UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
STATEMENT OF BASIS
RECLAIMERS, INC./GROUP DEKKO INTERNATIONAL, INC.
KENDALVILLE, INDIANA
IND 984 894 527

INTRODUCTION

This Statement of Basis for the Reclaimers, Inc./Group Dekko International, Inc. (Reclaimers, Inc.) facility discusses alternative remedies for site remediation and explains the remedy proposed by the United States Environmental Protection Agency (U.S. EPA) to remediate the site. U.S. EPA will select a final remedy for the facility only after the public comment period has ended and the information submitted by the public has been reviewed and considered.

The U.S. EPA is issuing this Statement of Basis as part of its public participation responsibilities under the Resource Conservation and Recovery Act (RCRA). This Statement of Basis summarizes information found in greater detail in the RCRA Closure Plan Waste Pile (Sept. 1992) and Revised Closure Plan Wire Chop Waste Pile (Oct. 1995) and other documents in this facility=s Administrative Record. The Remedial Work Plan report, characterizing the nature and extent of contamination and evaluating remedies, was performed by Reclaimers, Inc. in accordance with an RCRA Administrative Order on Consent (Order). U.S. EPA and the State of Indiana encourage the public to review these documents in order to gain a more comprehensive understanding of the facility and the activities that have been conducted under RCRA authority.

U.S. EPA may modify the proposed remedy or select another remedy based on public comments or new information obtained. Therefore the public is encouraged to review and comment on the proposal. If a public meeting is requested, U.S. EPA will publish a newspaper notice of the meeting prior to the meeting date.

SUMMARY OF PROPOSED REMEDY

The U.S. EPA is proposing the following remedy to address contamination at the Reclaimers, Inc. facility:

1. No further action for site soils. Site soils were previously remediated to meet residential cleanup standards.

2. Monitor groundwater for a minimum of eight quarters before clean closure can be attained and a certificate for clean closure for groundwater can be accepted. If clean closure has not or can not be obtained at that time, a total of seven more years of groundwater monitoring (20 additional quarterly monitoring events) would be required to evaluate the plume stability. Depending on the results of the groundwater monitoring, groundwater remediation may also be necessary. The company must continue providing

assurances to Indiana Department of Environmental Management (IDEM) to demonstrate that it has the financial resources to operate, maintain and monitor the selected remedy over the coming years.

FACILITY BACKGROUND

The Reclaimers, Inc. facility, located on U.S. Highway 6, 3.5 miles west of Kendallville, Indiana, recovers copper metal from insulated wire, cable, and plastic and has been operating at this site since May 1981. In October 1996, Philip Environmental Indiana Inc. (Philip Indiana), a wholly owned-subsidiary of Philip Services Corp., acquired Reclaimers Inc. Philip Indiana merged into Reclaimers Inc. In February 1997, Reclaimers Inc. was merged into Philip Metals Recovery (U.S.A.) Inc. Philip Metals is the current owner and operator of the facility.

The facility operates three wire and cable chopping lines and services regional customers in the wire and cable, and telecommunications industries. The company use shredding, granulation and gravity separation in its process to recover copper from insulated wire and cable. The copper is sold to major brass smelters. The company originally hoped to recycle the waste that was left after removal of the copper, and began placing it in a pile in 1981. Due to slow development of technology and demand for recycled plastic, this pile (called the wire chop waste pile) continued to grow until 1991. At that time, it covered approximately 315,000 square feet in the south-southeast portion of the property. The pile was approximately 12 feet deep, for a total volume of 140,000 cubic yards or approximately 85,000,000 pounds. The waste pile included plastic particulates and filler material. These filler materials included paper, fiberglass, and other materials. Initially, the plastic particulates and filler material were placed in two discrete adjacent piles. As stockpiling continued, space limitations precluded separation between the plastic particulates and filler material piles, resulting in one contiguous wire chop waste pile.

