.34	8.8	100	104	<1.0	NC
MW10B	0.11 (0.1)	2.37	42 (43)	38.4	<1.1 (<1.0)	NC
MW12B	0.079	0.04	0.67	0.67	<1.1	NC
MW13B	390	118	130	76.6	<1.0	18.8
DSW1C	5700	6519	370	324	<1.0	NC
DSW6C	5100	2448	190	135	<1.0	NC
DSW7C	0.22	0.4	140	107	<1.0	NC
MW8C	51	1450	58	187	<1.0	NC
MW15C	0.31	0.82	83	86.6	<1.0	NC
MW16C	0.14	0.5	130	134	<1.0	NC

OFS4C	0.14	0.07	10	4.7	<1.1	NC
ONS1C	8000	10565	360	374	1.4	6.6
DSW4D	4200 (4300)	1164	310 (310)	105	<1.0 (<1.1)	NC
MW17D	0.061	0.14	0.17	0.09	<1.0	NC
MW18D	960	3487	190	226	<1.1	NC
MW19D	1.9	9.4	72	51.4	<1.0	NC
ONS1D	1600	1576	75	56.8	<1.0	NC
MW-2E	2.8 (<1.0)	0.65	0.7 (<1.0)	NC	<5.0 (<5.0)	NC
MW20E	10000	9650	340	309	<1.0	NC
MW21E	6800 (6700)	9300	270 (280)	291	<1.0 (<5.0)	NC
MW23E	4000	3675	57	31.8	<1.2	NC
MW24E	0.19	0.21	0.049	0.15	<1.1	NC

NOTES:

- Not calculated (NC) if majority of results are non-detect.
- Parentheses indicate field duplicate sample results.

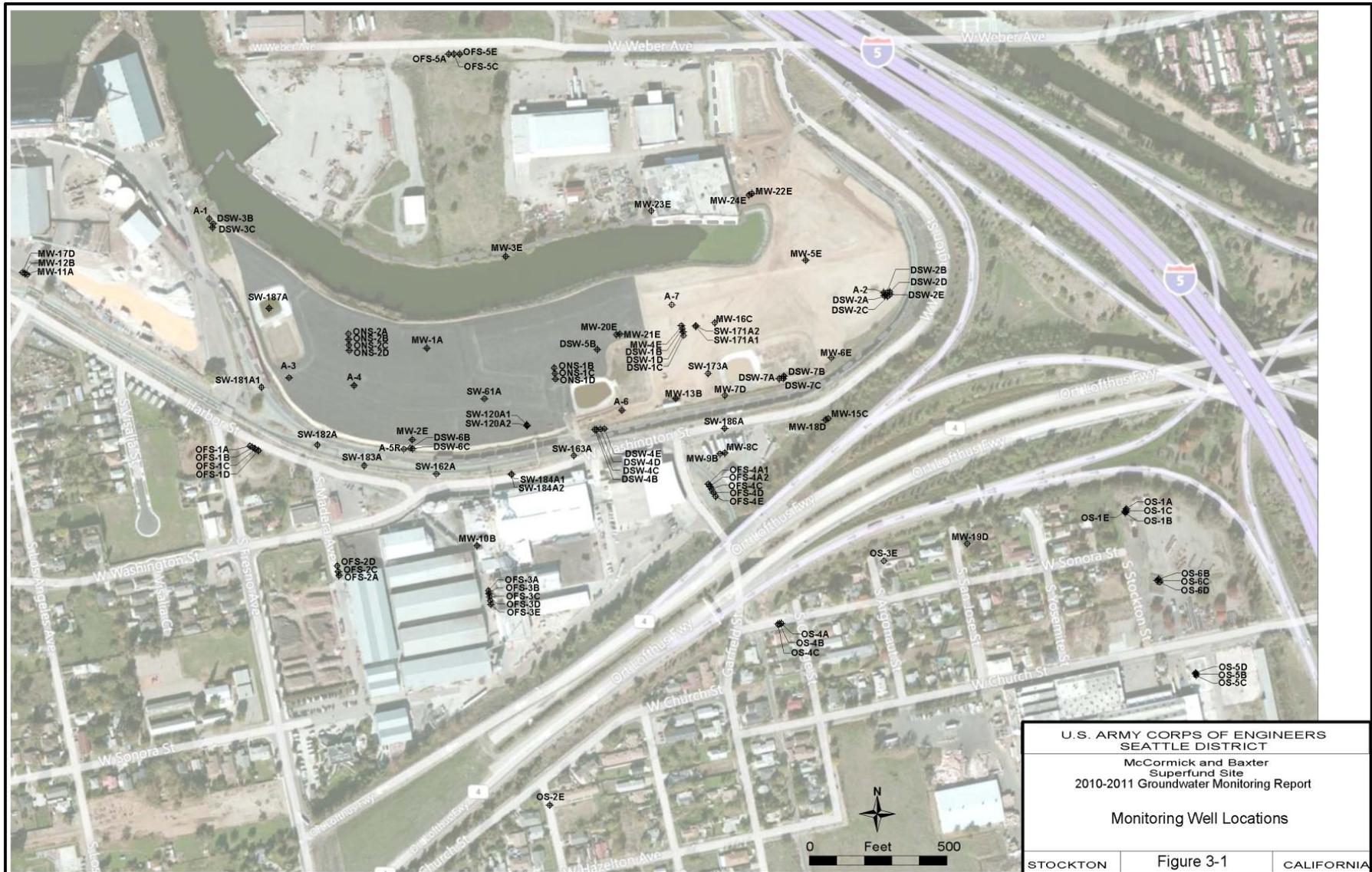


Figure 3. Monitoring well location map.

6.4.2. Soil

To confirm attainment of the cleanup standards for the vadose zone soil remedy, in 2011 ARCADIS, the soil remedy contractor, collected post-excavation confirmation samples. This sampling was conducted in Subarea X following excavation of the top 1 foot of soil, using a 100-foot grid sampling scheme, with additional samples collected at the base (or base and sidewalls) of the deeper hot spot excavations in Subarea X and Subarea Y. Each confirmation-sample result was compared to the cleanup standard. If the contaminant concentration in the confirmation sample was equal to or less than the cleanup standard, the grid area/deeper hot spot area represented by that sample was considered clean. If the concentration in the confirmation-sample exceeded two times the cleanup standard, and in most cases if the confirmation-sample result exceeded the cleanup standard, the grid area/deeper hot spot area was considered dirty and over-excavation was carried out. This approach was more conservative than the decision criteria in the Sampling and Analysis Plan. The latter specify that the cleanup standards are met when the 95% upper confidence limit (UCL) of the mean concentration for the confirmation samples meets or is less than the corresponding cleanup standard for each COC and no sample exceeds the cleanup standard by more than two times.

The final arsenic concentrations (i.e., original passing results and those following over-excavation) ranged from:

- non-detect at 0.97 mg/kg to 59 mg/kg at the final Subarea X grid-based sample location
- 5.2 mg/kg to 41 mg/kg at the final Subarea X deeper hot spots
- 6.3 mg/kg to 9.3 mg/kg at the Subarea Y perimeter samples

The final arsenic concentration, at 95% UCL, of 15.35 mg/kg was well below the 30 mg/kg arsenic cleanup standard.

All of the noncarcinogenic PAHs (acenaphthene, anthracene, fluorene, naphthalene, and pyrene) were detected well below the cleanup standards that ranged from 57 mg/kg to 1100 mg/kg. The final noncarcinogenic PAHs concentrations, at 95% UCL, ranged from 0.030 mg/kg to 0.639 mg/kg.

All PCP concentrations were detected well below the cleanup standard of 150 mg/kg. The final PCP concentration, at 95% UCL, was 5.922 mg/kg.

The final carcinogenic PAHs concentrations (i.e., original passing results and those following over-excavation) ranged from:

- 0.007 mg/kg to 2.28 mg/kg TEQ at the final Subarea X grid samples
- 0.048 mg/kg to 0.534 mg/kg TEQ at the final Subarea X deeper hot spot

The final carcinogenic PAHs concentration, at 95% UCL, of 0.803 mg/kg TEQ was well below the cleanup standards of 3.6 mg/kg TEQ.

The final dioxin concentrations (i.e., original passing results and those following over-excavation) ranged from:

- 0.003 µg /kg to 1.002 µg /kg TEQ at the final Subarea X grid samples,

- 0.091 µg /kg to 0.600 µg /kg TEQ at the final Subarea X deeper hot spots,
- 0.007 µg /kg TEQ at the Subarea Y perimeter sample, and
- 0.0044 µg/kg to 1.300 µg /kg TEQ at the polygon over-excavations.

The dioxin final concentrations, at 95% UCL, of 0.56 µg/kg TEQ for the excavations completed in 2009 and 0.45 µg/kg TEQ for the north polygon excavation completed in 2010 were well below the cleanup standard of 1 µg/kg TEQ and also within EPA protective risk range for dioxin considering the revised toxicity information.

6.4.3. Sediment

The first post-construction chemical sampling of the sediment cap was conducted in August 2010. All 10 cap samples taken during this event had PAH concentrations below the sediment cleanup goal of 333.3 mg/kg (normalized to organic carbon [OC]) intended to protect aquatic life. The highest values (normalized to organic carbon) were obtained using the Kaplan-Meier (KM) nonparametric method to estimate non-detects in the dataset and ranged from 10.30 to 48.66 mg/kg. Toxicity of sediment samples relative to the 21-nanogram (ng) 2,3,7,8-TCDD TEQ/kg cleanup level was evaluated using both fish and mammalian TEFs. All methods of TEF summation confirmed that the data were below the quality criteria for both fish and mammals. The highest calculated values, obtained by setting non-detect values as equal to (for fish) or half (for mammals) the method quantitation limit, ranged from 0.25 to 7.91 and 0.39 to 13.74 ng/kg, respectively. Thus, all results were below the sediment cleanup levels identified in the ROD.

