

Facility Name:        FMC Pocatello  
Facility Address:        Box 4111, Pocatello ID 83202         
Facility EPA ID #:        IDD 070929518

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Revised September 1, 2004

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

Current Human Exposures Under Control

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 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, GPRAs). 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).

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 **Current** well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective

Action (from SWMUs, RUs or AOCs)?

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

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	<u>   </u>	<u>   </u>	<u>&gt;MCL - Arsenic /Antimony/Fluoride/Manganese and Phosphorus standard see SF ROD.</u>
Air (indoors) <sup>2</sup>	<u>   </u>	<u>X</u>	<u>   </u>	
Surface Soil (e.g., <2 ft)	<u>X</u>	<u>   </u>	<u>   </u>	<u>Calciner pond solids (SF has proposed capping but remedy has not been implemented. Soils on off-site area are contaminated from facility deposition.</u>
Surface Water	<u>   X</u>	<u>   </u>	<u>   </u>	<u>Groundwater discharges to surface water. The surface water TMDL for phosphorus is exceeded.</u>
Sediment	<u>   </u>	<u>X</u>	<u>   </u>	
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	<u>   </u>	<u>   </u>	<u>Subsurface soil contamination in pond areas and at depth in many areas of the facility. Soils contaminated with elemental phosphorus, metals.</u>
Air (outdoors)		<u>X</u>	<u>   </u>	<u>A number of activities have been taken to address air releases including: the installation of continuous monitoring of phosphine and hydrogen cyanide using FTIR systems at the RCRA ponds with open water; implementation of work rules and monitoring and response protocols to ensure that workers and the public are not exposed to phosphine and hydrogen cyanide emissions; and installation of temporary covers on a number of RCRA ponds.</u>

    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):

Superfund ROD. The State of Idaho has developed a TMDL for phosphorus for surface water downgradient of the facility. Concentrations of total phosphorus exceed the TMDL. It is believed that contamination in the groundwater is entering the surface water via springs causing these exceedances.

July 31, 2003 update: Contaminants continue to exceed TMDL standards in the surface water. The exact source of the contamination from groundwater to surface water has not yet been quantitatively assessed. However, in May 2003 additional groundwater monitoring wells were installed on the FMC site. The facility intends to sample these wells in August 2003. The source in the area where these wells were installed is being addressed by closing the surface impoundments with caps. EPA is in the process of negotiating an agreement with FMC to further characterize and delineate other sources of contamination to soils and the groundwater.

Notes:

<sup>1</sup> “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).

<sup>2</sup> 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.

3. Are there **complete pathways** between “contamination” (verified or reasonably suspected) 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>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	<u>Yes</u>	<u>No</u>	<u>No</u>	<u>No</u>	No	no	<u>No</u>
Air (indoors)	<u>No</u>	<u>No</u>	<u>No</u>	no	No	no	no
Soil (surface, e.g., <2 ft)	<u>Yes</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
Surface Water	<u>Yes</u>	<u>Yes</u>	No	No	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
Sediment	<u>No</u>	<u>No</u>	no	no	<u>No</u>	<u>No</u>	<u>No</u>
Soil (subsurface e.g., > ft)	No	Yes	no	<u>Yes</u>	Yes	<u>No</u>	No
Air (outdoors)	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>	<u>Yes</u>	yes	No

**Facility Name:**       FMC Pocatello  
**Facility Address:**       Box 4111, Pocatello ID 83202  
**Facility EPA ID #:**       IDD 070929518

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**

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.

- 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).
- X   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): June 14, 2002 The facility has stopped producing elemental phosphorus so emissions from the plant no longer pose a risk to off-site human receptors. The onsite surface impoundments continue to emit phosphine but are monitored and exposures to humans off-site are controlled by evacuation if necessary. There are many on-site sources of contamination that are potential complete pathways for future human exposure. These areas will undergo additional remedial investigation pursuant to an Order EPA is negotiating with the facility.

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

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**<sup>4</sup> (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)?

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” 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): June 14, 2002 - If the RCRA Pond Management Plan is followed to control exposures to emissions from the surface impoundments exposures should not be significant to off-site receptors from air releases from the plant. If appropriate health and safety precautions are made (radiation exposures minimized, phosphine monitors used) exposures will not be unacceptable. FMC controls worker exposures through limiting access to specific work areas, rigorous health and safety training and appropriate health and safety equipment. Under the current use scenario the exposures are not expected to be significant. However, the facility is no longer operational and FMC is in the process of identifying a future use for the site, this is the purpose of additional investigation .

<sup>4</sup> 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.

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

X 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): If appropriate health and safety precautions are made (radiation exposures minimized, phosphine monitors used) exposures will not be unacceptable. FMC controls worker exposures through limiting access to specific work areas, rigorous health and safety training and appropriate health and safety equipment. Under the current use scenario the exposures are not expected to be significant. However, the facility is no longer operational and FMC is in the process of identifying a future use for the site, this is the purpose of additional investigation .