The waste in the wire chop pile was a hazardous waste because it exhibited the characteristic of toxicity due to the lead that it contained. As a result of a Waste Characterization Study performed in December 1990, the wire chop pile was identified as a D008 waste (lead), with an average lead concentration of 26.7 milligrams per liter. The company began on-site treatment of wire chop waste in 1991. The treatment process was designed to reduce the amount of leachable lead in the waste. The treated waste was loaded on trucks and shipped to a non-hazardous waste landfill. This allowed the company to continue recovering copper from insulated wire and cable without adding any more waste to the pile. However, the pile remained as a source of soil and groundwater contamination.

The regional geologic setting for the site is characterized by hummocky topography resulting from glacial deposits. The site overlies the western edge of the Kendallville aquifer system. The Kendallville aquifer system is encountered at approximately 90 feet below ground surface (bgs) and up to 200 feet bgs locally. In the facility area, water well records indicate that the Kendallville aquifer is encountered 125 to 138 feet bgs. The Kendallville aquifer provides a source of potable water and produces typical yields ranging from 25 to 600 gallons per minute. Groundwater is not a source of drinking water in the immediate area (greater than 1-mile). Thin sand and gravel lenses contained within thick clay layers characterize the Kendallville

aquifer system. Individual sand and gravel beds range from 5 to 30 feet in thickness, although greater thickness can be found locally. Regional groundwater flow is toward the west-northwest. Overlying the thin aquifer sand and gravel is a clay sequence of up to 90 feet in thickness. The clay sequence provides protection for the Kendallville aquifer. Well drilling logs at the site indicate the clay sequence is 50 feet thick locally. The remaining 40 feet of overlying sediments to the surface are primarily clays and silts. Locally sand and gravel deposits occur in these clay and sand deposits. It is expected that this may result in relatively discontinuous, locally perched water-bearing units. Groundwater flow within these units is expected to flow to the south based on topographic expression (Remedial Work Plan, Dec. 1996-1997).

INTERIM CORRECTIVE MEASURES ALREADY COMPLETED

Several interim corrective measures were implemented to stabilize the site and provide early protection to human health and the environment. These included:

- Placement of a 20-ml Polyvinylchloride synthetic membrane cover on the wire chop waste pile to: control air dispersion of constituents; prevent precipitation from falling onto and leaching though the material; and prevent impact of stormwater run-off on the area.
- Installed temporary seep/run-off collection controls at the site. The system included a collection trench, sump and modifications to stormwater collection systems;
- Installed surface water diversion systems including soil berms and dikes.
- A metal stabilization compound MRC, manufactured by Regenesis, was used in a pilot treatment test for the stabilization of the wire chop waste pile. After remediation of the wire chop waste pile, surface water ponded in the backfilled excavation. The ponded water created reducing conditions in the area around monitoring well MW-03S resulting in naturally elevated arsenic levels. Groundwater sampling events have found arsenic concentrations above the regulatory levels of 5 mg/l.
- A Storm water drain pipe was installed in July of 2007. The storm drain pipe will drain the ponded water in the in the vicinity of MW-03S to eliminate the reducing conditions.

In 1998, the company began treating the waste in the wire chop waste pile using the same process that it had been using for treating the newly generated waste. The treated waste was then shipped off-site for proper disposal. All of the wire chop waste has been shipped off-site. Under a state-approved closure plan, the contaminated soil beneath the wire chop waste pile was excavated and shipped off-site for proper disposal. These activities have adequately addressed site soil contamination, and no further construction is required to address site soil contamination. The remaining soil meets residential cleanup standards. No evidence was found of site-related impact to sediment or surface water.

SUMMARY OF FACILITY RISKS

On-site Soils

An industrial exposure scenario is appropriate for this risk assessment rather than a residential exposure scenario, as the current zoning for the Reclaimers, Inc. property is industrial. All on-site soils meets industrial clean up standards. IDEM's closure goal for lead is 350 ppm which is below the residential standard of 400 ppm. Confirmatory soil sampling after removal of waste the chop pile showed lead levels not exceeding 160 ppm. The risk to the environment and human health from lead will be reevaluated, if it becomes necessary.