The 2008 post-construction bathymetric survey of the capped area of the Old Mormon Slough identified some lowering of the cap surface relative to its immediate post-construction configuration, probably due to continued compaction of soft underlying sediments. However, this subsidence is not associated with evidence of recontamination of the cap surface. The first post-construction chemical sampling results support self-weight consolidation of the soft underlying sediments as the likely cause of the losses in elevation of the cap.

6.5. Site Inspection

The site inspection for this FYR was done on 18 April, 2013 by Jim Powers, USACE, Sacramento District. Also in attendance were Patricia Bowlin, EPA Region 9, Carlos Acu, USACE, Sacramento District, and Sam Martinez, CalEPA Department of Toxic Substances Control (DTSC).

The inspection included a thorough walk of the site to inspect site condition and ICs in place. It is noted that the UPPR fencing is in poor shape, and a new fence on the eastern boundary of the Site is suggested. Signage is faded, and does not warn of toxic danger at the site. More visible signs, written in both English and Spanish, would increase the understanding of the hazards at the site.

The cap is in good shape and being maintained properly. It has been noted that there are some long cracks parallel with the slough that should be filled with sealant, not just patched over, and it is recommended that a slope stability analysis be performed to assure that these are superficial, and not evidence of a deeper-seated failure plane. In addition, there were cracks that appear to be caused by weed growth. Although many of these crack have been patched, ongoing maintenance efforts to address these cracks is needed.

The grass is not being cut, both causing a fire hazard and obstructing clear view of some well heads. Many well heads have been damaged and need maintenance. It is suggested that they be locked, and marked with bollards.

Nothing was found that affects the protectiveness of the remedy.

The completed Site inspection checklist is included as appendix D.

6.6. Interviews

During the site inspection, interviews were conducted with parties impacted by the Site, including the current site manager and the regulatory agencies involved in Site activities. The purpose of the interviews was to document the perceived status of the Site and any perceived problems or successes with the phases of the remedy that have been implemented to date. The interviews were conducted during the Site visit on April 18, 2013. Other than the inspection observations described above, no unusual situations or problems at the site were noted by interviewees. Complete interview reports are included in the Site Inspection Report in Appendix D.

6.7. Institutional Controls

The selected remedies in the ROD include institutional controls for both the soils OU and the sediment OU. In the ROD, institutional controls include site access controls as well as land use restrictions.

The soils remedy includes Site access controls (fencing and controlled gates). The ROD specifies that institutional controls for Subarea Y would need to be more stringent than for Subarea X, and that fencing, controlled entry gates, and restrictions on excavating to certain depths would not be needed for the Subarea X portion of the Site because no contaminated soil would remain in Subarea X.

The sediment remedy calls for the use of institutional controls to limit navigational access to the slough; provide more warning signs; limit future use of Old Mormon Slough to appropriate uses; and control future dredging of the slough to prevent disturbance of residual sediment contamination in the mouth of the slough.

Fencing was erected around the site, and signage has been posted to warn people not to enter the slough. These measures remain at the site, though ongoing maintenance is required to repair fencing. Some people ignore the signage and barriers and trespass to fish in the Old Mormon Slough. A log boom was installed at the outer end of the slough consisting of several large floating logs chained together to prevent boat traffic from entering and damaging the cap, as well as to exclude people from fishing. The log boom has been prone to breaking and even when intact has not completely prevented boat traffic in the slough. As a result, the log boom was replaced with a Whisper Wave Small Craft Intrusion Barrier in August 2013. In addition, EPA requested that the United States Coast Guard establish the capped area of the Old Mormon Slough as a Safety Zone. On July 17, the Federal Register published the U.S. Coast Guard's proposed rulemaking establishing a Safety Zone in the capped area of the Old Mormon Slough. The Safety Zone prohibits all vessels or persons that are not associated with EPA from entering or transiting the slough. The proposed rule has a 30-day comment period that ends on August 16. The Safety Zone will not be final until the Final Rule is published later this year.

In addition, a land use covenant for the Union Pacific Railroad parcel has been developed and recorded with San Joaquin County (Instrument No. 2007-217-413, recorded December 31, 2007) by Department of Toxic Substances Control to limit use of the site, protect the integrity of the remedial systems, and provide control over future grading and groundwater use on the Site. The covenant includes, but is not limited to, restricting the end use of the Site to appropriate industrial uses (and prohibiting other uses); and proprietary and/or governmental land use restrictions such as prohibiting, limiting, or controlling conditions of excavation of any impacted soil during future construction, providing appropriate notice (in land records and otherwise) that hazardous wastes remain at the Site, and prohibiting other activities that could cause a potential threat to human health and the environment.

Parcel ownership at the Site remains the same as previous, with McCormick and Baxter Creosoting Co owning Parcels # 145-20-001, 145-20-014, 145-19-010, and 145-19-011. Union Pacific Railroad (UPRR) owns parcel # 145-20-010. See Appendix E for Environmental Covenant information for Parcel # 145-20-010.

The following table lists the ICs and Environmental Covenants associated with areas of interest at the Site.

Table 8. IC Summary Table

Media	ICs Called for in the Decision Documents	Impacted areas	IC Objective	Notes
Soil	Yes	Parcel # 145-20-010	Environmental and Land Use Covenant (Instrument No. 2007-217-413, recorded December 31, 2007)	Owned by Union Pacific RR
		Parcel# 145-20-001, 145-20-014, 145-19-010, and 145-19-011	No Covenant in place (draft LUC)	Owned by McCormick and Baxter
		Subarea Y	Site access control, providing appropriate notices of hazardous waste	Implemented and functioning to protect human health and the environment
		Subarea X	Site access control, providing appropriate notices of hazardous waste	Implemented and functioning to protect human health and the environment
Surface Water-Sediment	Yes	Old Mormon Slough	Limit navigational access, provide warning signs, limit future use, control dredging to prevent disturbance	Implemented and functioning to protect human health and the environment

Media	ICs Called for in the Decision Documents	Impacted areas	IC Objective	Notes
Ground Water	No decision document	NA	NA	NA

7. Technical Assessment

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

The review of site data, documents, ARARs, risk assumptions and the results of the site inspection indicates that the remedies are functioning as intended by the ROD, as modified by the ESD.

Remedial Action Performance

Both the soils OU and surface water-sediment OU remedies are performing as intended by the ROD and as amended by the ESD. The soil excavation and relocation was successful in removing contaminated soil from Subarea X. Data from Subarea X show contamination well below selected cleanup levels. After contaminated soils were placed in Subarea Y, the consolidated waste in the placement area was capped and successfully contained, thus reducing the risk to human health and the environment.

The sediments in the Old Mormon Slough were successfully contained with a sand cap, and the cap remains effective. Data from the slough sediments show contamination well below selected cleanup levels thus reducing the risk to human health and the environment.

System Operations/O&M

Operating procedures, as implemented, will maintain the effectiveness of the remedies. Large variances in O&M costs are not anticipated at this time.

Implementation of Institutional Controls and Other Measures

Although the site access controls (fencing and signage) need to be continually maintained, the protectiveness of the remedies is not affected.

The Environmental Land Use Covenant recorded December 31, 2007 is still in place for the part of the Site owned by Union Pacific Railroad. However, the rest of the Site owned by McCormick and Baxter has not recorded Environmental Land Use Covenant, as required by the ROD.

7.2. Question B: Are the exposure assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) Used at the Time of Remedy Selection Still Valid?

Changes in Standards and TBCs

All cleanup levels selected in the ROD were based on risk assessment toxicity evaluations. The TBCs used to identify clean up levels in the sediments and soils have not substantially changed. Toxicity values that have been updated do not affect the protectiveness of the selected cleanup standards.

Changes in Exposure Pathways

The site has a fenced asphalt cap, remains industrial in use, and will remain so in the future.

No additional human health routes of exposure were observed. The exposure pathways identified in the ROD for soil ingestion, soil particulate inhalation, and soil dermal contact are still valid assumptions. Under current site conditions, the vapor intrusion pathway is considered incomplete due to the absence of a contaminant that is both sufficiently toxic and volatile and present in high enough concentrations in areas where buildings are present. As part of the groundwater FFS, a soil vapor investigation is planned for the Site to evaluate risk from this pathway under potential future use scenarios.

No new contaminants have been identified.

Changes in Toxicity and Other Contaminant Characteristics

Toxicity values for PCP and dioxin have changed since the last FYR. These changes do not affect the protectiveness of the remedy. While the RSLs for PCP are stricter than before, they are still within the protective excess lifetime cancer risk range. As of the most current (2011) soil data, total PAHs and arsenic were well below ROD selected cleanup levels. The change in toxicity for dioxin indicates that the selected clean up level in 1999 ROD is not protective; however, the concentrations of dioxin in soil remaining after removal are at levels well below the cleanup standard and within the range that EPA considers protective considering the new toxicity information. The most current sediment data (2010) confirm that sediments are not contaminated with COCs above protective sediment cleanup levels identified in the ROD.

Changes in Risk Assessment Methods

Since the 1997 HHRA, EPA's methodology for assessing risk from vapor intrusion has undergone significant revisions. As previously discussed, the change in vapor intrusion risk assessment methodology does not affect protectiveness because the vapor intrusion pathway is considered incomplete and/or does not pose an unacceptable risk to human health.

There have been no other changes in the standard risk assessment methods used to support the ROD.

Expected Progress Toward Meeting RAOs

The remedy is progressing as expected. Construction is now complete on the two OUs with selected remedies.

