



Second Periodic Review

Sparks and Buttercup Subdivision
12th Avenue and Eastern Street
Spokane, Washington 99212

Facility Site ID#: 695
Cleanup Site ID#: 1140

Prepared by:
Washington State Department of Ecology
Eastern Region Office
Toxics Cleanup Program

May 2014

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1.0 Introduction

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup site conditions and monitoring data to assure human health and the environment are being protected at the Sparks and Buttercup Subdivision site (Site). Cleanup at this Site was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). This is the second periodic review conducted for this Site. The first periodic review was completed in October 2008. This periodic review will evaluate the period from November 2008 through January 2014.

Cleanup activities at this Site were completed under the Independent Remedial Action Program. The cleanup actions resulted in residual concentrations of total petroleum hydrocarbons (TPH), pesticides, and metals in soil that exceed MTCA Method A cleanup levels established under WAC 173-340-740(2). As a result of residual contamination, institutional controls were required for the Site to be eligible for a no further action (NFA) determination. WAC 173-340-420(2) requires Ecology conduct a periodic review of a site every five years under the following conditions:

1. Whenever Ecology conducts a cleanup action.
2. Whenever Ecology approves a cleanup action under an order, agreed order or consent decree.
3. Or, as resources permit, whenever Ecology issues a no further action opinion.
4. And one of the following conditions exists:
 - (a) Institutional controls or financial assurance are required as part of the cleanup.
 - (b) Where the cleanup level is based on a practical quantitation limit.
 - (c) Where, in Ecology's judgment, modifications to the default equations or assumptions using site-specific information would significantly increase the concentration of hazardous substances remaining at the site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

When evaluating whether human health and the environment are being protected, the factors Ecology shall consider include [WAC 173-340-420(4)]:

- (a) The effectiveness of ongoing or completed cleanup actions.
- (b) New scientific information for individual hazardous substances or mixtures present at the Site.
- (c) New applicable state and federal laws for hazardous substances present at the Site.
- (d) Current and projected Site use.
- (e) Availability and practicability of higher preference technologies.
- (f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 Summary of Site Conditions

2.1 Site History

The Sparks and Buttercup Subdivision is located in the City of Spokane in Spokane County, Washington. The Site is bounded by a thin layer of forest on all sides, followed by single family residential properties. A vicinity map is available as Appendix 6.1 and a Site plan is available as Appendix 6.2.

A landfill reportedly operated at the Site from as early as 1928 until approximately 1960. The landfill reportedly received domestic refuse, construction debris, scrap metal and other types of debris. No permits were issued for the operation of the landfill. No other activities are known to have taken place at the Site before or after landfill activities. The Site remains undeveloped.

2.2 Site Investigations and Remedial Actions

A Phase II Environmental Site Assessment was conducted at the Site in 1991. Samples were collected from eight test pits and three soil borings which were advanced to a maximum depth of 15 feet below ground surface (bgs). TPH, 4,4 Dichloro-Diphenyl-Trichloroethane (DDT), antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, and zinc were all detected in soil at concentrations exceeding MTCA Method A cleanup levels.

In 1992, Kleinfelder conducted a subsurface investigation specifically to address the presence of contamination in groundwater at the Site. Groundwater was encountered between 56 and 121 feet bgs in three monitoring wells which were installed at the Site. Arsenic, chromium, and lead were detected in soil samples collected between 24 and 29 feet during the installation of these wells. Kleinfelder proposed that these concentrations represent background levels that occur naturally in soils within the Spokane Valley. DDT, lead, arsenic, and chromium were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from two of the monitoring wells. Again, Kleinfelder proposed that these concentrations were representative of background concentrations in the area and were not impacts caused by the landfill.

A landfill gas survey was also conducted at the Site at this time. Six landfill gas probes were installed in and around the landfill and sampled over a two day period. These samples did not detect appreciable levels of combustible gas in either the landfill or in near-surface soils surrounding the landfill.

2.3 Cleanup Levels and Points of Compliance

WAC 173-340-704 states that MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where

numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used.

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for this Site. The cleanup actions conducted at the Site were determined to be 'routine', few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance.

