

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

September 2003

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Former Edgewater Steel Limited  
Facility Address: 300 College Avenue, Oakmont, PA 15139  
Facility EPA ID #: PAD074966789

- 1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

X	If yes - check here and continue with #2 below.
	If no - re-evaluate existing data, or
	if data are not available skip to #6 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"<sup>1</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater		X		
Air (indoors)		X		
Surface Soil (e.g., <2 ft)			X	
Surface Water			X	
Sediment			X	
Subsurface Soil (e.g., >2 ft)			X	
Air (outdoors)		X		

	If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support documentation demonstrating that these "levels" are not exceeded.
	If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.
X	If unknown (for any media) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

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**See following pages for Rationale and Reference(s).**

1 "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

## Current Human Exposures Under Control

### Response to Rational/Reference, Question 2

#### *Groundwater*

The following summarizes the most recent groundwater sampling events reported in PADEP and USEPA files (1984, 1986, 1987, 1991, and 1992 for the former EAF Dust Landfill and 1995 and 1996 for the Demolition Waste Landfill, both located on the southern portion of the site. Groundwater investigations were only conducted for two SWMUs; the former EAF Dust Landfill and the Demolition Waste Landfill.

While documented spills were predominantly released to the Allegheny River, it is unknown if tanks or equipment leaked or continue to leak, releasing primarily petroleum products to the groundwater and/or soil. Plants 1, 2, and 3 each have sump pits below the floors, which captured leaking fluid from hydraulic machinery like lathes and presses. The fluid contained in these pits was previously pumped to the Dravo<sup>®</sup> oil/water separator. However, a Draft Summary of Environmental Concerns dated June 11, 1998 and the Plant Manager reported that the sumps are not connected to the Dravo<sup>®</sup> oil/water separator unit and are pumped out periodically by a contractor. The Plant Manager was unsure of the capacity of the sump pits, however, he did indicate that they require cleaning frequently. The Plant Manager reported at the time of the EI site inspection that the sumps were clean shortly before the EI site inspection and they would soon need to be cleaned again. Plant operations ceased in November 2001, and it is unknown if equipment containing petroleum products were drained before the plant shutdown, or if they continue to leak. During the EI site inspection, the electrical panel of one press was observed to be covered with hydraulic oil due to leakage

The integrity of these sump pits is unknown because they could not be inspected during the EI site inspection, as entering them required OSHA Confined Space certification. Due to the fact that the plant structures are believed to have been constructed in the 1920s, the integrity of these pits is questionable.

The current owner of the property where these sumps/pits are located, the Regional Industrial Development Corp. (RIDC), has been emptying the contents of several of these units. Several more need to be emptied.

#### FORMER EAF DUST LANDFILL

The monitoring well system for the former EAF dust landfill consisted of one upgradient monitoring well (MW-906) and four downgradient monitoring wells (MW-903, MW-904A, MW-904B, and MW-905), which were installed between 1982 and 1983.

1984 (Letters from the Edgewater Steel Corporation to USEPA, dated September 4, 1984 and April 17, 1985)

Groundwater samples were collected from each of the former EAF dust landfill monitoring wells

in August 1984 for gross alpha and beta analysis and in December 1984 for radium-226 and radium-228 analysis. Alpha and beta results ranged from 0.19 to 5.8 pCi/l and 0.28 to 29 pCi/l, respectively. Radium-226 and radium-228 concentrations ranged from -0.2 to 0.7 pCi/l

1986 and 1987 (1986 CME and Groundwater Results Submitted to PADEP on July 30, 1987)

- 1,1,1-trichloroethane – ranged from non detect to 118 ppb
- Trichloroethylene – ranged from 2.7 to 150 ppb
- 1,1-dichloroethylene – ranged from non detect to 1.7 ppb
- Arsenic – non detect to 0.010 ppm
- TOX – less than 10 to 100 ppb

## Current Human Exposures Under Control

### **Response to Rational/Reference, Question 2**

1991 (CME results per a PADEP Internal Memo, dated May 23, 1991)

A CME conducted by PADEP at the site on March 13, 1991 (Internal PADEP Memo, dated May 23, 1991) indicated that MW-906 contained elevated concentrations of manganese, iron, and aluminum, which PADEP reported to be typical of water in alluvial aquifers. Barium was the only potential contaminant of concern, which was detected above detection limits, but even at its highest level (637 ppb in MW-906) was below the MCL of 1.0 mg/l. PADEP indicated that elevated levels of sodium and chlorides may be attributed to a sewer line which transverses the property.