On-site Groundwater

Groundwater sampling data has indicated on-site groundwater contamination in the shallow groundwater. Arsenic, chromium, and nickel were detected above screening levels in monitoring well, MW-03S, at 83.7 parts per billion (ppb), 152 ppb, and 131 ppb respectively. The screening levels for groundwater were taken from the IDEM's; The Risk Integrated System of Closure (RISC) Technical Resource Guidance Document (February 15, 2001); The RISC Default Table 2006 level for arsenic is 10 ppb, for chromium is 100 ppb and for nickel is 100 ppb.

Naturally-occurring arsenic in the soil has leached into the groundwater as the site conditions have been changed due to remediation activities. The arsenic levels at MW-03S are naturally elevated by redox conditions. Redox (shorthand for **reduction/oxidation** reaction) describes all chemical reactions in which atoms have their oxidation number (oxidation state) changed. The oxidation state of arsenic is sensitive to the redox state of the solution. The excavation and disposal of the historical fluff material on site has resulted in the accumulation of storm water (ponded water) immediately upgradient of MW-03S. This ponded water has created a reducing condition around MW-03S resulting in naturally elevated arsenic concentrations. The application of the MRC (a metal stabilization compound) temporarily created even greater reducing conditions around MW-03S. Fluff sample collected and analyzed at numerous location and depths intervals did not identify any arsenic concentrations above typical arsenic background levels. Analysis of raw fluff sample indicated that arsenic did not leach from the fluff sample under simulated acid rain conditions or simulated landfill conditions.

The two other metals, chromium and nickel, were detected above the RISC levels at MW-03S, most likely as a result of the injection of a metal stabilization compound. MRC was injected in the area of MW-03S to address the elevated levels of arsenic. The manufacturer of MRC, Regenesis, provided the following explanation.

> *Oxidized iron [Fe(3)] minerals can contain trace amounts of other heavy metals (either naturally occurring or contaminant metals). For example, nickel (Ni) can be present in soil as a* $NiFe_2O_2$ *solid and chromium (Cr) and* $Cr_{0.5}O_{0.5}(OH)_3$ *solid. In both solids, Fe is present as FE(3). If an electron donor, such as metabolic acids produced by MRC, contact the soil, microbial reduction of the Fe(3) to Fe(2) can occur. Reduced Fe(2) is soluble and if the source was the minerals listed, then production of small amounts of soluble Ni(2) and Cr(3) can occur. Typically, once the electron donor is consumed, Fe(2) (and the trace metals NI and CR) will return to the background state which is a solid soil.*
>
> *Reference: Deutsh, William J. (1997) Groundwater Geochemistry, Lewis Publishers,*

New York.

The groundwater contamination is localized in the area of MW-03S. The risk to the environment and human health from arsenic, chromium, and nickel is low. The shallow groundwater is not used as a drinking water source on-site. There is no evidence of off-site migration of these contaminants. Overlying the Kendallville aquifer is a clay sequence which provides protection from the contamination in the shallow aquifer. Well drilling logs at the site indicate the clay sequence is 50 feet thick locally. The risk to the environment and human health from arsenic, chromium, and nickel will be reevaluated, if it becomes necessary.

SUMMARY OF PROPOSED REMEDY

Proposed Remedy for Soil Contamination
The previous remedial activities conducted at the site included removal of the soil contamination associated with the wire chop waste pile. Confirmatory soil samples after removal of the pile showed lead levels not exceeding 160 parts per million (ppm). The IDEM closure goal is 350 ppm which is less than the residential standard of 400 ppm. These activities have adequately addressed site soil for industrial or residential use. Therefore, no further corrective measures are required for site soils.