A summary of Site cleanup levels for key contaminants of concern can be found in the table below:

Analyte	1991 MTCA Soil Cleanup Level (ppm)	2001 MTCA Method A Soil Cleanup Level (ppm)	1991 MTCA Method A Groundwater Cleanup level (ppb)	2001 MTCA Method A Groundwater Cleanup Level (ppb)
Arsenic	20	20	5	5
Chromium	100	19	50	50
DDT	1	3	0.1	0.3
Lead	250	250	5	15

2.3.1 Ground Water Point of Compliance

For groundwater, the point of compliance is the point or points where the groundwater cleanup levels must be attained for a Site to be in compliance with the cleanup standards. The groundwater standard point of compliance is established throughout the Site from the uppermost levels of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the Site.

2.3.2 Soil Point of Compliance

For soil, the point of compliance is the area where the soil cleanup levels shall be attained. For soil cleanup levels based on the protection of groundwater, as they are for this Site, the point of compliance is established as soils throughout the Site.

2.4 Remedial activities

The remedial action for the Site consisted of encapsulating the landfill with one foot of imported soil covered by a 40 mil polyvinyl chloride (PVC) liner. The PVC liner was then covered with 1.5 to 2 feet of topsoil. The surface of the landfill cap was revegetated with grass.

A groundwater compliance monitoring program was started in 1993 to assure the protection of groundwater at the Site.

In 1995, the following additional work was conducted at the Site:

1. Two additional groundwater monitoring wells were installed downgradient (north) of the landfill boundary and monitored quarterly for TPH, pesticides, Polychlorinated Biphenyls (PCBs), arsenic, chromium and lead.
2. Gas vapor monitoring was conducted again at six locations around the perimeter of the Site to determine if any landfill gas was being emitted from the Site.

Sample results from the two years of groundwater compliance monitoring did not detect pesticides, PCBs, TPH or metals at concentrations exceeding MTCA Method A cleanup levels.

2.5 Institutional Controls

Following remedial actions, it was determined the Site would be eligible for a NFA determination if institutional controls were implemented in the form of a Restrictive Covenant (Covenant). A Covenant was recorded for the Site in May 1996, and an NFA determination was issued for the Site in June 1996. The Covenant imposes the following limitations:

1. The Site contains residual concentrations of petroleum hydrocarbons and metals in soil. The Site has been covered with imported clean soil and a PVC liner, and has been revegetated with grass. Remediation or removal of the contaminated soil must be addressed before the owner or a successor owner alters or modifies the Site to the extent it affects the contamination, the clean soil cap, or the PVC liner. Any plans for alteration, modification, or removal shall be submitted to Ecology, or a successor agency, for approval.
2. The owner or successor owner of the Site must give written notice to Ecology, or to a successor agency, of the owner's or successor owner's intent to convey any interest in the Site, and shall, prior to conveyance of title, easement, lease, or other interest in the Site, provide the new owner or lessee of any interest in the Site a copy of the August 1994 Independent Remedial Action Report. No conveyance of title, easement, lease, or other interest in the property shall be consummated by the owner without adequate and complete provision for continued compliance with this Covenant. Copies of this Covenant shall be furnished to any transferee of the Site.
3. The owner or successor owner agrees to maintain the clean soil cap and agrees to submit written notification to Ecology, or a successor agency, on an annual basis, confirming the clean soil cap has undergone a visual inspection, received any necessary repairs due to erosion, and remains in place. This Covenant does not require the owner or successor owner to maintain or inspect the PVC liner.
4. The owner or successor owner must notify and obtain approval from Ecology, or from a successor agency, prior to any use of the Site that is inconsistent with the terms of this Covenant. Ecology or its successor agency may approve such a use only after public notice and comment.

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5. The owner or a successor owner shall grant Ecology, or a successor agency, and its designated representatives the right to enter the Site at reasonable times for the purpose of carrying out its duties under RCW Chapter 70.105D, including the right to take samples, inspect any remediation actions taken at the Site, and inspect records.
 6. The owner of the Site and any successor owners reserve the right under WAC 173-340-440 to record an instrument which provides that this Covenant shall no longer limit use of the Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of Ecology, or of a successor agency. Ecology, or a successor agency, may consent to the recording of such an instrument only after public notice and comment, and only if a covenant is no longer required by law at this Site.