7.3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

No additional information has come to light that could call into question the protectiveness of the remedy.

7.4. Technical Assessment Summary

The implemented remedies at the Site are functioning as intended in the ROD and ESD. Ongoing maintenance activities assure protectiveness of the remedies. The recent changes in the toxicity values of PCP and dioxin do not affect the protectiveness of the selected cleanup standards, and no changes or new exposure pathways threaten protectiveness. RAOs have been met in the OUs that have decision documents, and no additional information has come to light that could call into question the protectiveness of the remedy.

8. Issues

There is one issue identified during this Five year review.

Table 9. Current Issues for the McCormick and Baxter Site

Issue	Affects Current Protectiveness (Yes or No)	Affects Future Protectiveness (Yes or No)
The Environmental Land Use Covenant has not been recorded on the McCormick and Baxter property	No	Yes

9. Recommendations and Follow-up Actions

The following recommendations would improve effectiveness of remedy and improve management of O&M, but do not affect current protectiveness. These are recommended follow-up actions to non-critical issues identified during the Five-Year Review:

- Keep the asphalt cap maintained by repairing cracks
- Perform a slope stability analysis to determine if the long cracks in the asphalt cap are evidence of slope failure
- Keep fencing repaired, and routinely check for signs of damage or vandalism
- Replace warning signs when damaged or illegible
- Continue progress toward the goal of developing a final remedy for the groundwater OU

10. Protectiveness Statements

The remedy for the surface water-sediment OU is protective of human health and the environment. All exposure pathways have been controlled through the implementation of institutional controls.

The remedy for the soils OU is currently protective of human health and the environment. All exposure pathways have been eliminated or controlled through the installation of an asphalt cap, and partial implementation of institutional controls. In order to be protective in the long-term, the land use covenant needs to be recorded for the McCormick and Baxter property.

The implemented remedies for the McCormick and Baxter Superfund site are protective of human health and the environment because all exposure pathways have been eliminated or controlled. In order to be protective in the long-term, the institutional control needs to be recorded for the McCormick and Baxter property.

11. Next Review

This is a statutory Site that requires ongoing FYRs as long as waste is left on site that does not allow for unlimited use and unrestricted exposure. The next FYR will be due within five years of the signature date of this FYR.

Appendix A: List of Documents Reviewed

- ARCADIS. 2012a. *Soil Remedy Draft Remedial Action Report, McCormick and Baxter Superfund Site, Stockton, California*. March 30.
- ARCADIS. 2012b. *Soil Remedy Final Draft Operations and Maintenance Manual, McCormick and Baxter Superfund Site, Stockton, California*. January 5.
- ICF Kaiser Engineers, Inc. (ICF). 1999. *Soils and Groundwater Feasibility Study Report, McCormick and Baxter Superfund Site, Stockton, CA*. April 1999. Prepared for USEPA.
- ICF. 1998. *Soils and Groundwater Remedial Investigation Report, McCormick and Baxter Superfund Site*. July 1998. Prepared for USEPA.
- ICF. 1997. *Final Human Health Risk Assessment for the McCormick and Baxter Superfund Site, Stockton, CA*. November 1997. Prepared for USEPA.
- Montgomery Watson Harza (MWH). 2007. *Final Project Completion Report, Phase II – Sediment Remedial Action, McCormick and Baxter Superfund Site*. April 2007. Prepared for USACE.
- MWH. 2003. *Project Quality Control Summary Report, Phase 1- Bank Stabilization, McCormick and Baxter Superfund Site*. April 2003. Prepared for USACE.
- National Research Council. 2006. *Health Risks from Dioxin and Related Compounds. Evaluation of the EPA Reassessment*. National Academies Press. <http://www.epa.gov/ncea/pdfs/dioxin/nas-review>
- U.S. Army Corps of Engineers (USACE), 2011. *Biological Studies Technical Memorandum, Groundwater OU, McCormick and Baxter Superfund Site, Stockton, CA*. Prepared for USEPA by USACE, Seattle District and Huntsville Center's Environmental and Munitions Center of Expertise, 22 April 2011, revised 5 October 2011.
- USACE. 2011. *First Post-Construction Sediment Monitoring Report McCormick and Baxter Superfund Site, Operable Unit 2 Stockton, California*. April 4, 2011. Prepared for USEPA.
- USACE. 2008a. *Transmittal of Hydrological Survey Information for Old Mormon Slough Cap, McCormick and Baxter Superfund Site*. November 17, 2008. Prepared for USEPA.
- USACE. 2008b. *Final Groundwater Remedy Focused Feasibility Study Management Plan, McCormick and Baxter Superfund Site, Stockton, CA*. September 2008. Prepared for USEPA.
- USACE. 2007b. *Final Groundwater Remedy Focused Feasibility Study. Risk Assessment Technical Memorandum, McCormick and Baxter Superfund Site, Stockton, CA*. Prepared for USEPA.
- USACE. 2006. *Operation and Maintenance Plan for Surface Water-Sediment Operable Unit, McCormick and Baxter Superfund Site, Stockton, CA*. January 2006 (revised). Prepared for USEPA.
- USACE. 2002. *Soils and Groundwater Focused Feasibility Study Report, McCormick and Baxter Superfund Site, Stockton, California. Agency Review Draft*. Prepared for USEPA.

- USACE. 2001. *Final Design Analysis Report, McCormick and Baxter Superfund Site Surface Water Operable Unit Sediment Cap*. December 2001. Prepared for USEPA.
- U.S. Environmental Protection Agency (USEPA). 2013. *Regional Screening Levels (Formerly PRGs)*. <http://www.epa.gov/region9/superfund/prg/>. May 2013.
- USEPA. 2013. *OSWER Final Guidance for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Sources to Indoor Air (External Review Draft)*. April 2013.
- USEPA. 2012. *EPA's Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments, Volume 1, In Support of Summary Information on the Integrated Risk Information System (IRIS)*
- USEPA. 2010. *TOXICOLOGICAL REVIEW OF PENTACHLOROPHENOL Summary Information on the Integrated Risk Information System (IRIS)*
- USEPA. 2008. *First Five-Year Review Report for McCormick and Baxter Superfund Site, City of Stockton, San Joaquin County, California*. September 10, 2008.
- USEPA. 2005. *Explanation of Significant Difference, McCormick and Baxter Superfund Site, Stockton, CA*. September 27, 2005.
- USEPA. 2003. *Exposure and Human Health Reassessment of 2,3,7,8-Tetraachlorodibenzo-p- Dioxin (TCDD) and Related Compounds, NAS Review Draft*. EPA/600/P-00/001Cb .
- USEPA. 2002. *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. November, 2002. EPA530-D-05-004.
- USEPA. 2002. *Fact Sheet: EPA Begins Cleanup Action for Sediment Contamination, McCormick and Baxter Superfund Site*. October 2002.
- USEPA. 2001. *Comprehensive Five-Year Review Guidance*. June 2001. EPA 540-R-01-007
- USEPA. 2000. *Fact Sheet: EPA Continues Remedial Design for Soil, Groundwater and Sediment Contamination, McCormick and Baxter Superfund Site*. May 2000.
- USEPA. 1999. *Record of Decision, McCormick and Baxter Superfund Site, Stockton, CA*. March 31, 1999.
- World Health Organization (WHO). 2005. *Re-evaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds*. ToxSci Advance Access published online July 7, 2006. http://www.who.int/ipcs/assessment/tef_update/en/

Appendix B: Press Notices

safety, remarkable recovery and made to get them ready for the rebuilding efforts have been summer tourist season.



U.S. EPA CONDUCTS SECOND REVIEW OF CLEANUP AT McCORMICK & BAXTER SUPERFUND SITE

The United States Environmental Protection Agency (EPA) is conducting a second Five-Year Review of the cleanup of the McCormick & Baxter Superfund Site (Site) in Stockton, California. The review will cover the surface water and sediment remedy and the soil remedy at the Site. According to the Superfund law, if a cleanup takes more than five years to complete or hazardous wastes remain on the Site, the cleanup will be reviewed every five years. The last Five-Year Review, conducted in 2008, reviewed the implemented surface water and sediment remedy and determined that the remedy was protective of human health and the environment.

The purpose of this second Five-Year Review is to determine whether the surface water and sediment remedy continues to be protective and whether the recently constructed soil remedy is protective.

EPA invites the community to learn more about this process and welcomes your involvement. Information about the Site and its history is available at EPA's web site: <http://www.epa.gov/region09/McCormick&Baxter>. An information repository that contains the Site's Administrative Records, project reports, documents, fact sheets and other reference material is located in the Cesar Chavez Central Library at 605 N. El Dorado Street, Stockton, California 95202, (209) 937-8221, and also in EPA's Superfund Records Center at 95 Hawthorne Street, 4th floor, San Francisco, California 94105, (415) 820-4700. You may also contact Vicki Rosen, Community Involvement Coordinator, at (415) 972-3244 or rosen.vicki@epa.gov or Patricia Bowlin, Remedial Project Manager, at (415) 972-3177 or bowlin.patricia@epa.gov to provide or obtain additional information. Upon completion of this review (September 2013), a public notice announcing the completion will appear in a local newspaper and a copy of the final report will be available for public review online and at the information repositories.

