MALCOLM PIRNIE

Operation, Monitoring, and Maintenance Work Plan

APPENDIX

N

MALCOLM PIRNIE

Operation, Monitoring and Maintenance Work Plan

CERTAINTEED SITE

PORTIONS OF HANNA FURNACE – PARCELS 1 AND 2

Prepared for:

Krog USC Associates I, LLC

Submitted by:
Malcolm Pirnie, Inc.
40 Centre Drive
Orchard Park, NY 14127

FEBRUARY 2005

MALCOLM PIRNIE

OPERATION, MONITORING, AND MAINTENANCE WORK PLAN
CERTAINTEED SITE

TABLE OF CONTENTS

ATTACHMENTS

MALCOLM PIRNIE

Introduction

SECTION 1

This Operation, Monitoring and Maintenance (OM&M) Work Plan has been prepared for the CertainTeed site (Site) located on portions of Parcels 1 and 2 of the former Hanna Furnace Site. The Site is the subject of a Voluntary Cleanup Agreement (the Agreement) entered into by Downtown Development Inc., Krog USC Associates I, LLC, and the New York State Department of Environmental Conservation (NYSDEC). The Agreement requires that the Site owner maintain the institutional and physical components that comprise the completed voluntary cleanup. This OM&M Work Plan describes the conditions and procedures for maintaining the physical components of the completed Site voluntary cleanup, and is an enforceable part of the Voluntary Cleanup Agreement.

The owner (Owner) of the Site (or any portion thereof) should evaluate the criteria presented in this plan and should recommend changes to the NYSDEC, as appropriate, depending on actual post-closure site conditions. As a minimum, this plan should be reviewed annually during the post-closure period and updated when necessary.

Prior to initiation of the OM&M Work Plan, the Owner shall prepare and submit appropriate organizational documents to the NYSDEC for review and approval. The organizational documents shall include:

- An organizational chart outlining the responsible party's personnel (with qualifications) who will be responsible for implementing the post-closure operation, maintenance and monitoring program (Attachment A).
- A health and safety plan.
- Example inspection report forms.

- A schedule for the annual inspections and reporting.

MALCOLM PIRNIE

Background

SECTION 2

The Hanna Furnace Site is a vacant industrial property currently owned by the Krog Union Ship Canal Associates – 1. The site surrounds the eastern portion of the Union Ship Canal and encompasses approximately 113 acres, including the Former Railroad Yard (Parcel 1) which comprises approximately 43 acres, and the Former Manufacturing Area (Parcel 2) which comprises approximately 29 acres. The Hanna Furnace Site is bordered to the west by New York State Route 5, to the south by the Lackawanna Commerce Park, to the east by railroad tracks, and to the north by wetland areas and the Shenango Steel property. The Hanna Furnace Site surrounds the eastern portion of the Union Ship Canal.

The Hanna Furnace Site has been characterized during several previous investigations, the results of which are summarized in the Remedial Action Work Plans (RAWP) prepared for Parcels 1 and 2. Based on the findings of those investigations, together with the size of the parcels, their historic use, and the City's current developmental needs and plans, the Hanna Furnace Site has been subdivided into four subparcels for developmental considerations (see Figure 1-2 of the Remedial Action Report). The Former Railroad Yard has been designated Parcel 1. Parcel 2 is comprised of the Former Manufacturing Area. Parcel 3 consists of an area surrounding the Union Ship Canal 200-feet wide on each side. Parcel 4 includes the Former Filter Cake/Flue Ash Disposal Area located to the north of the Union Ship Canal. These parcels will be considered separately during future environmental investigatory and remedial activities, as well as during redevelopment activities at the Site.

In 2004, Krog USC Associates I, LLC (Krog), in conjunction with Certain Teed Corporation (Certain Teed), began redevelopment of a portion of the site in accordance

with Voluntary Cleanup Agreements dated January 2, 2003 and January 6, 2003 and site-specific Remedial Action Work Plans prepared for Parcel 1 (Malcolm Pirnie, 2002) and Parcel 2 (OB&G, 2002). Construction activities began at the site on December 3, 2003 The construction activities were completed by January 7, 2005, including site clearing and regrading, cover system installation, landscaping/site restoration, and facility construction. The construction contractor demobilized from the site the week of January 3, 2005.

MALCOLM PIRNIE

Remedial Action Work Plan

SECTION 3

The Remedial Action Work Plans (RAWP) for Parcels 1 and 2 were prepared in 2002 to be implemented during the voluntary cleanup of the Hanna Furnace Site.