A copy of the Covenant is available as Appendix 6.3.

3.0 Periodic Review

3.1 Effectiveness of completed cleanup actions

3.1.1 Soil Direct Contact

Based upon the Site visit conducted on December 11, 2013, the soil cap at the Site continues to eliminate exposure pathways (ingestion, contact) to contaminated soils. The cap appears in good condition. The concrete drainage channel identified as being cracked and undermined during the 2008 review has been repaired and appears sound. The Site remains undeveloped. There is evidence of human foot traffic and wildlife use on the cap and surrounding slope. This traffic does not appear to be adversely impacting the cap or posing a risk of exposing contaminated soils contained at the Site. A photo log is available as Appendix 6.4.

3.1.2 Institutional Controls

The Covenant for the Site was recorded and is in place. This Covenant prohibits activities that will result in the release of contaminants contained as part of the cleanup without Ecology's approval, and prohibits any use of the property inconsistent with the Covenant. As part of the Covenant, the property owner is required to submit an annual notification the cap has undergone a visual inspection, received necessary repairs due to erosion, and it remains in place. It is apparent the Site is being inspected and repaired, but Ecology has not received notification of these activities.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

There is no new relevant scientific information for the petroleum contaminants related to the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

The cleanup at the site was governed by Chapter 173-340 WAC (1996 ed.). WAC 173-340-702(12) (c) [2001 ed.] provides:

“A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment.”

Although cleanup levels changed for contaminants of concern at the Site as a result of modifications to MTCA in 2001, contamination remains at the site above MTCA Method A cleanup levels and the cleanup action is still protective of human health and the environment. A table containing cleanup levels for the Site is available in section 2.3.

3.4 Current and projected Site use

The Site is currently vacant and accessible to public non-motorized traffic. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and practicability of higher preference technologies

The remedy implemented included containment of hazardous substances and it continues to be protective of human health and the environment. While higher preference cleanup technologies may be available, they are still not practicable at this Site.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the remedial action were capable of detection below MTCA Method A cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Soil cleanup levels have not been met at the Site; however, under WAC 173-340-740(6) (f), the cleanup action is determined to comply with cleanup standards, since the long-term integrity of the containment system is ensured and the requirements for containment technologies have been met.
- The Covenant for the property is in place and will be effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

Based on this periodic review, Ecology has determined the requirements of the Covenant are being observed. No additional remedial actions are required by the property owner. It is the property owner's responsibility to continue to inspect the Site to assure that the integrity of the cap is maintained.

4.1 Next Review

The next review for the Site will be scheduled five years from the date of this periodic review. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years from the completion of those activities.

5.0 REFERENCES

- Century West Engineering Corporation. *Report of Findings*. January 1991.
- Kleinfelder, Inc. *Remedial Investigation Report*. July 1993.
- Kleinfelder, Inc. *Groundwater Monitoring Data Summary Report*. August 1993.
- Kleinfelder, Inc. *Independent Remedial Action Report*. August 1994.
- Kleinfelder, Inc. *August 1994 Compliance Groundwater Monitoring Report*. September 1994.
- Kleinfelder, Inc. *November 1994 Compliance Groundwater Monitoring Report*. December 1994.
- Kleinfelder, Inc. *April-May 1995 Compliance Groundwater Monitoring Report*. May 1995.
- Kleinfelder, Inc. *Compliance Monitoring Report, May-August 1995*. August 1995.
- Ecology. *Restrictive Covenant*. June 17, 1996.
- Ecology. *No Further Action Determination Letter*. June 24, 1996.
- Ecology. *Periodic Review*. October 27, 2008.
- Ecology. *Site Visit*. December 11, 2013.

6.0 APPENDICIES

Subject Site

Spokane Valley Freeway

96

KOREN

Eastwood

Kodlak Dr.

Bettman St.