CNS#2486221

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Appendix C: Site Inspection Checklist

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

IV. O&M COSTS																																																			
1.	O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> PRP in-house <input type="checkbox"/> Federal Facility in-house <input checked="" type="checkbox"/> Other <u>USACE</u>	<input type="checkbox"/> Contractor for State <input type="checkbox"/> Contractor for PRP <input type="checkbox"/> Contractor for Federal Facility																																																	
2.	O&M Cost Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place Original O&M cost estimate _____ <input type="checkbox"/> Breakdown attached Total annual cost by year for review period if available <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">From _____</td> <td style="width: 15%;">To _____</td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3" style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3" style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3" style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> <tr> <td>From _____</td> <td>To _____</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Date</td> <td style="text-align: center;">Date</td> <td style="text-align: center;">Total cost</td> <td colspan="3" style="text-align: right;"><input type="checkbox"/> Breakdown attached</td> </tr> </table>			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached			From _____	To _____					Date	Date	Total cost	<input type="checkbox"/> Breakdown attached		
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Date	Date	Total cost	<input type="checkbox"/> Breakdown attached																																																
3.	Unanticipated or Unusually High O&M Costs During Review Period Describe costs and reasons: _____ _____ _____ _____																																																		
V. ACCESS AND INSTITUTIONAL CONTROLS <input type="checkbox"/> Applicable <input type="checkbox"/> N/A																																																			
A. Fencing																																																			
1.	Fencing damaged <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Gates secured <input type="checkbox"/> N/A Remarks <u>UPRR fence in bad shape, suggest</u> <u>a new fence on eastern boundary of CFP</u>																																																		
B. Other Access Restrictions																																																			
1.	Signs and other security measures <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A Remarks <u>suggest multi-lingual signage</u>																																																		

C. Institutional Controls (ICs)			
1. Implementation and enforcement			
Site conditions imply ICs are properly implemented	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Site conditions imply ICs are being fully enforced	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Type of monitoring (e.g., self-reporting, drive by)	site inspection		
Frequency	annual		
Responsible party/agency	UPRR		
Contact	Name	Title	Date
Scott Davis	PE, PM-UPRR		4/22/13
			510-701-5424
Reporting is up-to-date	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Reports are verified by the lead agency	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Specific requirements in deed or decision documents have been met	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Violations have been reported	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Other problems or suggestions:	G Report attached		
2. Adequacy			
Remarks	<input checked="" type="radio"/> ICs are adequate	<input type="radio"/> ICs are inadequate	<input type="radio"/> N/A
D. General			
1. Vandalism/trespassing			
Remarks	<input type="radio"/> Location shown on site map	<input type="radio"/> No vandalism evident	
fence is being repaired on M&B (EPA) site but not on UPRR property			
2. Land use changes on site			
Remarks	<input checked="" type="radio"/> N/A		
3. Land use changes off site			
Remarks	<input type="radio"/> N/A		
cold storage facility being torn down. new fence needed			
VI. GENERAL SITE CONDITIONS			
A. Roads			
Remarks	<input checked="" type="radio"/> Applicable	<input type="radio"/> N/A	
1. Roads damaged			
Remarks	<input type="radio"/> Location shown on site map	<input checked="" type="radio"/> Roads adequate	<input type="radio"/> N/A
railroad crossing could be re-rated for safety			

no fishing
no swimming
no boating

Site Inspection Checklist - 5

B. Other Site Conditions			
Remarks _____ _____ _____ _____			
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Remarks <u>very minor settlement on south side causing bulges + radial cracking</u>	G Location shown on site map _____ Depth _____	<input checked="" type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks <u>long cracks developing; a seam on top are parting, need sealant to fill them</u>	G Location shown on site map _____	<input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Remarks _____	G Location shown on site map _____ Depth _____	<input checked="" type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Remarks _____	G Location shown on site map _____ Depth _____	<input checked="" type="checkbox"/> Holes not evident
5.	Vegetative Cover G Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	G Grass _____ G Cover properly established _____	G No signs of stress <u>NA</u>
6.	Alternative Cover (armored rock, concrete, etc.) Remarks <u>asphalt cap, the center is in excellent condition</u>	G N/A	
7.	Bulges Areal extent _____ Remarks <u>minor bulges probably due to differential settlement, being repaired roll tirdy</u>	G Location shown on site map _____ Height <u>1/2"</u>	<input type="checkbox"/> Bulges not evident

8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map	Areal extent _____ Areal extent _____ Areal extent _____ Areal extent _____
9.	Slope Instability Areal extent _____ Remarks _____	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of slope instability	<input type="checkbox"/> No evidence of slope instability
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
2.	Bench Breached Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
3.	Bench Overtopped Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
C. Letdown Channels <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of settlement
2.	Material Degradation Material type _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Areal extent _____	<input checked="" type="checkbox"/> No evidence of degradation
3.	Erosion Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of erosion

4.	Undercutting	G Location shown on site map	<input checked="" type="checkbox"/> G No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input checked="" type="checkbox"/> G No obstructions
	G Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type <u>weeds</u>	
	G No evidence of excessive growth		
	G Vegetation in channels does not obstruct flow		
	G Location shown on site map	Areal extent _____	
	Remarks <u>UPRR property needs cutting for fire prevention</u> <u>grass fires part evident</u>		
D. Cover Penetrations <input checked="" type="checkbox"/> G Applicable <input type="checkbox"/> G N/A			
1.	Gas Vents	<input checked="" type="checkbox"/> G Active <input type="checkbox"/> G Passive	
	G Properly secured/locked	G Functioning	G Routinely sampled <input type="checkbox"/> G Good condition
	G Evidence of leakage at penetration		G Needs Maintenance
	Remarks <input checked="" type="checkbox"/> G N/A		
2.	Gas Monitoring Probes	<input type="checkbox"/> G Properly secured/locked	<input type="checkbox"/> G Functioning <input type="checkbox"/> G Routinely sampled <input type="checkbox"/> G Good condition
	G Evidence of leakage at penetration		G Needs Maintenance <input checked="" type="checkbox"/> G N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)		
	<input checked="" type="checkbox"/> G Properly secured/locked	<input checked="" type="checkbox"/> G Functioning	<input checked="" type="checkbox"/> G Routinely sampled <input checked="" type="checkbox"/> G Good condition
	G Evidence of leakage at penetration		G Needs Maintenance <input type="checkbox"/> G N/A
	Remarks _____		
4.	Leachate Extraction Wells		
	G Properly secured/locked	G Functioning	G Routinely sampled <input type="checkbox"/> G Good condition
	G Evidence of leakage at penetration		G Needs Maintenance <input checked="" type="checkbox"/> G N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> G Located	<input type="checkbox"/> G Routinely surveyed <input checked="" type="checkbox"/> G N/A
	Remarks _____		

E. Gas Collection and Treatment		G Applicable	<u>G N/A</u>
1.	Gas Treatment Facilities G Flaring G Thermal destruction G Collection for reuse G Good condition G Needs Maintenance Remarks _____		<u>NA</u>
2.	Gas Collection Wells, Manifolds and Piping G Good condition G Needs Maintenance Remarks _____		<u>NA</u>
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) G Good condition G Needs Maintenance Remarks _____		<u>G N/A</u>
F. Cover Drainage Layer		G Applicable	<u>G N/A</u>
1.	Outlet Pipes Inspected Remarks _____	G Functioning	<u>G N/A</u>
2.	Outlet Rock Inspected Remarks _____	G Functioning	<u>G N/A</u>
G. Detention/Sedimentation Ponds		<u>G Applicable</u>	G N/A
1.	Siltation Areal extent _____ Depth _____ G Siltation not evident Remarks <u>north east pond has siltation problem</u>		G N/A
2.	Erosion Areal extent _____ Depth _____ <u>G Erosion not evident</u> Remarks _____		
3.	Outlet Works Remarks _____	<u>G Functioning</u>	G N/A
4.	Dam Remarks _____	G Functioning	<u>G N/A</u>

H. Retaining Walls		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks	sheet piling in Mormon Slough	
2.	Degradation	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Degradation not evident
	Remarks _____		
I. Perimeter Ditches/Off-Site Discharge		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent _____	Depth _____	
	Remarks	ditches need to be swept	
2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks	some weed growth in perimeter ditches	
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		
4.	Discharge Structure	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks _____		
VIII. VERTICAL BARRIER WALLS		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Performance Monitoring	Type of monitoring _____	
	<input type="checkbox"/> Performance not monitored		
	Frequency _____	<input type="checkbox"/> Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES		G Applicable	G N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines		G Applicable	G N/A
1.	Pumps, Wellhead Plumbing, and Electrical G Good condition G All required wells properly operating G Needs Maintenance G N/A Remarks _____		
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances G Good condition G Needs Maintenance Remarks <u>NA</u>		
3.	Spare Parts and Equipment G Readily available G Good condition G Requires upgrade G Needs to be provided Remarks _____		
B. Surface Water Collection Structures, Pumps, and Pipelines		G Applicable	G N/A
1.	Collection Structures, Pumps, and Electrical G Good condition G Needs Maintenance Remarks _____		
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances G Good condition G Needs Maintenance Remarks _____		
3.	Spare Parts and Equipment G Readily available G Good condition G Requires upgrade G Needs to be provided Remarks _____		

C. Treatment System	G Applicable	G N/A
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1.	Treatment Train (Check components that apply) <i>NA</i> <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____
2.	Electrical Enclosures and Panels (properly rated and functional) <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	Tanks, Vaults, Storage Vessels <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____
4.	Discharge Structure and Appurtenances <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
5.	Treatment Building(s) <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input checked="" type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks <i>replace locking caps and protect with bollards</i>
D. Monitoring Data	
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining <i>NA</i>

Groundwater OU remedy not yet implemented

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy)		
	G Properly secured/locked	G Functioning	G Routinely sampled
	G All required wells located	G Needs Maintenance	G Good condition
	Remarks _____		(G 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.).			
<p><i>the soil remedy prevents exposure and stops moisture infiltration/percolation and is functioning as designed. Better engineered controls (signage, eastern fence) might assist the sediment oil remedy by controlling unauthorized access,</i></p>			
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.			
<p><i>The MTB property is being actively maintained. Cracks are filled and the fence is repaired as it is damaged. The UPRR property at the east end of the site is not being maintained adequately for access control.</i></p>			

C. Early Indicators of Potential Remedy Problems
<p>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.</p> <p>monitoring wells need new locking cap + bolts Signage (bilingual) needed UPRR fence condition is an issue old storage demolition is an issue railroad crossing is dangerous longitudinal cracks should be filled with sealant and inspected by a geotechnical engineer</p>
D. Opportunities for Optimization
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Appendix D: Site Inspection Report and Photographs

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SITE INSPECTION REPORT

MCCORMICK & BAXTER SUPERFUND SITE, STOCKTON, CA
(EPA ID: CAD009106527)

I. INTRODUCTION/SITE INFORMATION:

USEPA Region 9 is the lead agency for conducting the five-year review. The Seattle District, US Army Corps of Engineers (USACE) is assisting EPA with this review. USEPA Region 9 is the lead agency for remediation of the site, with California EPA/Department of Toxic Substances Control (Cal EPA/DTSC) acting as the support agency.

