DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

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

Current Human Exposures Under Control

Facility	Name: Address:	Pacificorp, Idaho Falls Pole Yard Facility 2200 Leslie Avenue, Idaho Falls, Idaho
Facility	EPA ID#:	IDD000602631
1.	groundwater, sur	relevant/significant information on known and reasonably suspected releases to soil, face water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste ts (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this
	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.

<u>Definition of "Current Human Exposures Under Control" EI</u>

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" 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)?

Air (indoors) ² X Surface Soil (e.g., <2 ft) X Subsurface Water X Subsurf. 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 supporting documentation demonstrath 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	Yes _X_	<u>No</u>	?	Rationale / Key Contaminants
Surface Soil (e.g., <2 ft)X					
Surface Soil (e.g., <2 ft) X	Air (indoors) ²				
Subsurf. Soil (e.g., >2 ft) X	Surface Soil (e.g., <2	ft)	_X_		
Subsurf. Soil (e.g., >2 ft) X Air (outdoors) X	Surface Water		_X_		
Subsurf. Soil (e.g., >2 ft)X Air (outdoors) X	Sediment		_X_		
Air (outdoors) X	Subsurf. Soil (e.g., >2	ft)	_X_		
If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrathat 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):	Air (outdoors)				
Reference(s): Creosote residual remaining in the basalt bedrock are the key contaminates on site. Residuals remain are about a 1x10 ⁻⁴ risk and are subject to RCRA/HWMA corrective_	sup	porting doc	umentati	on.	
Creosote residual remaining in the basalt bedrock are the key contaminates on site. Residuals remain are about a 1x10 ⁻⁴ risk and are subject to RCRA/HWMA corrective_	Rationale and				
Residuals remain are about a 1x10 ⁻⁴ risk and are subject to RCRA/HWMA corrective_	Reference(s):				
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_
	Residuals remai	n are about	a 1x10 ⁻⁴	risk and a	re subject to RCRA/HWMA corrective_

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).

²Recent 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 **<u>Human Receptors</u>** (Under Current Conditions)

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_	-			uman Receptor
r any "Contam status code	ninated" Med	dia - Human	Receptor co	mbination) - skip
r	continue after any "Contam status code Worker expo	continue after providing s any "Contaminated" Me status code Worker exposure to con	continue after providing supporting exany "Contaminated" Media - Human status code Worker exposure to contaminated gr	s are complete for any "Contaminated" Media - He continue after providing supporting explanation. any "Contaminated" Media - Human Receptor contatus code Worker exposure to contaminated groundwater activities and operation of a pump and treat syst

³ Indire	ect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.
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"signif greater accepta	e exposures from any of the complete pathways identified in #3 be reasonably expected to be "icant" (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1 in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the able "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude ps even though low) and contaminant concentrations (which may be substantially above the
-	able "levels") could result in greater than acceptable risks)?
	X 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" sta 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 a 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
Ration	ale and
	nce(s):
	Worker exposure to contaminates are not expected to be significant because theintensity, frequency, and duration to exposure is low and does not result inunacceptable risk

	
	

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 "signific	ant" 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 <u>and</u> 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

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6.		-	ent Human Exposures Under Control EI event code
			er) signature and date on the EI determination below
	(and attach appr	ropriate supporting documentation as we	ell as a map of the facility):
	X_	review of the information contained in are expected to be "Under Control" at	s Under Control" has been verified. Based on a this EI Determination, "Current Human Exposures" the _Pacificorps, Idaho Falls EPA ID #IDD000602631, located at
			current and reasonably expected conditions. This
			hen the Agency/State becomes aware of significant
		NO - "Current Human Exposures" are	e NOT "Under Control."
		IN - More information is needed to	make a determination.
	Completed by	(cignoture)	Data 2 20 01
	Completed by	(signature) (print) Dinah Reaney	
		(title) Environmental Analyst	
	Supervisor	(signature)	Date4-6-01
		(print) Robert E. Bullock	
		(title) Hazardous Waste Permitting	
		(EPA Region or State) IDEQ	
	Locations where	e References may be found:	
		a public information request: www2.sta	administrative record and supporting files available te.id.us/deq/About DEQ/public_records.htm
		Reference RCRA files designated PA	xxx
	Contact telepho	ne and e-mail numbers	
	(name))Robert Bullock	
		e #)208-373-0502	
		l)rbullock@deq.state.id.us	