1992 (Sampling results submitted to PADEP by Halliburton NUS)

Halliburton NUS collected groundwater samples in August 1992 from MW-903, MW-904A, MW-904B, MW-905, and MW-906. Concentrations of arsenic, barium, and chromium were detected below 1 ppm. TOX concentrations ranged from 14 to 88 ppm.

PADEP allowed the Edgewater Steel Corporation to cease groundwater monitoring activities for the former EAF dust landfill because: 1) it could not be properly monitored due to hydraulic influences from nearby Plum Creek and 2) Edgewater removed the EAF dust and contaminated soil, thus clean closing the unit. Earth Sciences Consultants, on behalf of Edgewater, closed monitoring wells MW-903 through MW-906. Therefore this area posed no further groundwater contamination potential. Fay Construction currently owns the property where this unit was located.

### **Demolition Waste Landfill**

The monitoring well system for the demolition waste landfill consisted of one upgradient monitoring well (MW-902), and three downgradient monitoring wells (MW-901, MW-907, and MW-908).

Sampling results submitted to PADEP by Edgewater Steel Limited for the fourth quarter of 1995 and the first and second quarters of 1996

Compound	MW-901			MW-902			MW-907		
	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996
Calcium	58	77	78	55	56	61	44	47	53
Lead	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0	<0.0

	5	5	5	5	5	5	5	5	5
Sodium	70	77	78	24	22	25	18	16	17
Chloride	41	63	58	51	46	48	32	44	43
pH	6.7	6.6	6.5	6.7	7.2	6.9	5.8	7.3	6.0
Dissolved Solids	580	760	760	310	340	370	240	310	320

Groundwater sampling results submitted to PADEP by Edgewater Steel Limited for the fourth quarter of 1995 and the first and second quarters of 1996 indicated the following results (ppm) for a production well identified as ESG-07, which was sampled as part of the quarterly demolition waste landfill sampling activities:

## Current Human Exposures Under Control

### **Response to Rational/Reference, Question 2**

<b>Compound</b>	<b>ESG-07</b>		
	<b>4<sup>th</sup> Q 1995</b>	<b>1<sup>st</sup> Q 1996</b>	<b>2<sup>nd</sup> Q 1996</b>
Calcium	15	20	19
Lead	<0.05	<0.05	<0.05
Sodium	29	29	27
Chloride	60	57	53
pH	8.5	8.1	8.5
Dissolved Solids	130	170	150

It is unclear if well ESG-07 is MW-907.

This landfill was properly closed in place. Although PADEP has not received groundwater monitoring results since 1996, historical data does not suggest that the landfill caused a groundwater contamination problem. Fay Construction currently owns the property where this landfill is located.

#### ***Air (indoors)***

No information pertaining to indoor air quality was found in USEPA or PADEP files, however, an internal Edgewater Steel Limited Memo dated May 5, 2001 indicated that the plant has a “large asbestos situation” in the old steam boilers, and possibly asbestos contaminated furnaces, ceiling tiles, and floor tiles, none of which are SWMUs. Operations have ceased at the site due to bankruptcy; hence there are currently no workers at the site. The plant is undergoing selective demolition, so any asbestos concerns should be addressed as part of any demolition work.

#### ***Surface Soil***

Heavily stained surface soil (with oil) was observed in the area of two former No. 2 fuel oil ASTs (410,000 and 620,000) located on the southwestern portion of the site during the EI site inspection. The earthen dike and clay liner have been removed, as the sandy surface soil appeared to have been disturbed in this area. No soil sampling data was found for samples that may have been collected after the tanks were removed. Soil sampling is being done as part of a site-wide (RIDC property) characterization under PA Act 2. Any soils that need to be excavated to meet 25 Pa Code Chapter 250 state-wide health or site specific standards as part of any property redevelopment/Act 2 liability release will further address this potential concern.

#### ***Surface Water – Allegheny River and Plum Creek***

The site maintained five NPDES outfalls; four which discharged to the Allegheny River and one that discharged to the Plum Creek. The sources of the discharge included stormwater,

wastewater (from the oil/water separator), non-contact cooling water, and stormwater runoff. The rocks on the bank of the Allegheny River were observed to be stained during the EI site inspection.

NPDES Inspection Reports from 1992 through 2000 indicated numerous discharge limitation exceedance, violations, and visible impacts to the Allegheny River (including sheen and stained rocks).