The McCormick and Baxter Superfund site is located at 1214 West Washington Street in Stockton (San Joaquin County), California. The site occupies approximately 32 acres in a predominantly industrial area near the Port of Stockton and the junction of Interstate 5 and State Highway 4. The northern boundary of the site is formed by Old Mormon Slough, which connects to the Stockton Deepwater Channel on the San Joaquin River. Other site boundaries include Washington Street to the south, Interstate 5 to the east, and an industrial facility located at the Port of Stockton Turning Basin to the west (see Figure 1). An eight-acre parcel in the southeastern portion of the site is owned by the Union Pacific Railroad (UPRR). The site is secured by a combination of older chain link and barbed wire fence attached to wood posts, and newer galvanized steel chain link fence topped with barbed wire. The McCormick and Baxter Creosoting Company operated from 1942 until 1991. Various wood preservation processes were used at the site during its operational history. The treated wood products were used primarily by power utilities, railroads, and the construction industry. Preservatives included creosote, pentachlorophenol (PCP), arsenic, copper, chromium (chromated copper arsenate), and zinc. Solvents or carriers for these preservatives included petroleum-based fuels, such as kerosene and diesel, butane, and ether.

The site has been divided into three operable units (OU): 1) upland soil 2) groundwater, and 3) sediment and surface water in Old Mormon Slough. Remedial investigations and feasibility studies have been previously prepared for the operable units, with the selection of remedies documented in the site's Record of Decision (USEPA 1999a). The surface water and sediment OU remedy was completed in 2002 and the soil OU remedy was completed in 2011. The groundwater OU has not yet been selected. US EPA Region 9 began groundwater investigations at the McCormick and Baxter Site after the site was listed on the National Priorities List (NPL) in 1992. Groundwater OU sampling events have been conducted on site by USACE for USEPA. Annual and/or semiannual dissolved-phase groundwater monitoring continues to provide critical information to address groundwater data gaps.

On April 18 2013, James Powers (Sacramento District, USACE) conducted a formal five-year review site inspection to be included in the Five-Year Review Report. US EPA Region 9 Remedial Project Manager, Patricia Bowlin, and Sam Martinez of California Department of Toxic Substances Control participated in the site inspection. The purpose of the site inspection was to record site and vicinity observations, deficiencies, and other issues, then conduct interviews with individuals familiar with the site. The site inspection included: Old Mormon Slough and near-shore conditions as well as the sheet pile wall and downstream log boom; site surface conditions in preparation for the soil remedy including the previously placed asphalt cap; on-site surface water

collection system; and access controls. The weather was clear and warm (approximately 75° F) with a light breeze during the site inspections. In compliance with five-year review guidance, this report follows the site inspection checklist format.

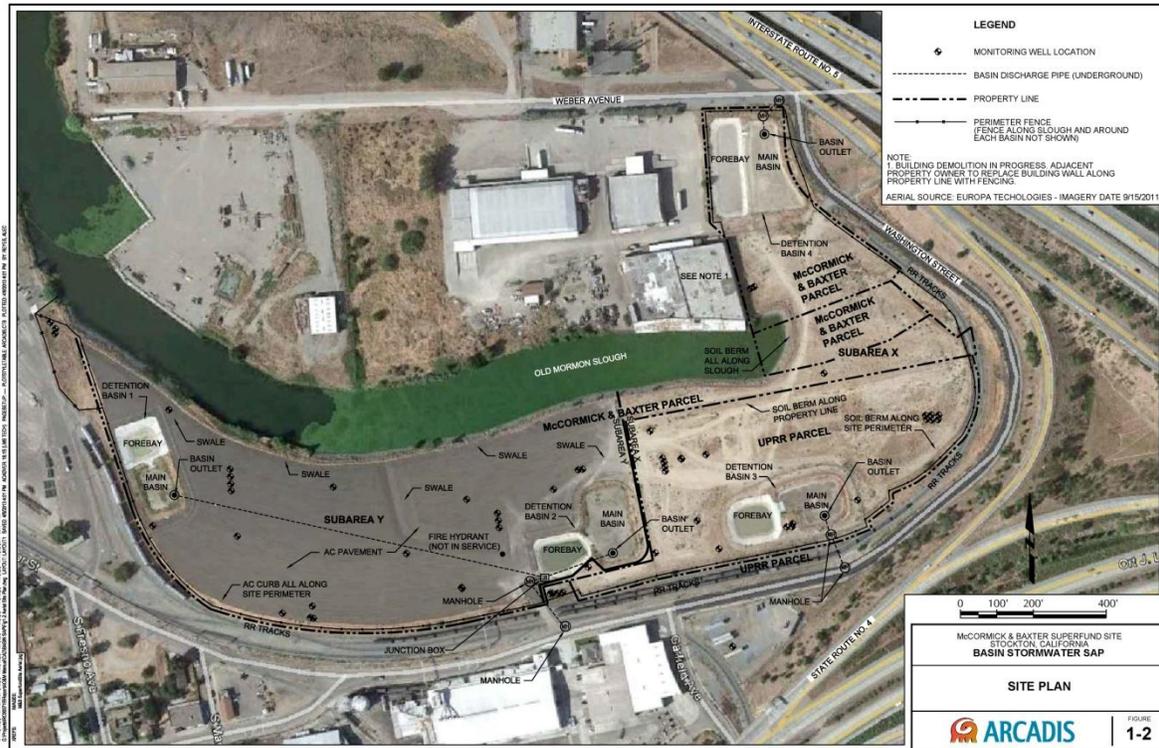


Figure 1: McCormick & Baxter Superfund Site Aerial Photograph

II. INTERVIEWS:

1) Scott Davis, O&M Site Manager, Arcadis

Scott Davis provided the information about the O&M Costs (Section IV). He does not think that UPRR is responsible for maintaining the weeds or the perimeter fence anywhere along the railroad tracks, even on their own parcel.

2) Sam Martinez, DTSC

James Powers interviewed Sam Martinez on April 18 2013 during the site inspection. Mr. Martinez was generally unsatisfied with the Operations & Maintenance at the site. He is concerned about the poor condition of the fence on the eastern side of the site along the railroad tracks and where the cold storage building is being demolished, the fire hazard from the overgrown weeds east of the asphalt cap and the use of the UPRR property as a disposal site for discarded spray paint cans used to tag railroad cars. He is concerned about abating the nuisance material that blows onto the asphalt cap from the west. He is anxious to see the log boom replaced in Old Mormon Slough. He noted the hazard warning sign were faded and in need of replacement

III. ON-SITE DOCUMENTS AND RECORDS:

There are no permanent structures remaining on-site. Documents are kept by USACE and Arcadis and brought to the site as needed while groundwater monitoring and O&M tasks are being performed.

IV: O&M COSTS:

Please refer to section 4.3.

V. ACCESS AND INSTITUTIONAL CONTROLS:

The site is secured by a combination of older chain link and barbed wire fence attached to wooden posts along the railroad tracks and newer galvanized steel chain link fence topped with barbed wire around the four detention basins, the asphalt cap, and M&B sub-area X around Mormon Slough. Six locked gates are also situated at points around the perimeter of the site fence to permit vehicle access, but are normally not used except for the main access gate. One locked personnel access gate is situated north of the asphalt cap along the slough shoreline security fence. During the site inspection, the padlock on the westernmost gate was observed to have been cut, probably with bolt cutters. A number of damaged or cut fence locations were observed in the perimeter security fencing. These had been repaired around the asphalt cap (M&B Subarea Y), but had not been repaired by the railroad tracks along the UPRR property or M&B subarea X. The cold storage building on the north bank of Old Mormon Slough is being demolished. The perimeter security fencing had been attached to the building. New fencing will need to be erected on the parcel boundary where the cold storage building formerly stood.

VI. GENERAL SITE CONDITIONS:

James Powers, Patricia Bowlin, Carlos Acu and Sam Martinez conducted the site inspection on April 18 2013. The inspection began at the temporary office trailer used by the groundwater monitoring crew located at the center of the site then following the perimeter fence clockwise from Detention Basin #2.

Considerable change has occurred since the last Five Year Review. The entire Subarea Y of the McCormick & Baxter property is now capped by asphalt. All structures and debris have been removed. Four detention basins for storm water management have been installed.

Detention basin #2 and its enclosure fence are in good repair. The original design of the sediment filter has been modified to reduce clogging. The main entrance to the site crosses several tracks in a railroad siding. When railroad cars are parked on the tracks, there is no visibility for a driver when crossing the tracks which is a safety concern. Perhaps the access road could be relocated, or mirrors installed at the crossing.