Proposed Remedy for Groundwater Contamination
U.S. EPA's proposed remedy for groundwater contamination at the site is that groundwater will be monitored for arsenic, chromium, and nickel for a minimum of eight quarters before clean closure can be attained, and a certificate for clean closure for groundwater can be accepted. If clean closure has not been obtained by that time, then seven more years of groundwater monitoring (20 additional quarterly monitoring events) would be required to evaluate the plume stability. The cleanup goal for groundwater contamination is to meet the RISC Default Table 2006 levels for arsenic 10 ppb, chromium 100 ppb, and nickel 100 ppb. At that time, a statistical evaluation will be generated to support a Groundwater Closure Certification for clean closure. If clean closure has not been obtained after seven years, groundwater remediation may be necessary. IDEM will incorporate the selected remedy into the closure plan for the wire chop waste pile. The estimated cost of seven years of monitoring and evaluation is $350,000. The estimated cost of Statistical Evaluation/Groundwater Closure Certification is $35,000. The total cost estimate is $385,000.

EVALUATION OF THE REMEDIAL OPTIONS

In order for U.S. EPA to determine the most appropriate remedy for the facility, viable corrective measure alternatives were evaluated pursuant to the nine criteria presented below. This section describes the expected performance of the proposed remedy:

1. Protect human health and the environment:
Soil contamination does not pose any unacceptable risk to human health and the environment. Groundwater on-site is not used as a drinking water source. Overlying the thin shallow aquifer of sand and gravel is a clay sequence of up to 90 feet in thickness. The clay sequence provides protection for the deep Kendallville aquifer. Well drilling logs at the site indicate the clay sequence is 50 feet thick locally. Thus, human health and the environment are protected under current conditions.

2. Achieve media cleanup objectives:
Confirmatory sample data has confirmed that the soils at the facility are safe. The levels of groundwater contamination are expected to meet the cleanup objectives in about seven years.

3. Control the source of the release to prevent further releases at levels that may pose a threat to human health or the environment:
The contaminated wire chop waste pile and surrounding soils have already been removed from the site and properly disposed of. The remaining soils are not a continuing source of groundwater contamination. The proposed groundwater remedy will monitor groundwater contamination to determine/assure that sources were eliminated.

4. Compliance with Standards for Management of Wastes:
This criterion assesses how alternatives assure that management of wastes during corrective measures is conducted in a protective manner. The owners and operators of the facility must comply with regulations enacted pursuant to RCRA, the Clean Air Act, and the Clean Water Act to assure the proper management of wastes generated in implementing the remedial actions. Reclaimers, Inc. must comply with the appropriate regulatory requirements when managing remediation wastes such as the groundwater waste obtained during sampling events.

5. Long-Term Reliability and Effectiveness:
This evaluation criterion addresses the results of a remedial alternative in terms of the risks remaining to human health and the environment at the site after remediation goals have been met.

The following factors characterize the potential risks remaining at the site following completion of the remedy implementation:

1. The magnitude of potential risk remaining due to treated waste or treatment residuals following the completion of the remedial alternative; and
2. The adequacy and reliability of controls that are used to manage untreated wastes or treatment residuals remaining at the site.

The soils remaining at the facility are safe. The lead contaminated soil and wire chop waste pile have been removed from the site and properly disposed. The proposed groundwater remedy is a reliable and effective method of achieving the long-term cleanup goals.

6. Reduction of Mobility, Toxicity, or Volume of Wastes or Contaminants:

This evaluation criterion assesses the level to which the remedial alternative reduces the potential toxicity, mobility, or volume of wastes or contaminants based on the following factors:

1. Treatment process used and materials treated;
2. Amount of hazardous materials destroyed or treated;
3. Degree of expected reductions in toxicity, mobility, or volume;
4. Degree to which treatment is irreversible; and
5. Type and quantity of residuals remaining after treatment.