Several releases to the Allegheny River also occurred from 1949 to 2001 and included hydraulic oil, No. 6 fuel, untreated water (bypassed the oil/water separator), quench oil, and petroleum distillates.

A Groundwater Assessment Report prepared by the NUS Corporation in September 1986 included sampling of the Allegheny River and Plum Creek. The sewer lines and Plum Creek were reported to be contributing sources of the background BOD, TOC, TOX, and nitrate-nitrogen detected in MW-906 and occasionally other wells, like MW-903. The NUS Corporation reported that the concentrations of the BOX, TOC, TOX, and nitrate-nitrogen in MW-906 were probably a result of the sewers and Plum Creek, which have high levels of these parameters. However, the facility operations ceased in 2001 and the current plant property owner, RIDC, has been removing wastes, including oils, from various sumps, pits and the former wastewater treatment plant, thus taking measures to minimize any continued threat of releases to surface water.

### ***Sediment***

No information pertaining to sediment investigation or remediation was found in USEPA or PADEP files; however, a sheen was produced near NPDES Outfall 002 in June 1994 when sediments and algae were disturbed.

### ***Subsurface Soil***

No information pertaining to subsurface soil investigation or remediation was found in USEPA or PADEP files. However, according to a letter from the Edgewater Steel Corporation to PADEP, dated January 21, 1993, oil-contaminated soil was planned for removal outside the 12,000-pound Hammer area and the Boiler House with an estimated completion date of March 1, 1993. It is unclear if this soil was removed.

Contaminated soil was discovered and removed in the following areas:

- Contaminated soil was removed at the time the EAF dust landfill was closed; however, no sampling data was found in PADEP or USEPA files.
- Contaminated soil (possibly as much as 13 drums) was removed during the closure (in place) of a 3,500-gallon quench oil UST located inside Plant 1 under the floor of the washroom at the northeast corner of the building (September 2000).



- 14.03 tons of contaminated soil were removed during the removal of a 6,000-gallon gasoline UST, located just outside the yard office (it is unclear to the writer if the yard office is synonymous with the main office). Sample collected directly following the UST removal contained 730 ppb of benzene, 340 ppb of ethylbenzene, 700 ppb of naphthalene, 3,800 ppb of toluene, and 8,200 ppb of xylenes. Samples were reported to be clean once the 14.03 tons of soil were removed from the excavation (September 1999).

A heating oil of unknown capacity was removed from just outside the office building (the writer assumes the main office). Closure information was requested from the owner of the facility, as was not provided at the time these forms were completed, however, no information was found in PADEP or USEPA files indicating that post excavation soil sampling was performed (removal date unknown, possibly September 1999).

### ***Air (outdoors)***

According to the October 1996 Revised Major Source Operating Permit Application submitted to the Allegheny County Health Department by Oakmont Steel, Inc., the facility operated 12 boilers, a 6,000-gallon gasoline UST (which has been removed), and fugitive dust emission sources (electric arc welders, solvent in several parts washers, and paved and unpaved roads and parking areas). These sources were reported to emit PM10, SO<sub>2</sub>, CO, NO<sub>x</sub>, VOC, lead, chromium, nickel, and manganese (the last three were emitted in small quantities from some of the boilers). An update to the Title V Permit Application was submitted in September 6, 2000, which indicated a significant decrease in emissions due to the permanent closure of the boilers and the melt shop (including the EAF) and reduced natural gas usage.

No evidence of permit exceedances was found in PADEP, USEPA, or Allegheny County Health Department files. Operations have ceased at the site due to bankruptcy; hence the site is not currently generating air emissions.

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3. Are there complete pathways between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

<b>"Contaminated Media"</b>	<b>Human Receptors</b>						
	<u>Recreation</u>	<u>Residents Food<sup>1</sup></u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Transit</u>	<u>Passengers</u>
Groundwater	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Air (indoors)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>		<u>N/A</u>	<u>N/A</u>
<u>N/A</u>							
Soil (surface, e.g., <2 ft)		<u>No</u>	<u>No</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>No</u>
Surface Water	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
Sediment	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
Soil (subsurface e.g., >2 ft)		<u>No</u>	<u>No</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>No</u>
Air (outdoors)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
<u>N/A</u>							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors -- spaces for Media which are not "contaminated" as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations, some potential "Contaminated" Media – Human Receptor combinations (Pathways) do not have check spaces ("\_\_\_\_\_"). While these combinations may not be probable in most situations, they may be possible in some settings and should be added as necessary.

X \_\_\_\_\_ If no (pathways are not complete for any contaminated media –receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet) to analyze major pathways.

