

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Current Human Exposures Under Control

Facility Name: Sechan Limestone Industries Inc.
Facility Address: RD #1, Portersville, PA 16051
Facility EPA ID #: PAD 00 286 0377

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?

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 Control" 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”¹ 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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u> X </u>	___	___	The downgradient well I-S has continually detected lead above the PA Statewide Health Standard for residential use (0.005 ppm) and from time to time exceeded EPA action level for lead (0.015 ppm). However, over the years the lead concentration at I-S has remained below 0.020 ppb. All other wells have shown significant improvements and are currently below EPA regulatory maximum contaminant levels.
Air (indoors) ²	___	<u> X </u>	___	No structures are located on or adjacent to the disposal units. Thus indoor air is not applicable.
Surface Soil (e.g., <2 ft)	___	<u> X </u>	___	All disposal units with wastes are capped with top soil or geosynthetic material.
Surface Water	___	<u> X </u>	___	Untreated groundwater was released to Slippery Rock Creek in the early eighties. Due to low levels of metal concentrations in the untreated groundwater and the release was stopped before significant impact was done to the creek, natural attenuation was the primary clean-up mechanism.
Sediment	___	<u> X </u>	___	No record of contamination.
Subsurf. Soil (e.g., >2 ft)	<u> X </u>	___	___	All disposal units are closed and contain waste in place.
Air (outdoors)	___	<u> X </u>	___	No record of contamination.

_____ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

 X 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.

_____ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Groundwater:

Hazardous Waste Units C-1 & C-2:

The C-1 area was a portion of a former limestone strip pit, which had been lined with natural clay/soil originally removed during the mining process.

The C-1 area received waste between August 1981 and August 1983. Groundwater contamination attributed to C-1 was first documented in 1983. The C-1 area was closed in 1985 when groundwater contamination for chromium was detected. Eventually some waste was removed to check the natural clay/soil liner in the cell. The removed waste was placed on the south edge. Then a synthetic cap was placed over the C-1 area. Monitoring well, C-1, is located through the waste in area C-1. Monitoring well C-1 is not currently monitored.

The C-2 area, also a portion of a former limestone strip pit, is lined with natural clay/soil. It received wastes from between September 1983 and the summer of 1985. The waste types disposed in C-1 and C-2 areas included neutralized spent pickle liquor sludge, electric arc furnace emission control dust (K061), waste water treatment sludge from electroplating (F006), electroplating bath sludge and EP Toxic wastes containing barium, cadmium, chromium and lead.

Additionally, the C-2 pit received petroleum-refining sludge (mixed with soil) and asbestos containing wastes. Groundwater data from 1984 and 1985 indicated continued contamination.

In April 1985, Sechan Limestone Industries was ordered to cease accepting waste in the C-1 & C-2 areas. In 1986 PADER required Sechan to initiate capping of both C-1 and C-2 with geosynthetic, because the earthen caps were allowing infiltration of rainwater into the waste. A Closure plan for C-1 and C-2 was approved in May 1987. Closure activities were completed by mid-summer in 1987. Closure certification, post-closure care and monitoring requirements for the C areas were established in a June 29, 1987 Consent Agreement, approved in Commonwealth court on Dec. 16, 1987. This CO was modified on October 23, 1996. The post-closure care and monitoring activities set forth in the 1996 CO are the present groundwater monitoring requirements.

Seven of the eight the monitoring wells, downgradient and upgradient, have indicated that the constituent concentrations of concern are below EPA MCLs. Although one downgradient well (I-S) from the former disposal pits has detected lead concentrations slightly above EPA action level (0.015 ppm) from time to time, the lead concentrations at this well has consistently been below 0.020 ppm over the last several quarters. Taking into consideration that offsite downgradient residential wells have not been affected, and monitoring wells located further downgradient of the former disposal pits do not detect levels of concern, the potential lead plume that lies beneath the site is believed to be contained within the facility boundaries. All eight monitoring wells will continue to be sampled on a quarterly basis.

Pre-RCRA and Non-hazardous Waste Units A, A-1, C-3 (a.k.a. old C area), F and G:

From historical groundwater data, PADEP determined that these areas no longer require groundwater monitoring.

Surface and Subsurface Soil:

All units were closed with waste in place. Units C-1 & C-2 have geosynthetic caps with vegetated cover soil. All other units have soil caps that are vegetated. Surface soils are not impacted. Waste is contained and is present in the subsurface soil of these former disposal

Air (Indoors & Outdoors), Surface Water, and Sediment:

There has been no record of releases that are above protective risk-based "levels" by the facility for air releases primarily because releases at this site are to soil and groundwater only. Surface water (Slippery Rock Creek) may have been impacted by past untreated groundwater releases. Due to low levels of metal concentrations in the untreated groundwater and the release was stopped before significant impact was done to the creek, natural attenuation was the primary clean-up mechanism.

(References: CERCLA Preliminary Assessment Report, PADEP 1996 Consent Order and Agreement, groundwater monitoring quarterly reports, Sechan History Report)

Footnotes:

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).

² 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.

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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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	_no_	_no_	_no_	_no_			_no_
Air (indoors)	---	---	---				
Soil (surface, e.g., <2 ft)	---	---	---	---	---	---	---
Surface Water	---	---			---	---	---
Sediment	---	---			---	---	---
Soil (subsurface e.g., >2 ft)				_no_			_no_
Air (outdoors)	---	---	---	---	---		

Instructions for Summary Exposure Pathway Evaluation Table:

- Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
- 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):

Groundwater:

Taking into consideration that offsite downgradient residential wells have not been affected, and monitoring wells located further downgradient of the former disposal pits do not detect levels of concern, the potential lead plume that lies beneath the site is believed to be contained within the facility boundaries.

Subsurface soil:

Wastes that are contained in the subsurface soils of the former disposal units are capped with a geosynthetic liner, top soil and vegetation. There is not a direct pathway to human exposures to the subsurface soils.

(References: CERCLA Preliminary Assessment Report, PADEP 1996 Consent Order and Agreement, groundwater monitoring quarterly reports, Sechan History Report)

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” 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

Rationale and Reference(s):

⁴ 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 “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 “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

Rationale and Reference(s):

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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):

 X 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 **Sechan Limestone Industries Inc.** facility, EPA ID # **PAD 00 286 0377** located at **RD #1, Portersville, PA 16051** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

_____ NO - "Current Human Exposures" are NOT "Under Control."

_____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 06-14-01
(print) Khai M. Dao _____
(title) Remedial Project Manager _____

Supervisor (signature) _____ Date 06-14-01
(print) Paul Gotthold _____
(title) PA. Operations Branch Chief _____
(EPA) EPA, Region 3 _____

Locations where References may be found:

PADEP
Waste Management Program
230 Chestnut Street
Meadville, PA 16335

U.S. EPA
RCRA Corrective Action
1650 Arch Street
Philadelphia, PA 19103

Contact telephone number and e-mail:

PADEP Contact: Sigma C. Toth
814-332-6843
Toth.Sigma@state.pa.us

USEPA Contact: Khai M. Dao
215-814-5467
dao.khai@epa.gov