The lead contaminated soils have already been removed and shipped off-site. Accordingly, the toxicity, mobility and volume of lead contained in the remaining soils have already been reduced to acceptable levels. The proposed groundwater remedy is expected to result in less toxicity, mobility, and volume of contaminated groundwater over the next seven years.

7. Short-Term Effectiveness:

This criterion addresses the remedial alternative=s effect on human health and the environment during the construction and implementation phase of the remedial action. Short-Term effectiveness is based on the following four factors:

1. Protection of community during remedial actions;
2. Protection of the workers during remedial actions;
3. Potential for adverse impacts on the environment due to implementing the remedial action; and
4. Time required to meet the remedial response objectives.

No further construction is needed to implement the proposed remedy. Therefore there will not be any adverse short-term impacts to the community, such as dust or odors. Likewise, there will not be any exposures to construction workers.

8. Implementability:

The no further action remedial option for soils poses no implementation difficulties. No Federal, State or local permits are anticipated for the remedy. The groundwater remedial option poses no implementation difficulties. No Federal, State or local permits are anticipated for the remedy.

9. Cost:

The proposed remedy has an estimated cost of $385,000.

PUBLIC PARTICIPATION

U.S. EPA solicits input from the community on the proposed remedy. If requested, U.S. EPA will hold a public meeting in Kendallville, Indiana to discuss the alternatives and any additional remedial actions the public proposes. The Administrative Record for the Reclaimers, Inc. is available at the following locations:

Kendallville Public Library
221 South Park Avenue
Kendallville, Indiana 46755-1740
(260) 343-2010

U.S. EPA, Region 5
Waste, Pesticides and Toxics Division Records Center
77 West Jackson Boulevard, 7th Floor
Chicago, Illinois 60604
(312) 353-5821
Hours: Mon-Fri, 8a.m. - 4p.m.

After considering the comments received, U.S. EPA will summarize the comments and its responses to the comments, and specify and document the selected remedy in a Final Decision/Response to Comments document. This document will be incorporated into the Administrative Record. To send written comments or obtain further information, contact:

John Nordine
U.S. Environmental Protection Agency
77 West Jackson Boulevard, DE-9J
Chicago, Illinois 60604
(312) 353-1243
E-mail nordine.john@epa.gov

ATTACHMENT

A - **Index to the Administrative Record**

Attachment A

Index to the Administrative Record
Reclaimers, Inc.
Kendallville, Indiana
IND984894527

Document Number	Date	Description/Author (if applicable)
RI-001	Sept. 1992	Administrative Order of Consent. Author: U.S. EPA
RI-002	Sept. 1992	RCRA Closure Plan Waste Pile. Author: Advanced Pollution Technologies
RI-003	Oct. 1995	Revised Closure Plan Wire Chop Waste Pile. Author: Advanced Pollution Technologies
RI-004	Dec.1996-1997	Environmental, Remedial Work Plan. Author: Philips Service Corp.
RI-005	May 1998	Certification of the Completion of Treatment of the Post-LDR Waste Volume report RI-006. Author: Philips Service Corp.
RI-006	Nov. 1999	Environmental Indicator Determinations CA-725 determination for Human Exposures under Control. Author: U.S.EPA
RI-007	1st, 2nd, and 3rd 2003	Quarterly Groundwater Monitoring Results. Author: Philips Service Corp.
RI-008	June 2004	CA-750 is for Migration of Contaminated Groundwater Under Control. Author: U.S. EPA
RI-009	Feb. 2004	Liability Evaluation, Author: Philips Service Corp
RI-010	Aug. 2003	Alternate Groundwater Monitoring System Reclaimers Inc. Author: Philips Service Corp.
RI-011	Oct. 2003	Re: Approval with Modifications Alternate Groundwater Monitoring System Reclaimers Inc. Author: IDEM
RI-012	May 2006	Letter April 19th Meeting at IDEM Office. Author: Philips Service Corp.
RI-013	August 2007	Revision to Closure Plan. Author: Philips Service Corp.