According to the RAWPs, in order to eliminate potential exposure risks associated with direct contact with site fill material, the entire parcels or developed portions thereof will be covered as part of site redevelopment. The cover system will be placed directly on top of the regraded on-site fill material and will include clean soil for outdoor, vegetated areas; asphalt for roads and parking lots; or concrete for sidewalks, buildings, and heavy use areas. Surface coverage over the entire redeveloped portion of the parcels will be required by the site owner or developer as a pre-condition of occupancy.

The cover system has been designed to be protective of human health and the environment. Because VOCs were not detected above the Site-Specific Action Levels (SSALs) in the samples collected in Parcels 1 or 2, the primary exposure pathway for contaminants (i.e., metals and polycyclic aromatic hydrocarbons) at the site in soil and high pH in groundwater is via direct contact. The cover system will eliminate the potential for direct contact with soil and is therefore protective of human health and the environment. Groundwater will not be used at the site and therefore no direct contact with elevated pH groundwater is anticipated except during invasive construction activities.

The Qualitative Risk Assessment performed as part of the Supplemental Investigation (Malcolm Pirnie, 2000) evaluated the risk posed by chemicals of potential concern (COPCs) to human health and wildlife. The Risk Assessment also evaluated the adequacy of the cover system planned for placement during site redevelopment and

determined that the above-described cover system would protect human health and wildlife from these COPCs.

MALCOLM PIRNIE

Summary of the Remedial Closure Design

SECTION 4

4.1 Preparation of Site Surface

The Site was graded prior to cover placement activities, in accordance with the Remedial Action Work Plans (RAWP) and Soil/Fill Management Plan (SFMP). The fill material and debris piles in the Site were graded to a regular topographic surface as planned for redevelopment. All trees, shrubs, roots, brush, masonry, rubbish, scrap, debris, pavement, curbs, fences and miscellaneous structures were removed and disposed of off-site at a permitted disposal facility or stockpiled north of the Union Ship Canal on Parcel 4 in accordance with solid waste regulations (6NYCRR Part 360, et. al.). Prior to placement of the cover system, all protruding material were removed from the ground surface.

4.2 Cover System

4.2.1 Soil

In areas that will not receive significant equipment or vehicular use, the cover system is composed of soil fill from a NYSDEC-approved borrow source and tested in accordance with the RAWPs and found to contain constituent concentrations less than those specified in NYSDEC TAGM 4046. The soil cover was placed in accordance with the RAWPs.

It will be the responsibility of the Owner to annually verify that the soil cover has remained in good condition (e.g., grass or other vegetation is maintained) and sufficiently covers the soil/fill material at the Site (i.e., eroded areas are repaired and the soil cover is maintained). Certification as to this verification is included on the site inspection form presented as Attachment B.

Grassed areas will be maintained with a sustainable perennial mixture of species, as specified in the RAWPs. Where repairs to the soil cover system are made, or activities disturb the vegetative cover, grass seed will be applied in accordance with the RAWPs. Replacement or addition of trees or shrubs will be performed in accordance with the RAWPs and on berms with sufficient thickness of clean soil to allow the excavation of only clean fill deep enough to plant the tree or shrub root ball.

4.2.2 Asphalt

The cover system in areas that are roads, sidewalks, and parking lots will consists of a minimum of two inches of asphalt placed over the soil/fill material at the site. The asphalt was placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence, in accordance with the RAWPs. Prior to placement of the subbase, all protruding material was removed from the ground surface and the area re-graded to a regular surface.

It will be the responsibility of the Owner to annually verify that the asphalt has remained in good condition and sufficiently covers the soil/fill material.

4.2.3 Concrete

The cover system in areas designated for structures consists of a minimum of two inches of concrete that was placed above the soil/fill material. The concrete was placed on a minimum four-inch gravel subbase to provide stability for construction and to limit subsidence. A polyethylene vapor barrier with a minimum thickness of 8-mils was installed under all structures to provide additional protection for on-site workers. Concrete could also be used instead of asphalt for roads, sidewalks, and parking lots. Prior to placement of the subbase, all protruding material was removed from the ground surface and the area re-graded to a sufficient regular surface.

It will be the responsibility of the Owner to annually verify that the concrete has remained in good condition and sufficiently covers the soil/fill material at the Site as per Attachment B.

4.3 Erosion Control Measures

In accordance with the SFMPs, design and permanent construction features were incorporated into the site construction plans to control erosion. It will be the responsibility of the Owner to annually certify that storm water channel slopes, vegetation, and any synthetic erosion control fabrics placed in such channels remain in good condition.