\_\_\_\_\_ If yes (pathways are complete for any "Contaminated" Media – Human Receptor combination) – continue after providing supporting explanation.

\_\_\_\_\_

If unknown (for any "Contaminated" Media – Human Receptor combination) – skip to #6 and enter "IN" status code.

\_\_\_\_\_

**Rationale and Reference(s):**

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**See following page for response to Rationale and Reference(s).**

2 Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

## **Current Human Exposures Under Control**

### **Response to Rational/Reference, Question 3**

Exposure pathways are not complete for workers for any media due to the fact plant operations ceased in November 2001 due to bankruptcy. The current owner, RIDC, is removing remaining wastes/chemicals in the plant. Exposure pathways may be complete for workers regarding surface and subsurface soils. However, it is expected that workers will wear appropriate protective equipment during soil removal/excavation activities. The site is reasonably secured against trespassers. Since the site is not operating, there are no wastewater discharges to surface water and RIDC is removing wastes remaining in plant sumps, pits and the former wastewater treatment plant.

Numerous releases from 1949 to 2001 to the Allegheny River have been documented (primarily petroleum products). The Oakmont Borough Water Department indicated that drinking water for the community is primarily withdrawn from the Allegheny River; however, several residences are believed to use private wells. The plant, however, has ceased operations.

The RIDC property is currently undergoing site-wide characterization for redevelopment and possible Act 2 liability release. Any environmental media that needs to be removed to meet 25 Pa Code Chapter 250 statewide health/site specific standards will be done via this process. All remaining waste in the plant that may pose any direct contact human exposure threat will likewise be removed before any associated Act 2 liability release is granted for the plant. As a result of inspections on March 20 and September 12, 2003 PADEP identified several remaining areas that RIDC must address, in terms of waste removal. RIDC has been made aware of PADEP's concerns in this regard. PADEP will continue to monitor RIDC's progress in addressing these concerns until the concerns have been adequately resolved.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**" (i.e., potentially<sup>2</sup> "unacceptable" levels) because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

\_\_\_\_\_ If no (exposures (can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) – skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) – continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If unknown (for any complete pathway) – skip to #6 and enter "IN" status code. (*In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.*)

Rationale and Reference(s): \_\_\_\_\_

3 If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a Human Health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

\_\_\_\_\_ If yes (all "significant" exposures have been shown to be within acceptable limits) – continue and enter a "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be "unacceptable") – continue and enter a "NO" status code after providing a description of each potentially "unacceptable" exposure.

\_\_\_\_\_ If unknown (for any potentially "unacceptable" exposure) – continue and enter "IN" status code. (*In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.*)

Rationale and Reference(s):

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**Current Human Exposures Under Control  
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE – Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Former Edgewater Steel Limited facility, EPA ID PAD 074 966 789 at 300 College Avenue, Oakmont, PA** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

X

\_\_\_\_\_

NO – "Current Human Exposures" are NOT "Under Control."

\_\_\_\_\_

IN - More information is needed to make a determination.

\_\_\_\_\_

Completed by: Carl Spadaro Date September 30, 2003

Carl Spadaro

Facilities Engineer – Waste Management

PADEP-SWRO

Supervisor:  Date September 30, 2003

Michael G. Forbeck, PE

Facilities Manager – Waste Management

PADEP - SWRO

Locations where References may be found:

References have been appended to the Environmental Indicator Report and can also be found at PADEP's Pittsburgh office, the Allegheny County Health Department's office in Pittsburgh and USEPA's Region III office.

Contact telephone and e-mail numbers:

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(phone #) 412-442-4157

(e-mail) [cspadaro@state.pa.us](mailto:cspadaro@state.pa.us)

**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

September 2003

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Former Edgewater Steel Limited
Facility Address: 300 College Avenue, Oakmont, PA 15139
Facility EPA ID #: PAD 074 966 789

- 1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

Table with 3 rows and 2 columns. Row 1: X | If yes - check here and continue with #2 below. Row 2: | If no - re-evaluate existing data, or Row 3: | If data are not available skip to #8 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).



**Migration of Contaminated Groundwater Under Control**  
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2. Is **groundwater** known or reasonably suspected to be "contaminated"<sup>3</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action anywhere at, or from, the facility?