Deer Rd.

Dollar Rd.

David St.

Elizabeth Rd.

Dora St.

1st Ave.

2nd Ave.

3rd Ave.

4th Ave.

5th Ave.

6th Ave.

7th Ave.

8th Ave.

9th Ave.

10th Ave.

11th Ave.

12th Ave.

14th Ave.

15th Ave.

16th Ave.

17th Ave.

Valleyview

Wood

Sherman

Buttercup

Wardson

Ridge Dr.

Stanley

Koren St.

Howe

Rancher

Dickey St.

13th Ave.

14th Ave.

Eastern Rd.

Dollar Rd.

Bradley

Coleman

Girard Rd.

North

Subject Site

KLEINFELDER

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Project #

60-5035-03

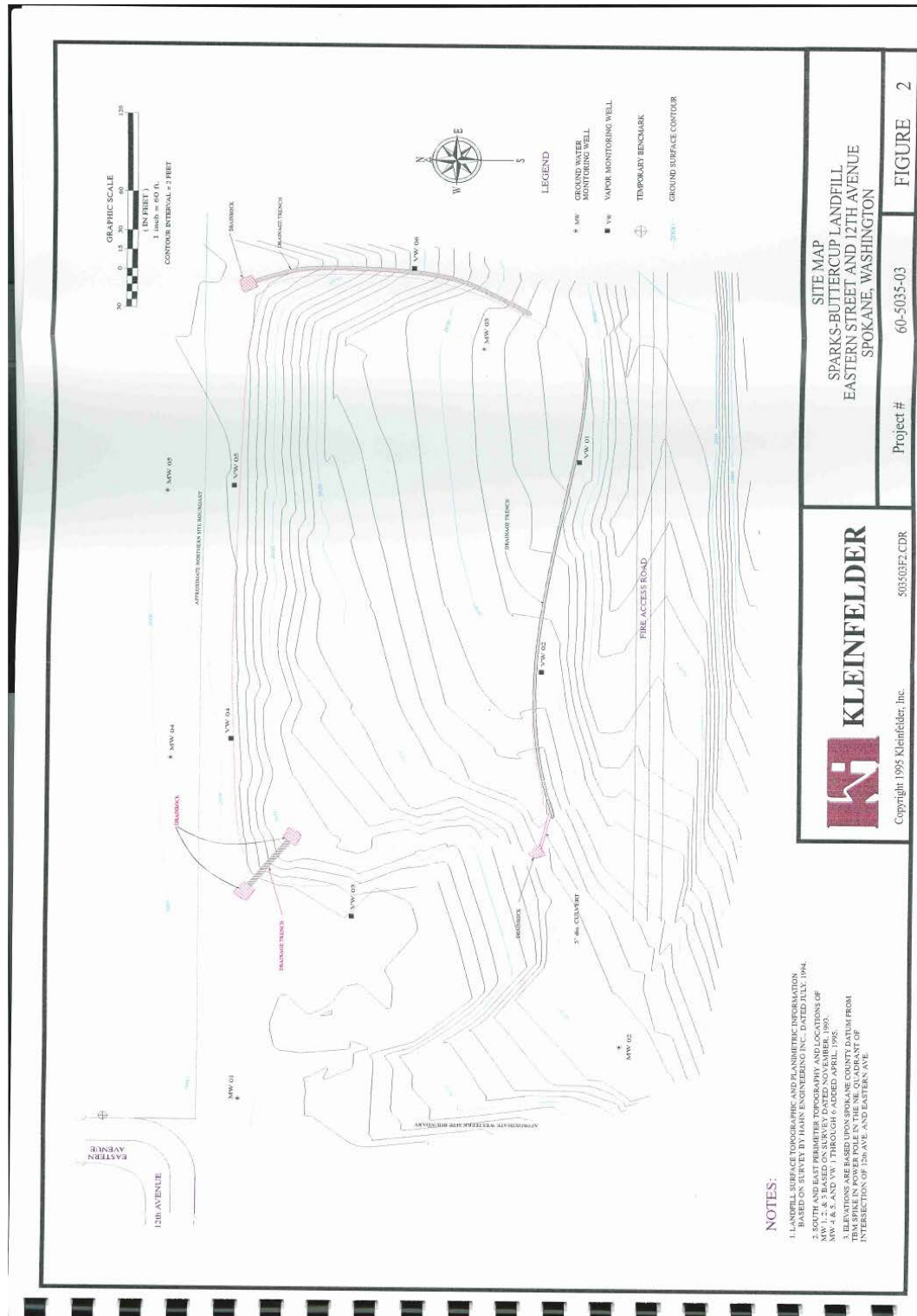
FIGURE 1

SITE LOCATION MAP

SPARKS & BUTTERCUP LANDFILL

SPOKANE, WASHINGTON

6.2 Site Plan



6.3 Restrictive Covenant

RESTRICTIVE COVENANT

Sparks and Buttercup Subdivision
12th Avenue and Eastern Street, Spokane, Washington

The property that is the subject of this Restrictive Covenant ("the Site") has been the subject of remedial action under Chapter 70.105D RCW and is legally described as follows:

Those portions of Blocks 11 and 12 and portions of Twelfth Avenue, Dyer Street, Dollar Street, and portions of the Alleys through said Blocks 11 and 12, all in Sparks Addition to Spokane as shown on the plat recorded in Volume L of Plats Page 6, Spokane County, Washington and being more particularly described as follows:

Commencing at the intersection of the centerline of Fourteenth Avenue and Eastern Road as shown on the Final Plat of Buttercup Addition recorded in Volume 16 of Plats Page 84, in said Spokane County, Washington; thence N0°14'15"W, along the centerline of said Eastern Road, a distance of 607.95 feet; thence N89°45'45"E, perpendicular to the preceding line, a distance of 221.01 feet to the POINT OF BEGINNING; thence S88°29'11"E a distance of 106.40 feet; thence S88°22'41"E a distance of 312.92 feet; thence S25°43'48"E a