4.4 Fencing and Access Control

In accordance with the RAWPs and SFMP, fencing was constructed and signs posted around all areas with exposed soil/fill or areas where excavation occurred. Since the Site is completely graded, fencing the entire Site is no longer necessary. A fence was installed along the south side of the building for security purposes. It will be the responsibility of the Owner to annually certify that fences, gates, and signs are in place and that access is restricted, to the best of the Owner's ability.

MALCOLM PIRNIE

Inspection Procedures

SECTION 5

The physical components of the cover system shall be inspected annually by a representative of Owner (or its delegated agent) qualified to carry out such inspections. The inspection will be performed under the supervision of a professional engineer licensed to practice in New York State. The inspection will be coordinated with facility personnel at least one week prior to ensure that most, if not all, of the paved areas will be accessible for inspection. Indoors, in office spaces with floor coverings, the inspection will at minimum make note of areas with settled or uneven surfaces, seepage or flooding. Arrangements to repair those areas that require maintenance, if any, will be initiated as soon as possible.

The annual inspection shall include, but not be limited to, those matters set forth on the Environmental Inspection Form, attached hereto as Attachment B. These inspection reports, which shall include a map that shows areas of damage or required maintenance, shall be kept on file by the Owner. If the inspections reveal that maintenance is necessary, then the Owner shall notify the NYSDEC, and arrange to complete the repairs. The NYSDEC shall be informed by Owner when repairs are complete.

MALCOLM PIRNIE

Final Cover System Condition

SECTION 6

The final cover system shall be observed by traversing the cover on foot and making appropriate observations, notes and photographic records as necessary, for inclusion with the report. It is anticipated that some maintenance activities will be necessary during the closure period. The following characteristics shall be looked for during the observation of the cover system, fencing and signs, and erosion control features:

- Sloughing.
- Cracks.
- Settlement (depression and puddles).
- Erosion features.
- Distressed vegetation/turf.
- Damaged fencing, gates and signs.

The following paragraphs describe actions that should be taken to address the conditions described above. Maintenance and repairs that are typically necessary during the closure period are also described.

6.1 Sloughing

Sloughing of the soil cover may occur. Areas where sloughing has occurred shall be repaired. Cover soil shall be placed in accordance with the requirements of the Remedial Action Work Plans (RAWP) for Parcels 1 and 2, and the Soil/Fill Management Plan (SFMP) for Parcel 1.

6.2 Cracks

The locations of any cracks in the soil, asphalt or concrete cover should be noted on the inspection log and site map, including width, length and depth of the crack. The appropriate maintenance procedure will be determined by the inspector. Small willow cracks in the soil cover can be repaired by minor re-grading of the cracked area and re-seeding the area. Larger cracks that appear to extend into the fill material shall be filled with soil similar to that used for construction of the cover soil layer prior to re-seeding, in accordance with RAWPs for Parcels 1 and 2. Repairs to the asphalt and/or concrete will be completed when and in the fashion deemed necessary by the inspector.

6.3 Settlement

Settlement features such as depressions or areas of ponding water shall be re-graded by placing additional soil cover so that surface water drains in the appropriate direction. Previous investigations approximately defined a portion of the Site where the pH of the groundwater was found to be elevated (see Figure 2-1 of the RAWP for Parcel 1). Ponded water within this approximate area shall be examined for elevated pH prior to any regrading activity and if necessary, contained and disposed in accordance with the RAWP.

6.4 Erosion Features

Erosion features shall be repaired by backfilling to the original grade with soil and re-seeding. Torn or displaced synthetic erosion control fabric in storm water channels shall be repaired or replaced as directed by the inspector.

6.5 Distressed Vegetation/Turf

Areas of distressed turf shall be re-seeded and a starter fertilizer applied. Large-root growth may also compromise the integrity of the soil cover and shall be discouraged with regular mowing. Reasonable efforts shall be taken to avoid damage to the turf from traffic and other unintended uses.

6.6 Fencing and Access Control

To the best of owner's ability, physical discontinuities in fence material shall be repaired; fence posts and foundations that show evidence of structural weakness shall be repaired or replaced as necessary; gates and locks shall be maintained to deter unauthorized entry; and warning signs shall be kept secured in place and trees shall be trimmed to ensure the signs are visible.

MALCOLM PIRNIE

Inspection Reporting

SECTION 7

Annual inspection reports shall be reported by the Owner to the NYSDEC. A schedule for inspections is included as Attachment C. If the inspection finds that corrective action is required, a follow-up inspection will be made after the repairs have been completed. If the inspection determines that corrective action is required, the Corrective Action Form will be included with the inspection report, confirming that the repairs were completed in accordance with the Parcel 1 and 2 Remedial Action Work Plans. A Corrective Action Form is included as Attachment D.