The south side of the asphalt cap is prone to small bulges with radial cracks that are being patched as they occur. The perimeter fencing is adequate.

The west side of the perimeter fence is new. Trespassers have damaged it in places and temporary repairs have been made. New hazard warning signage might reduce the incursions. West of the site is a large stockpile of bone meal that is being blown by the wind onto the asphalt cap creating a nuisance.

Detention basin #1 is in good condition but the main basin may require some control of vegetation if it is more than what is needed as a sediment trap.

The log boom is missing from the Old Mormon Slough northwest of the site. It was not properly designed to accommodate changing river stage and tide. EPA is installing a new log boom.

Exceptionally long cracks parallel to the edge of the asphalt cap by the sheet piles may be a concern if they indicate potential slope failure rather than normal expansion and contraction. Due to the possible risk presented by the steep slope down to the slough and underlying saturated soil, a geotechnical evaluation of slope stability at this location is recommended.

The sheet pile and rip rap are in place and in good condition. Trees are beginning to grow on the banks. Eventually they may present a problem for the sediment cap. Tree removal is recommended before the trees grow larger.

The cold storage building on the north side of the slough is being torn down. Since the building was used as part of the perimeter security, a new section of fence will need to be erected at this location.

Detention Basin #4 main basin has accumulated fine sediment in the basin, and it should be removed.

The railroad fence on the eastern side of the site is in poor condition, with unrepaired holes cut in the fence, missing, burned and rotting wooden posts, and “no trespassing” signs rather than hazard warning signs. Eventual repair or replacement of this fence on the M&B Subarea X parcel is suggested. A new fence along the southern boundary of the parcel to separate it from the UPRR parcel may be a solution to the unmaintained condition of the fence along the tracks on the UPRR property.

VII. LANDFILL COVERS:

The asphalt cap covering M&B Subarea Y is not a landfill cover and is discussed in the other sections of this site inspection report.

VIII. VERTICAL BARRIER WALLS:

The steel sheet pile wall located along the south shoreline of Old Mormon Slough appeared to be in good condition. A small Washington Palm is growing behind the sheet pile. This type of palm can grow quite large; it should be removed while it is still small. The palm could eventually damage the wall if allowed to grow.

IX. GROUNDWATER/SURFACE WATER REMEDIES:

There is currently no selected groundwater remedy.

Surface water runoff is actively collected on the property, as part of the surface water and sediment OU. Four storm water detention basins are in place on the site to transfer water at a controlled rate to the storm sewer system. Sediment filters have been modified since the original installation.

X: OTHER REMEDIES: Not applicable at this time.

XI. OVERALL OBSERVATIONS:

The soil OU and the surface water and sediment OU are complete. The main deficiency is the failure of the log boom, which will be replaced with a new boom that adapts better to changes in river stage and tide. Navigational controls are still being arranged with the US Coast Guard by US EPA. M&B Subarea Y is entirely capped by asphalt and surrounded by a perimeter fence which is being maintained. Due to the poor condition of the fence on the UPRR property, consideration should be given to placing a gated fence on the eastern edge of the asphalt cap at the parcel boundary between Mormon Slough and Detention Basin #2 as an extra measure of protection. The detention basins are generally in good condition but the Detention Basin #4 main basin is about due for a cleanout.

Cracks in the asphalt cap are being repaired, but the lengthy cracks parallel to the edge of the cap should be examined by a geotechnical engineer as a precaution for evidence of developing slope failure.

The perimeter fencing is being vandalized and penetrated by trespassers. Site management is spending O&M funds for fence repair. It is recommended that an attempt be made to reduce the incursions by posting new multi-lingual warning signs that clarify the potential dangers.

Stockpiled bone meal is being blown by the wind onto the asphalt cap from the adjacent Port of Stockton property. Consider contacting the San Joaquin Valley Air Pollution Control District to see if they can enforce a nuisance abatement enforcement order.

Weed growth and tumbleweed accumulation on the UPRR parcel is excessive and may present a fire hazard to the asphalt cap on the M&B property and other properties (including Interstate 5) if it is not kept clear. This should be reported to the Stockton fire marshal.

A groundwater remedy has not been selected at this time; therefore no comment can be made to groundwater remedy effectiveness and functionality. A general observation is that several of the monitoring wells on the UPRR and M&B Subarea X parcels have broken locking well caps. As part of O&M, the well seals should be replaced with locking seals, or the well caps should be replaced, and the wells should be protected from future damage with concrete aprons and bollards.

Seattle District, USACE will incorporate the information collected during the site inspection into the second Five-Year Review report.

James C. Powers, PG, CEG, CHg
Environmental Engineer

CESPK-ED-EE

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Photographs from Site Inspection Visit

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Photo 1: Fence surrounding detention basin #2. The facility is in excellent condition but note the long crack in the asphalt cap parallel to the basin. This type of cracking may be a geotechnical concern



Photo 2: Access gate to detention basin #2 with flood hazard warning sign



Photo 3: Cracking in detention basin #2 forebay is being repaired with a sealant



Photo 4: View of soil OU asphalt cap looking west



Photo 5: Shallow radial cracking in bulge in the asphalt cap, probably due to differential soil settlement over rocks, bricks, or other debris.



Photo 6: Radial cracking is being patched.



Photo 7: The log boom for the sediment OU remedy in Mormon Slough is missing (replacement is planned).



Photo 8: The material stockpile on the adjacent property is blown by the wind onto the site creating a nuisance. The San Joaquin Valley Air Pollution Control District might be able to do some sort of nuisance abatement enforcement order.



Photo 9: Detention Basin #4



Photo 10: The main basin of Detention Basin #4 may be due for cleanout of accumulated fine sediment.



Photo 11: Trespasser damage to perimeter fence in M&B subarea Y has a temporary repair.



Photo 12: The demolition of the cold storage building north of the slough has created a gap in the perimeter security fence in M&B Subarea X next to detention basin #4.



Photo 13: Forebay of Detention Basin #1



Photo 14: Main Basin of Detention Basin #1



Photo 15: Lengthy cracking parallel to slope along the edge of asphalt cap should be examined by geotechnical engineer for slope stability



Photo 16: Sheet pile wall and stone rip-rap, sediment OU. Consider removing the Washington (fan) Palm behind the sheet pile before it grows larger



Photo 17: White monitoring well cap stickups visible near top of photo are vulnerable to vehicles and should be changed to flush mount or protected with bollards.



Photo 18: Signs are old and faded and sometimes face the wrong way. Recommend replacement with new bilingual warning signs.



Photo 19: This crack is not sealed properly; the crack should be completely filled with sealant. Or perhaps the crack is actively widening?



Photo 20: The perimeter fence around the UPRR property and along the railroad tracks on M&B Subarea X is in very poor condition and is not being maintained. Tumbleweed (Russian thistle) accumulation on the fence is a fire hazard and precludes inspection of the perimeter soil berm.

Appendix E: Real Estate Title Review Package



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

MAY 31 2013

Real Estate Division
Realty Services Branch

Kathleen Salyer, Assistant Director
Superfund Division
California Site Cleanup Branch
U.S. Environmental Protection Agency Region IX
75 Hawthorne Street
San Francisco, 94105

Dear Ms. Salyer:

Enclosed for your records is the Real Estate title review package pertaining to the title exceptions review of the McCormick and Baxter Superfund Site in the City of Stockton, California.

The Title Review Assembly contains the following:

- 1) Title review report, denoting the exceptions and possible impacts to the McCormick and Baxter Site
- 2) Map identifying the parcel and its location
- 3) Preliminary Title Report from Chicago Title Insurance Company
- 4) Copies of all the applicable exception documents noted within the Title Report.

If you have any questions regarding this matter, please contact the undersigned at 206-316-4419, or by email at diane.jordan@usace.army.mil.

Sincerely,

Diane B. Jordan
Realty Specialist

Enclosures

cc: Dianne Wilson, USACE Project Manager

REVIEW OF TITLE EXCEPTIONS
McCORMICK AND BAXTER SITE

This is a title review of a single tax parcel of land in the City of Stockton, California (San Joaquin County) in support of the McCormick and Baxter Superfund Site project. The tax parcel involved in this review is currently owned by Union Pacific Railroad Company (successor by merger to Southern Pacific Company), and is as follows:

- APN 145-200-010

Review performed May 21, 2013

Title Exception Number	Owner	Recording Information	Instrument Type and Rights Granted	Impact to Covenant to Restrict Use of Property, Environmental Restriction, recorded December 31, 2007
1 - 3	Union Pacific Railroad Company	Not Applicable	General and special taxes and assessments	None
4-5	Louise Boggs, et.al	Book A of Deeds, Vol. 161, Page 363, recorded February 6, 1908	Easement reserved for railroad crossing.	No Impact
6	Southern Pacific Railroad	Instrument No. 16894, Book 887, Page 227, recorded September 1, 1944	Easement granted to Sunset Timber Preserving Company for the right to construct, reconstruct, maintain and use a roadway.	Construction and maintenance of a roadway creates a potential risk for exposure to contaminated soil and groundwater.
7	Sunset Timber Preserving Company	Instrument No. 1511, Book 953, Page 422, recorded January 16, 1946.	Special Warranty Deed whereby the Owner (Sunset Timber) conveyed its property located in Sect 9, T1N, R6E to McCormick and Baxter Creosoting Co.	No Impact