	If yes – continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
X	If no – skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
	If unknown (for any media) – skip to #8 and enter "IN" status code. <i>(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)</i>

Rationale and Reference(s):

**See following pages for Rationale and Reference(s).**

4 "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

## **Migration of Contaminated Groundwater under Control**

### **Response to Rational/Reference, Question 2**

The following summarizes the most recent groundwater sampling events reported in PADEP and USEPA files (1984, 1986, 1987, 1991, and 1992 for the former EAF Dust Landfill and 1995 and 1996 for the Demolition Waste Landfill, both located on the southern portion of the site). Groundwater investigations were only conducted for two SWMUs; the former EAF Dust Landfill and the Demolition Waste Landfill.

While documented spills were predominantly released to the Allegheny River, it is unknown if tanks or equipment leaked or continue to leak, releasing primarily petroleum products to the groundwater and/or soil. Plants 1, 2, and 3 each have sump pits below the floors, which captured leaking fluid from hydraulic machinery like lathes and presses. The fluid contained in these pits was previously pumped to the Dravo<sup>®</sup> oil/water separator. However, a Draft Summary of Environmental Concerns dated June 11, 1998 and the Plant Manager reported that the sumps are not connected to the Dravo<sup>®</sup> oil/water separator unit and are pumped out periodically by a contractor. The Plant Manager was unsure of the capacity of the sump pits, however, he did indicate that they require cleaning frequently. The Plant Manager reported at the time of the EI site inspection that the sumps were clean shortly before the EI site inspection and they would soon need to be cleaned again. Plant operations ceased in November 2001, and it is unknown if equipment containing petroleum products were drained before the plant shutdown, or if they continue to leak. During the EI site inspection, the electrical panel of one press was observed to be covered with hydraulic oil due to leakage.

The integrity of these sump pits is unknown because they could not be inspected during the EI site inspection, as entering them required OSHA Confined Space certification. Due to the fact that the plant structures are believed to have been constructed in the 1920s, the integrity of these pits is questionable.

The current owner of the property where these sumps/pits are located, the Regional Industrial Development Corp. (RIDC), has been emptying the contents of several of these units. Several more need to be emptied.

#### **Former EAF Dust Landfill**

The monitoring well system for the former EAF dust landfill consisted of one upgradient monitoring well (MW-906) and four downgradient monitoring wells (MW-903, MW-904A, MW-904B, and MW-905), which were installed between 1982 and 1983.

#### **1984 (Letters from the Edgewater Steel Corporation to USEPA, dated September 4, 1984 and April 17, 1985)**

Groundwater samples were collected from each of the former EAF dust landfill monitoring wells in August 1984 for gross alpha and beta analysis and in December 1984 for radium-226 and radium-228 analysis. Alpha and beta results ranged from 0.19 to 5.8 pCi/l and 0.28 to 29 pCi/l, respectively. Radium-226 and radium-228 concentrations ranged from -0.2 to 0.7 pCi/l

#### **1986 and 1987 (1986 CME and Groundwater Results Submitted to PADEP on July 30, 1987)**

- 1,1,1-trichloroethane – ranged from non detect to 118 ppb
- Trichloroethylene – ranged from 2.7 to 150 ppb
- 1,1-dichloroethylene – ranged from non detect to 1.7 ppb
- Arsenic – non detect to 0.010 ppm
- TOX – less than 10 to 100 ppb

## Migration of Contaminated Groundwater under Control

### **Response to Rational/Reference, Question 2**

1991 (CME results per a PADEP Internal Memo, dated May 23, 1991)

A CME conducted by PADEP at the site on March 13, 1991 (Internal PADEP Memo, dated May 23, 1991) indicated that MW-906 contained elevated concentrations of manganese, iron, and aluminum, which PADEP reported to be typical of water in alluvial aquifers. Barium was the only potential contaminant of concern, which was detected above detection limits, but even at its highest level (637 ppb in MW-906) was below the MCL of 1.0 mg/l. PADEP indicated that elevated levels of sodium and chlorides may be attributed to a sewer line which transverses the property.

1992 (Sampling results submitted to PADEP by Halliburton NUS)

Halliburton NUS collected groundwater samples in August 1992 from MW-903, MW-904A, MW-904B, MW-905, and MW-906. Concentrations of arsenic, barium, and chromium were detected below 1 ppm. TOX concentrations ranged from 14 to 88 ppm.

PADEP allowed the Edgewater Steel Corporation to cease groundwater monitoring activities for the former EAF dust landfill because: 1) it could not be properly monitored due to hydraulic influences from nearby Plum Creek and 2) Edgewater removed the EAF dust and contaminated soil, thus clean closing the unit. Earth Sciences Consultants, on behalf of Edgewater, closed monitoring wells MW-903 through MW-906. Therefore this area posed no further groundwater contamination potential. Fay Construction currently owns the property where this unit was located.