Any analytical data that may be gathered durinsg the course of the inspection or corrective action shall also be included with the inspection report and submitted to the NYSDEC within 21 days of the inspection. The inspection reports will be submitted by the Site Owner with an attached Annual Certification Form, signed and notarized by the Site Owner, certifying that the specified engineering and institutional controls are in place and functioning. An Annual Certification Form is presented as Attachment E.

MALCOLM PIRNIE

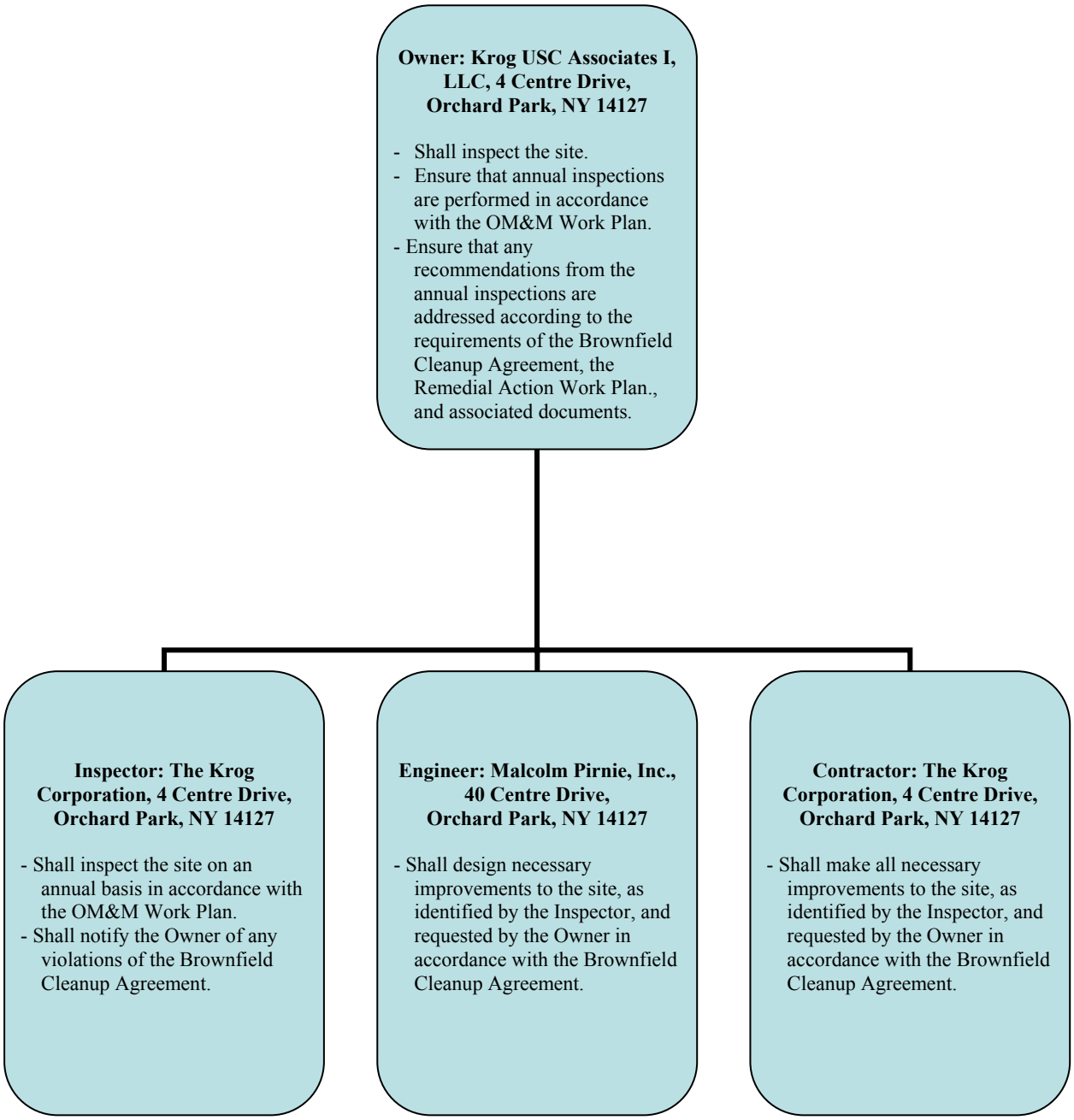
OM&M Organization Chart

ATTACHMENT

A

OPERATING, MONITORING, AND MAINTENANCE ORGANIZATION CHART

CertainTeed Site (Portions of Parcels 1 and 2 of Hanna Furnace)