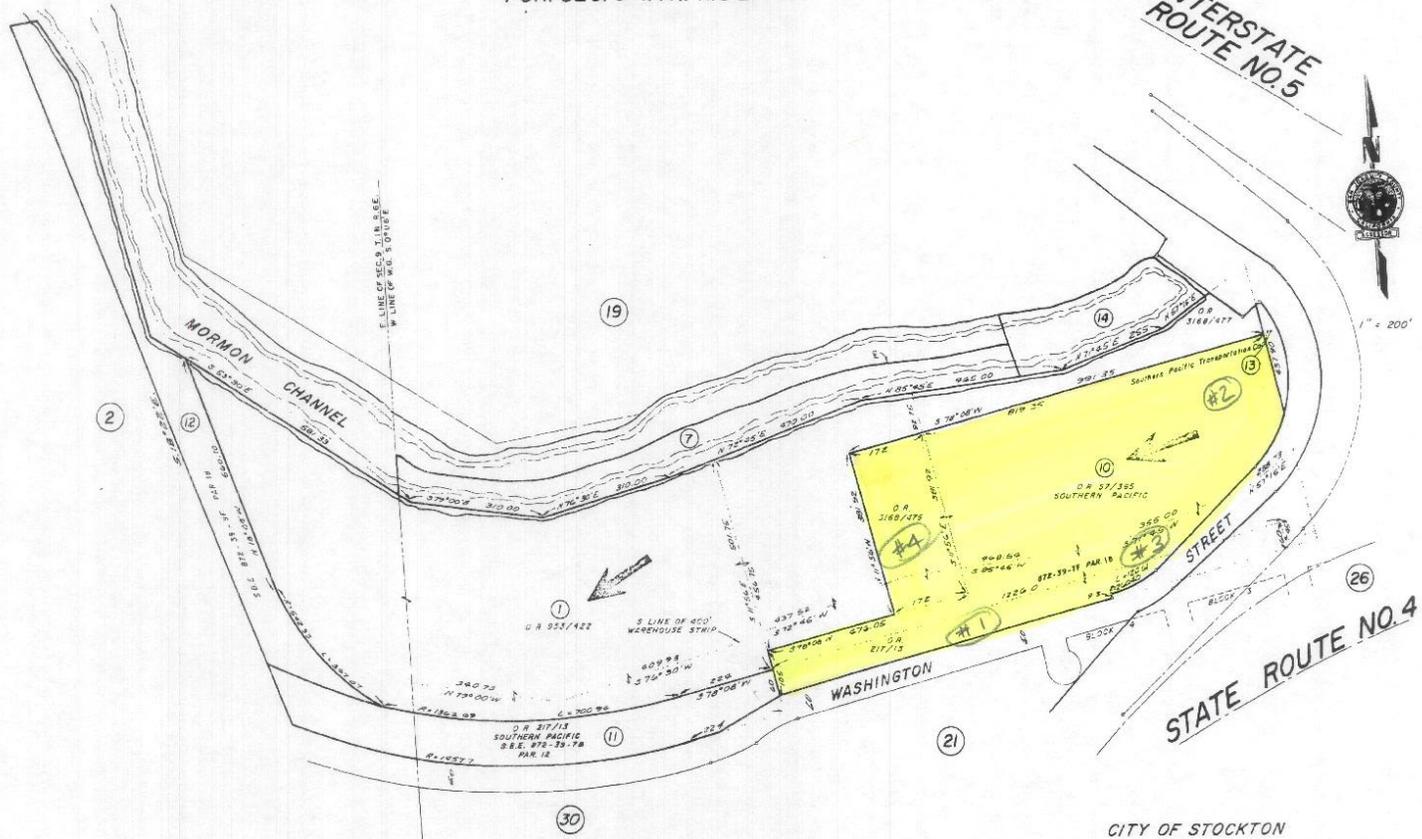
Title Exception Number	Owner	Recording Information	Instrument Type and Rights Granted	Impact to Covenant to Restrict Use of Property, Environmental Restriction, recorded December 31, 2007
8	Southern Pacific Transportation Company	Instrument No. 11075, Book 3962, Page 216, recorded March 14, 1975	Grant Deed to the State of California relinquishing access rights of Owner's property to or from the highway, or freeway abutting said property.	No Impact.
9	Union Pacific Railroad Company	Instrument No. 2001-110158, recorded July 12, 2001	Port Industrial Redevelopment Plan includes Owner's property.	No Impact – this is a zoning and land use regulation.
10-11	Union Pacific Railroad Company	Instrument No. 2007-217435, recorded December 31, 2007	Covenant and Agreement to Restrict Use of Certain Property. This Covenant limits the future use of the Property to industrial/commercial uses only. This Covenant also specifically restricts any activities that would preclude disruption of the remedial actions and to limit potential exposure to hazardous substances identified in groundwater beneath the Property.	This is the referenced covenant.



POR. SEC. 8 & B WEBER GRANT
POR. SEC. 9 T.1N. R.6 E.

THIS MAP FOR
ASSESSMENT USE ONLY

145-20
INTERSTATE
ROUTE NO.5



NOTE - Assessor's Parcel Numbers Shown in Circles

CITY OF STOCKTON
Assessor's Map Bk. 145 - Pg. 20



Chicago Title Insurance Company

CACTI7739-7739-4532-0053222952-CTIC-2013-OP-20

DUPLICATE ORIGINAL CONDITION OF TITLE REPORT

Chicago Title Insurance Company, a Nebraska corporation,
herein called the Company,

SUBJECT TO THE TERMS, LIMITATIONS AND CONDITIONS OF THE APPLICATION FOR THIS CONDITION OF TITLE REPORT, WHICH APPLICATION, OR COPY THEREOF, IS ATTACHED HERETO AND MADE A PART HEREOF

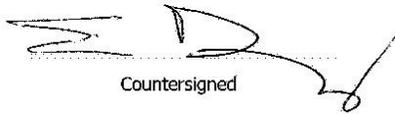
REPORTS

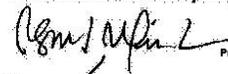
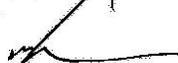
To the party named in Schedule A, that as disclosed by the Title Instruments, the ownership of and the defects, liens and encumbrances against the Interest in the Land are as shown in Schedule B.

Any claim or other notice to the Company shall be in writing and shall be addressed to the Company at the issuing office or to:

*Chicago Title Insurance Company
P.O. Box 45023
Jacksonville, FL 32232-5023
Attn: Claims Department*

THIS REPORT IS NOT VALID AND THE COMPANY SHALL HAVE NO LIABILITY HEREUNDER UNLESS THE APPLICATION REFERRED TO ABOVE, OR COPY THEREOF, IS ATTACHED HERETO.


Countersigned

Chicago Title Insurance Company
BY  President
ATTEST  Secretary

Condition of Title Report

CONDITION OF TITLE REPORT

SCHEDULE A

Fee: \$500.00
Liability: \$5,000.00
Date of Report: April 30, 2013, 07:30 A.M.

1. Name of Party:
U.S. Army Corps. of Engineers, Seattle District.
2. The Interest referred to in the Application is:
A Fee
3. The Land referred to in the Application is described as follows:
See Exhibit "A" attached hereto and made a part hereof.

EXHIBIT "A"

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF STOCKTON, COUNTY OF SAN JOAQUIN, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

A portion of Sections eight (8) and "B" of C. M. Weber's Grant, El Rancho del Campo de los Franceses, described as follows:

Parcel One:

Commencing at a point in the Westerly boundary line of the City of Stockton, said point being the intersection of the Northerly line of Washington Street, produced Westerly, with said Westerly boundary of the City of Stockton; thence 60 feet Northerly, along said Westerly boundary line, to a point; thence Easterly 1226 feet, parallel with and 60 feet distant Northerly, from the Northerly line of Washington Street, produced Westerly to a point; thence Southerly, 60 feet at right angles, to a point in the Northerly line of Washington Street, produced Westerly; thence Westerly 1226 feet, along said Northerly line of Washington Street, produced Westerly, to the point of beginning.

Excepting therefrom that portion thereof, conveyed to the State of California, by Grant Deed, recorded March 14, 1975, as Instrument No. 11075, Book 3962, Page 216, San Joaquin County Records.

Parcel Two:

Commencing at the intersection of the Northerly right of way line of the Southern Pacific Company's property with the Westerly City Limits of the City of Stockton, said point of commencement bearing North 11°56' West 90.30 feet from an iron pin at the intersection of the center line of Washington Street with the Westerly line of Southern Pacific Company's property, North 78°08' East, parallel to the North line of Washington Street, and distant 60 feet, at right angles therefrom, a distance of 1226 feet; thence South 11°56' East, 45 feet; thence North 78°08' East, 69.40 feet to the Westerly line of property of Andrew McCormick; thence along said Easterly line of property of Andrew McCormick, North 11°56' West, 204.50 feet to the Southerly line of strip of land 400 feet wide, described in Deed from Frank A. West and Birne T. West, his wife, to West-Wilhoit Company, a Corporation, dated October 24, 1908 and recorded in Book A of Deeds, Vol. 173, Page 398; thence along the Southerly line of said 400 foot strip, as follows: South 57°15' West, 137.56 feet; South 71°45' West, 355.00 feet; South 85°45' West, 468.54 feet; South 72°45' West, 437.62 feet; South 76°30' West, 409.93 feet; North 79°00' West, 340.73 feet to the Westerly line of C. M. Weber's Grant, El Rancho del Campo de los Franceses; thence along the Westerly line of said C. M. Weber's Grant, South 00°06' East, 74.63 feet to the Northerly right of way line of Southern Pacific's Railroad; thence along said right of way line, on a gradual curve to the left, having a radius of 1362.69 feet, a distance of 622.45 feet, to point of curve; thence along tangent to a curve, North 78°08' East, 224.00 feet to the place of beginning.

Except Therefrom that portion conveyed in Deed to Sunset Timber Preserving Company, a Corporation, recorded September 1, 1944, in Vol. 890 of Official Records, Page 476.