FINAL NOTE: THE HUMAN EXPOSURES ELIS 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

Interim Final 2/5/99

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

Migration of Contaminated Groundwater Under Control

Facility	Name: Address: EPA ID#:	Pacificorp, Idaho Falls Pole Yard Facility 2200 Leslie Avenue, Idaho Falls, Idaho IDD000602631
1.	groundwater med	relevant/significant information on known and reasonably suspected releases to the ia, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units ted 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 #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.

<u>Definition of "Migration of Contaminated Groundwater Under Control" EI</u>

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 ground water 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 Environmental Indicator (EI) RCRIS code (CA750)

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2.	"levels" (i.e., app	known or reasonably suspected to be "contaminated" above appropriately protective plicable promulgated standards, as well as other appropriate standards, guidelines, eria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?
	X	If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
		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 - skip to #8 and enter "IN" status code.
	Residuals r	sidual remaining in the basalt bedrock are the key contaminates on site. emain are about a 1x10 ⁻⁴ risk and are subject to RCRA/HWMA corrective_ e Pacificorps December 2000 Post-Closure Permit

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 appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

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

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	expected to rema	on of contaminated groundwater stabilized (such that contaminated groundwater is ain within "existing area of contaminated groundwater" as defined by the monitoring ated at the time of this determination)?
	X_	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" ²).
		If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination" ²) - skip to #8 and enter "NO" status code, after providing an explanation.
		If unknown - skip to #8 and enter "IN" status code.
	Rationale and Reference(s):	
the De	cember 2000 RCF	RA/HWMA Post-Closure Permit for Pacificorp

² "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) Page 4

1.	Does "contaminated" groundwater discharge into surface water bodies?				
	If yes - continue after identifying potentially affected surface water bodies.				
	X_ 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):				
	Contaminated groundwater has been contained within the property boundaries and does not migrate off-site to surface water bodies. See the December 2000 Post-Closure Permit for Pacificorp				

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

5.	_	s the discharge of "contaminated" groundwater into surface water likely to be "insignificant " (i.e., the naximum concentration ³ of each contaminant discharging into surface water is less than 10 times their				
	ndwater "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 ³ of key 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 judgement/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 ³ 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 ³ greater than 100 times their appropriate groundwater "levels," the 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.				
	Rationale and					
	Reference(s):					

	³ 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) Page 6			
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 ⁴)?			
	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, ⁵ 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.			
	If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.			
	If unknown - skip to 8 and enter "IN" status code.			

Reference(s):	Rationale and			
	Reference(s):			

⁴ 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.

⁵ 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)

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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?"				
	X 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.				
	Rationale and Reference(s):				
	Plume stabilization measurements/monitoring are performed on a semi-annualbasis on-site. See Pacificorp RCRA/HWMA Post Closure Permit				

	Migration of Contaminated Groundwater Under Control Environmental Indicator (EI) RCRIS code (CA750) Page 8
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 _Pacificorp, Idaho Falls

	NO - Unacceptable migration of contaminated groundwater is observed or expected.				
	IN - More information is needed to make	a determin	nation.		
Completed by	(signature) (print) Dinah Reaney (title) Environmental Analyst				
Supervisor	(signature) (print) Robert E. Bullock (title) Hazardous Waste Permitting (EPA Region or State) IDEQ				
Pa via		d.us/deq/A	bout DEQ/public_red	cords.htm	
	_Reference RCRA files designated PAxxx				
Contact telephor	ne and e-mail numbers				
(phone	Robert Bullock #)208-373-0502)rbullock@deq.state.id.us				