distance of 38.73 feet; thence S12°00'22"E a distance of 31.65 feet; thence S6°49'26"W a distance of 70.24 feet; thence S33°53'10"W a distance of 79.12 feet; thence S89°16'10"W a distance of 40.03 feet; thence N77°53'50"W a distance of 90.86 feet; thence N78°54'25"W a distance of 59.47 feet; thence N86°13'03"W a distance of 59.66 feet; thence N84°34'09"W a distance of 80.35 feet; thence N30°47'47"W a distance of 146.07 feet; thence N13°58'31"E a distance of 47.34 feet to the POINT OF BEGINNING.

The investigative and remedial actions undertaken to clean up the Site (hereinafter the "Cleanup Action") are described in the following reports:

Remedial Investigation Report, Sparks and Buttercup Subdivision, Eastern Street and 12th Avenue, Spokane, Washington: Kleinfelder, Inc., July 7, 1993.

Ground Water Monitoring Data Summary Report, Sparks and Buttercup Subdivision, Eastern Street and 12th Avenue, Spokane, Washington: Kleinfelder, Inc., August 13, 1993

Independent Remedial Action Report, Sparks and Buttercup Landfill, Eastern Street and 12th Avenue, Spokane, Washington: Kleinfelder, Inc., August 1994.

August 1994 Compliance Ground Water Monitoring Report, Sparks and Buttercup Subdivision, Eastern Street and 12th Avenue, Spokane, Washington:
Kleinfelder, Inc., September 14, 1994.

November 1994 Compliance Ground Water Monitoring Report, Sparks and Buttercup Subdivision, Eastern Street and 12th Avenue, Spokane, Washington: Kleinfelder, Inc., December 28, 1994

April-May 1995 Compliance Monitoring Report, Sparks and Buttercup Subdivision, Eastern Street and 12 Avenue, Spokane, Washington:
Kleinfelder, Inc., May 26, 1995.

Compliance Monitoring Report, May-August 1995, Sparks and Buttercup Subdivision, Eastern Street and 12th Avenue, Spokane, Washington:
Kleinfelder, Inc., August 30, 1995.