Also Except Therefrom that portion conveyed in Deed to Sunset Timber Preserving Company, a Corporation, recorded January 11, 1945, in Vol. 907 of Official Records, Page 366.

Also Except Therefrom that portion thereof, conveyed to the State of California, by Grant Deed, recorded March 14, 1975, as Instrument No. 11075, Book 3962, Page 216, San Joaquin County Records.

Parcel Three:

Commencing at a point formed by the intersection of the Westerly City Limit line of the City of Stockton, with the South line of a certain strip of land, 400 feet wide, described in Deed, from Frank A. West and Birne T. West, his wife, to West-Wilhoit Company, a Corporation, dated October 24, 1908 and recorded in Book A of Deeds, Vol. 173, Page 398, said point of commencement bearing North 11°56' West, 190.45 feet from an iron pin at the intersection of the center line of Washington Street with the Westerly City Limits of the City of Stockton; run thence along the Southerly line of the said 400 foot strip of land, as follows:

North 72° 45' East, 351.17 feet; North 85°45' East, 468.54 feet; North 71°45' East, 355.00 feet; North 57°15' East, 137.56 feet to the Westerly line of property of Andrew McCormick; thence along said Westerly line of property of Andrew McCormick, North 11°56' West, 427.8 feet to the Northerly line of the above mentioned 400 foot strip; thence along said Northerly line as follows:

South 57°15' West, 238.73 feet; South 71°45' West, 255.00 feet; South 85°45' West, 465 feet; South 72°45' West, 470 feet; South 76°30' West, 310 feet; North 79°00' West, 310 feet; North 53°30' West, 27.34 feet to the Westerly boundary of C. M. Weber's Grant, El Rancho del Campo de los Franceses; thence along the said Westerly boundary of C. M. Weber's Grant, South 00°06' East, 419.49 feet to the said Southerly line of above mentioned 400 foot strip; thence along said Southerly line, as follows:

South 79°00' East, 340.73 feet; North 76°30' East, 409.93 feet; North 72°45' East, 86.35 feet to the place of beginning.

Except Therefrom that portion conveyed in Deed to Sunset Timber Preserving Company, a Corporation, recorded September 1, 1944, in Vol. 890 of Official Records, Page 476.

Also Except Therefrom that portion conveyed in Deed to Sunset Timber Preserving Company, a Corporation, recorded January 11, 1945, in Vol. 907 of Official Records, Page 366.

Also Except Therefrom that portion thereof conveyed in Deed to McCormick & Baxter Creosoting Company, recorded November 24, 1967, as Instrument No. 47400, Book 3168, Page 477, San Joaquin County Records.

Also Except Therefrom that portion thereof, conveyed to the State of California, by Grant Deed, recorded March 14, 1975, as Instrument No. 11075, Book 3962, Page 216, San Joaquin County Records.

Parcel Four:

Commencing at the Northeasterly corner of the land described third in Indenture dated August 7, 1923, from Union Securities Corporation to Southern Pacific Company, recorded January 7, 1925, in Book 57, Page 365, Official Records of said County; thence South 11°56'00" East, along the Easterly line of said land described third, 160.37 feet; thence South 78°08'00" West, parallel with the Northerly line of Washington Street, 819.35 feet to the Actual Point of Beginning of the parcel of land to be described; thence South 11°56'00" East, parallel with said Easterly line, and the Southerly prolongation thereof, 381.92 feet; thence South 78°08'00" West, parallel with the Northerly line of Washington Street, 172.00 feet; thence North 11°56'00" West, parallel with said prolongation and Easterly line, 381.92 feet; thence North 78°08'00" East, parallel with the Northerly line of Washington Street, 172.00 feet to the actual point of beginning.

APN: 145-200-010

CONDITION OF TITLE REPORT

SCHEDULE B

Chicago Title Insurance Company reports that Title Instruments, on the date hereof, disclose:

1. Ownership of the Interest is in the name of:
Union Pacific Railroad Company, successor by merger to Southern Pacific Company.
2. Real estate taxes:
 1. The herein described property is not presently assessed for tax purposes, due to the fact that the vestee herein is an exempt body; however, if said property is conveyed to a non-exempt entity, said property may be assessed for taxes for the remainder of the fiscal year.
 2. **Taxes and assessments** levied by the Reclamation No. 404 District.
 3. **Taxes and assessments** levied by the Sacramento-San Joaquin Drainage District.
3. The following defects, liens and encumbrances (which are not necessarily shown in their order of priority) against the Interest:
 3. **Rights and easements** for navigation and fishery which may exist over that portion of said land lying beneath the waters of Mormon Slough.
 4. **Easement(s)** for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by:	Louise E. Boggs, et.al.
Purpose:	The right of road opening
Recorded:	February 6, 1908, Book A of Deeds, Vol. 161, Page 363, of Official Records
Affects:	Parcel One.
 5. **Covenants, conditions and restrictions**, but omitting any covenants or restrictions, if any, including, but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth in the document referred to in the numbered item last above shown.

- 6. Easement(s)** for the purpose(s) shown below and rights incidental thereto as granted in a document.

Granted to: Sunset Timber Preserving Company
 Purpose: Roadway
 Recorded: September 1, 1944, Instrument No. 16894, Book 887, Page 227, of Official Records
 Affects: Parcel Two and other property.

- 7. Covenants, conditions and restrictions** in the declaration of restrictions but omitting any covenants or restrictions, if any, including, but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law.

Recorded: January 16, 1946, Instrument No. 1511, Book 953, Page 422, of Official Records

- 8. The fact** that the ownership of said land does not include rights of access to or from the street, highway, or freeway abutting said land, such rights having been relinquished by the document,

Recorded: March 14, 1975, Instrument No. 11075, Book 3962, Page 216, of Official Records
 Affects: Parcels One, Two and Three, as described therein.

- 9. The fact** that said land is included within a project area of the Redevelopment Agency shown below, and that proceedings for the redevelopment of said project have been instituted under the Redevelopment Law (such redevelopment to proceed only after the adoption of the redevelopment plan) as disclosed by a document.

Redevelopment Agency: Port Industrial Redevelopment Project.
 Recorded: July 12, 2001, Instrument No. 2001-110158, of Official Records

- 10. Matters** contained in that certain document entitled "Covenant to Restrict Use of Property" dated October 18, 2007, executed by and between Union Pacific Railroad Company and The Department of Toxic Substances Control recorded December 31, 2007, Instrument No. 2007-217435, of Official Records.

Reference is hereby made to said document for full particulars.

- 11. Covenants, conditions and restrictions**, but omitting any covenants or restrictions, if any, including, but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth in the document referred to in the numbered item last above shown.

4. The following matters are disclosed by name only and the Company, without additional information, is unable to determine whether any or all of these matters are defects, liens or encumbrances against the Interest:

None

47400

For a valuable consideration, receipt of which is hereby acknowledged, SOUTHERN PACIFIC COMPANY, a corporation, hereinafter referred to as "Grantor", hereby grants to MCCORMICK & BAXTER CREOSOTING COMPANY, a corporation, hereinafter referred to as "Grantee", the following described real property in the City of Stockton, County of San Joaquin, State of California:

Beginning at the northeasterly corner of the land described third in Indenture dated August 7, 1923, from Union Securities Corporation to Southern Pacific Company, recorded January 7, 1925, in Book 57, at Page 365, Official Records of said County; thence South 11°58'00" East, along the easterly line of said land described third, 160.37 feet; thence South 78°08'00" West, parallel with the northerly line of Washington Street, 819.35 feet; thence North 11°58'00" West, parallel with said easterly line, 92.75 feet to the northerly line of said land described third; thence along said northerly line, the following three courses: (1) North 85°45'00" East 345.84 feet; (2) North 71°45'00" East 255.00 feet; and (3) North 57°15'00" East, 238.73 feet to the point of beginning, containing an area of 1.508 acres, more or less.

Subject to easements, covenants, conditions, reservations and restrictions of record.

IN WITNESS WHEREOF, Grantor has caused these presents to be executed this 10th day of October, 1967.

SOUTHERN PACIFIC COMPANY

By [Signature] (Title) VICE PRESIDENT

Attest [Signature] Assistant Secretary

Mail Tax Statements To:

MCCORMICK & BAXTER CREOSOTING COMPANY Name P. O. BOX 1728, STOCKTON, CALIFORNIA Address 95211 Zip Code

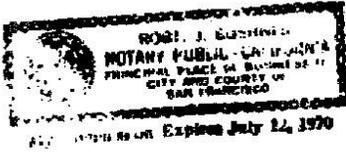
3168 477

STATE OF CALIFORNIA,
City and County of San Francisco

47400

On this 12th day of October in the year One Thousand Nine Hundred and Sixty Seven
before me, ROBT. J. BUSHNER, a Notary Public in and for the City and County of San Francisco, State of California, personally appeared
(65 Market St.)

L. E. Hoyt and T. F. Ryan, known to me to be the Vice President and Assistant Secretary, respectively, of the corporation described in and that executed the within instrument, and also known to me to be the person who executed it on behalf of the corporation therein named and they acknowledged to me that such corporation executed the same.



IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the City and County of San Francisco, the day and year in this certificate first above written.

Robert J. Bushner
Notary Public in and for the City and County of San Francisco, State of California.

Corporation

My Commission Expires July 22, 1970

Form Approved:

D. J. Keefe
Attorney

APPROVED AS TO CORPORATE OWNERS

A. J. Johnston
FOR VALUATION OF ESTATE

47400	atys min. past 3 P.M.	NOV 24 1967
Recorded at request of FELL INSURANCE AND TRUST CO.		
Official Records Of	3168	page 477 San Joaquin County
Fees \$	3.80	GEORGE H. CHAPMAN, County Recorder

3168 page 478

END OF DOCUMENT