MALCOLM PIRNIE

Environmental Inspection Form

ATTACHMENT

B

ENVIRONMENTAL INSPECTION FORM

CertainTeed Site (Portions of Parcels 1 and 2 of Hanna Furnace)

Property Name: _____ Inspection Date: _____

Property Address: _____

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

SIGNATURE:

The findings of this inspection were discussed with appropriate personnel, corrective actions were identified and implementation was mutually agreed upon:

Inspector: _____ Date: _____

Next Scheduled Inspection Date: _____

INDOOR AREAS

	Yes	No
1. Are there settled of uneven areas?	_____	_____
2. Are there indications of seepage or flooding?	_____	_____

SECURITY AND ACCESS

	Yes	No
3. Access controlled by perimeter fencing?	_____	_____
Are there sections of the fence material damaged or missing?	_____	_____
Are the fence or gate post foundations structurally sound?	_____	_____
4. "No Trespass" signs posted in appropriate languages?	_____	_____
Are the signs securely attached to the fencing or posts?	_____	_____
Are there sufficient signs; are the signs adequately spaced around the perimeter of the property?	_____	_____
5. Is there evidence of trespassing?	_____	_____
Is there evidence of illegal dumping?	_____	_____

COVER & VEGETATION

	Yes	No
6. Final cover in acceptable condition?	_____	_____
Is there evidence of sloughing, erosion, ponding or settlement?	_____	_____
Is there evidence of unintended traffic; rutting?	_____	_____
Is there evidence of distressed vegetation/turf?	_____	_____
7. Final cover sufficiently covers soil/fill material?	_____	_____
Are there cracks visible in the soil or pavement?	_____	_____
Is there evidence of erosion in the stormwater channels or swales?	_____	_____
Is there damage to the synthetic erosion control fabric in the channels or swales?	_____	_____

ACTIVITY ON SITE

8. Any activity on site that mechanically disturbed soil cover?	_____	_____

ADDITIONAL FACILITY INFORMATION

Development on or near the site? (Specify size and type: e.g., residential, 40 acres, well and septic)

COMMENTS

Item #

_____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

MALCOLM PIRNIE

ATTACHMENT

C

Annual Schedule of Inspection

Annual Schedule of Inspection for Institutional/Engineering Controls

CertainTeed Site (Portions of Parcels 1 and 2 of Hanna Furnace)

Property Name:
Property Address:

County: Erie
City/Town: Buffalo
Property ID: (Tax Assessment Map)
Section:_____ Block:_____ Lot(s):_____

Scheduled Date of Inspection	Actual Date of Inspection	Inspector	Comments
1/2006			
1/2007			
1/2008			
1/2009			

MALCOLM PIRNIE

Corrective Action Form

ATTACHMENT

D

CORRECTIVE ACTION FORM

CertainTeed Site (Portions of Parcels 1 and 2 of Hanna Furnace)

Property Name: _____

Property Address:

City: _____ State: _____ Zip Code: _____

Property ID: (Tax Assessment Map)

Section:_____ Block:_____ Lot(s):_____

Total Acreage: _____

Weather (during inspection): Temperature: _____ Conditions:

An inspection of the subject property on ___/___/___ identified the need for corrective action.

CORRECTIVE ACTION TAKEN

Description: (attach site sketch and photographs)

Date Completed:

SIGNATURE:

The corrective action described above was completed in accordance with all relevant requirements of the Remedial Action Work Plan.

Inspector: _____Date: _____

ATTACHMENTS

1. Site Sketch
2. Photographs
3. Laboratory Report (s)

MALCOLM PIRNIE

Annual Certification Form

ATTACHMENT

E

Annual Certification of Institutional/Engineering Controls

CertainTeed Site (Portions of Parcels 1 and 2 of Hanna Furnace)

Property Name:
Property Address:

County: Erie
City/Town: Buffalo
Property ID: (Tax Assessment Map)
Section:_____ Block:_____ Lot(s):_____

I _____, residing at _____,
as owner of the property(ies) listed above which are located wholly or partially within the boundaries of the Voluntary Cleanup Site named above; do certify that the engineering and/or institutional controls, as specified in the Declaration of Covenants and Restrictions for the Voluntary Cleanup Site are in-place and functioning as designed within the property(ies) listed above.

Signature:_____

(This area for notary public)