### Demolition Waste Landfill

The monitoring well system for the demolition waste landfill consisted of one upgradient monitoring well (MW-902), and three downgradient monitoring wells (MW-901, MW-907, and MW-908).

Sampling results submitted to PADEP by Edgewater Steel Limited for the fourth quarter of 1995 and the first and second quarters of 1996

Compound	MW-901			MW-902			MW-907		
	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996	4 <sup>th</sup> Q 1995	1 <sup>st</sup> Q 1996	2 <sup>nd</sup> Q 1996
Calcium	58	77	78	55	56	61	44	47	53
Lead	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sodium	70	77	78	24	22	25	18	16	17
Chloride	41	63	58	51	46	48	32	44	43
pH	6.7	6.6	6.5	6.7	7.2	6.9	5.8	7.3	6.0
Dissolved Solids	580	760	760	310	340	370	240	310	320

Groundwater sampling results submitted to PADEP by Edgewater Steel Limited for the fourth quarter of 1995 and the first and second quarters of 1996 indicated the following results (ppm) for a production well identified as ESG-07, which was sampled as part of the quarterly demolition waste landfill sampling activities:

**Migration of Contaminated Groundwater under Control**

**Response to Rational/Reference, Question 2**

<b>Compound</b>	<b>ESG-07</b>		
	<b>4<sup>th</sup> Q 1995</b>	<b>1<sup>st</sup> Q 1996</b>	<b>2<sup>nd</sup> Q 1996</b>
Calcium	15	20	19
Lead	<0.05	<0.05	<0.05
Sodium	29	29	27
Chloride	60	57	53
pH	8.5	8.1	8.5
D i s s o l v e d Solids	130	170	150

It is unclear if well ESG-07 is MW-907.

This landfill was properly closed in place. Although PADEP has not received groundwater monitoring results since 1996, historical data does not suggest that the landfill caused a groundwater contamination problem. Fay Construction currently owns the property where this landfill is located.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"<sup>4</sup> as defined by the monitoring locations designated at the time of this determination)?

	If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination" <sup>2</sup> )
	If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination" <sup>2</sup> ) - skip to #8 and enter "NO" status code, after providing an explanation.
	If unknown - skip to #8 and enter "IN" status code. <i>(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)</i>

Rationale and Reference(s):

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5 "Existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all contaminated groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

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4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

		If yes - continue after identifying potentially affected surface water bodies.
		If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.
		If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

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**Migration of Contaminated Groundwater Under Control**  
**Environmental Indicator (EI) RCRIS Code (CA750)**  
Page 5

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>5</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

		If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration <sup>3</sup> of <u>key</u> contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.
		If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration of <u>each</u> contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations <sup>3</sup> greater than 100 times their appropriate "level(s)," and if estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing. .
		If unknown - enter "IN" status code in #8. <i>(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)</i>

Rationale and Reference(s):

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- 6 As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>6</sup>)?

	<p>If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.</p>
	<p>If no - (the discharge of "contaminated" groundwater can not be shown to be "<b>currently acceptable</b>") – skip to #8 and enter a "NO" status, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems..</p>
	<p>If unknown – skip to 8 and enter "IN" status code. <i>(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)</i></p>

7

**Rationale and Reference(s):**

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7 Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

8 The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**



7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

	If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."
	If no - enter "NO" status code in #8.
	If unknown - enter "IN" status code in #8. <i>(In order to present a more complete representation of the status of the site, the reviewer has chosen not to skip to #6.)</i>

Rationale and Reference(s):


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**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

X	YE - Yes, "Migration of contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the <b>Former Edgewater Steel Corporation facility, EPA ID PAD 074 966 789 at 300 College Avenue, Oakmont, PA.</b> Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.
	NO - Unacceptable migration of contaminated groundwater is observed or expected.
	IN - More information is needed to make a determination.

Completed by: Carl Spadaro Date September 30, 2003  
Carl Spadaro  
Facilities Engineer – Waste Management  
PADEP – SWRO

Supervisor:  Date September 30, 2003  
Michael G. Forbeck, PE  
Facilities Manager – Waste Management  
PADEP - SWRO

Locations where References may be found:

References have been appended to the Environmental Indicator Report and can also be found at PADEP's Pittsburgh office, the Allegheny County Health Department's office in Pittsburgh and USEPA's Region III office.

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