These documents are on file at the State of Washington Department of Ecology ("Ecology") Eastern Regional Office. This Restrictive Covenant is required under Ecology's rule WAC 173-340-440 because the cleanup action on the Site resulted in residual concentrations of petroleum hydrocarbons and metals in the soil which exceed Ecology's cleanup levels established under WAC 173-340-740.

The undersigned, U. S. Bancorp Financial Inc., successor by merger to Spectrum Properties, Inc., is the fee owner of the Site in Spokane County, State of Washington. This property owner makes the following declaration as to limitations, restrictions, and uses to which the Site may be put, and specifies that such declarations shall constitute covenants to run with the land, as provided by law, and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Site.

Section 1. The Site contains residual concentrations of petroleum hydrocarbons and metals in the soil. The Site has been covered with imported clean soil and a PVC liner, and has been revegetated with grass. Remediation or removal of the contaminated soil must be addressed before the owner or a successor owner alters or modifies the Site to the extent that it affects the contamination, the clean soil cap, or the PVC liner. Any plans for alteration, modification, or removal shall be submitted to Ecology, or a successor agency, for approval.

Section 2. The owner or successor owner of the Site must give written notice to Ecology, or to a successor agency, of the owner's or successor owner's intent to convey any interest in the Site, and shall, prior to conveyance of title, easement, lease, or other interest in the Site, provide the new owner or lessee of any interest in the Site a copy of the August 1994 Independent Remedial Action Report. No conveyance of title, easement, lease, or other interest in the property shall be consummated by the owner without adequate and complete provision for continued compliance with this Restrictive Covenant. Copies of this Restrictive Covenant shall be furnished to any transferee of the Site.

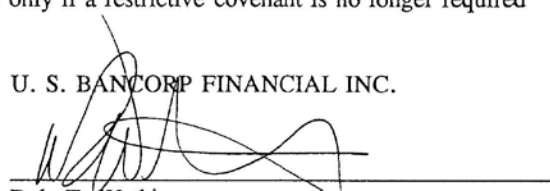
Section 3. The owner or successor owner agrees to maintain the clean soil cap and agrees to submit written notification to Ecology, or a successor agency, on an annual basis, confirming that the clean soil cap has undergone a visual inspection, received any necessary repairs due to erosion, and remains in place. This covenant does not require the owner or successor owner to maintain or inspect the PVC liner.

Section 4. The owner or successor owner must notify and obtain approval from Ecology, or from a successor agency, prior to any use of the Site that is inconsistent with the terms of this Restrictive Covenant. Ecology or its successor agency may approve such a use only after public notice and comment.

Section 5. The owner or a successor owner shall grant Ecology, or a successor agency, and its designated representatives the right to enter the Site at reasonable times for the purpose of carrying out its duties under RCW Chapter 70.105D, including the right to take samples, inspect any remediation actions taken at the Site, and inspect records.

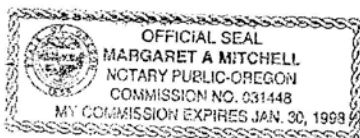
Section 6. The owner of the Site and any successor owners reserve the right under WAC 173-340-440 to record an instrument which provides that this Restrictive Covenant shall no longer limit use of the Site or be of any further force or effect. However, such an instrument may be recorded only with the consent of Ecology, or of a successor agency. Ecology, or a successor agency, may consent to the recording of such an instrument only after public notice and comment, and only if a restrictive covenant is no longer required by law at this Site.

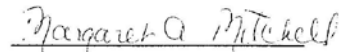
U. S. BANCORP FINANCIAL INC.


Dale T. Watkins
Vice President

STATE OF OREGON)
) SS
COUNTY OF MULTNOMAH)

This instrument was acknowledged before me on May 16, 1996, by Dale T. Watkins as Vice President of U. S. Bancorp Financial Inc.




Notary Public for Oregon
My commission expires: 1-30-98

6.4 Photo log

Photo 1: Northwest Site Entrance - from the northwest



Photo 2: Repaired Concrete Drain Channel - from the northwest



Photo 3: Cap Surface - from the east



Photo 4: Cap Surface – from the south