Facility Name: \_\_\_\_\_ FMC Pocatello  
Facility Address: \_\_\_\_\_ Box 4111, Pocatello ID 83202 \_\_\_\_\_  
Facility EPA ID #: \_\_\_\_\_ IDD 070929518

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**

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" 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) Linda Meyer Date 7/31/03  
(print) \_\_\_\_\_  
(title) RCRA Permit Writer

Supervisor (signature) \_\_\_\_\_ Date \_\_\_\_\_  
(print) Rick Albright  
(title) Director, Office of Waste and Chemical Management  
(EPA Region or State) Region 10

Narrative including locations where References may be found:

SF Record of Decision June 1998/ RCRA Consent Decree October 1998  
The SF administrative record can be found in the Idaho State University Library as well as at EPA's offices, 1200 Sixth Avenue, Seattle. In addition to characterization data in the Superfund files, EPA has RCRA files which includes a RCRA Part B permit application. The RI/FS is available at (WEB SITE HERE).

Contact telephone and e-mail numbers

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(phone #) 206-553-6636  
(e-mail) meyer.linda@epa.gov

**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

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

Migration of Contaminated Groundwater Under Control

Facility Name: FMC Idaho LLC  
Facility Address: P.O. Box 4111  
Facility EPA ID #: IDD070929518

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?

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.

**Definition of "Migration of Contaminated Groundwater Under Control" EI**

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).

2. Is **groundwater** known or reasonably suspected to be “**contaminated**” above appropriately protective “levels” (i.e., 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.

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.

Rationale and Reference(s):

The Remedial Investigation Report (RI) for the EMF Site (1996) and EPA’s Record of Decision (ROD) for the EMF Superfund Site (1998) found that groundwater in the uppermost aquifer has been impacted by releases from former unlined waste management units at the FMC facility (former unlined ponds 1E through 6E, 00S through 9S, and the Slag Pit wastewater collection sump) and by the gypsum stack and the former east overflow pond at the adjacent J.R. Simplot facility. Ongoing RCRA Interim Status detection monitoring by FMC at lined hazardous waste management units within the FMC facility has found no impact on groundwater from these waste management units.

The RI found that the nature of groundwater impacts within the FMC facility include elevated arsenic (highest mean concentration at 0.19 mg/L), nitrate (highest mean concentration at 24.7mg/l), and selenium (highest mean concentration at 0.29 mg/L). The RI also found that the nature of groundwater impacts within the Simplot facility include elevated arsenic (highest mean concentration at 0.61mg/L), nitrate (mean concentration up to 74.3 mg/L) and selenium (mean concentration up to 0.15 mg/L). The RI found the extent of groundwater impact to be limited to properties owned by FMC and the J.R. Simplot Company, with the exception of intervening railroad and highway right-of-ways.

The RI also found that groundwater flowing from portions of the FMC facility merges with groundwater flowing from portions of the Simplot facility within the joint fenceline area of the two facilities. The RI did not attribute releases to particular sources in characterizing the nature and extent of groundwater impact within the joint fenceline area and in the properties owned by FMC and Simplot north of Highway 30.

Footnotes:

<sup>1</sup> “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).



3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”<sup>2</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.

Rationale and Reference(s):

Groundwater flow pattern analysis and groundwater quality samples collected during the EMF remedial investigation from numerous demonstrated that the extent of groundwater impacted by releases from unlined waste management units within the FMC and J.R. Simplot facilities was restricted to the FMC and Simplot facilities south of Highway 30 and properties owned by FMC and Simplot north of Highway 30 and intervening railroad and highway right-of-ways. The RI also found that groundwater flow from portions of the FMC facility and Simplot facilities converge within the joint fenceline area of the two facilities and area north of Highway 30, and that groundwater impacted from all of the EMF-related source areas discharges to the Portneuf River between Swanson Road Springs and Batiste Spring. These springs are on the eastern edge of a parcel of land owned by FMC north of Highway 30.

The EMF RI also found that the vertical extent of impacted groundwater was largely limited to the shallow aquifer. In the deeper aquifer the only elevated constituent levels have been slightly elevated concentrations of major ions (potassium and sulfate) in only two wells screened in the deeper aquifer.

FMC has measured groundwater elevations on a quarterly basis in 76 wells uniformly distributed between the area upgradient from source areas and Batiste Spring to monitor groundwater flow rates and directions. FMC has collected samples on a quarterly basis from 35 RCRA groundwater quality wells under its RCRA Interim Status Groundwater Monitoring Program. In addition, 24 CERCLA wells uniformly distributed between the area upgradient from source areas and Batiste Spring have been sampled on a semi-annual basis since the RI. FMC has submitted these data to EPA.

These post-RI data collected by FMC show that the horizontal extent of impacted groundwater beneath FMC-owned properties has not expanded beyond the area delineated by the RI and documented in the ROD. The post-RI data also indicate that concentrations in the deeper aquifer have not increased. These sampling points and monitoring data are further described in Attachment A.

Post-RI groundwater sampling data for delineating the eastern extent of EMF-facility related impact are based on monitoring wells located on Simplot properties. Attachment A provides updated site-wide groundwater isoconcentration contour plots of selected constituents from FMC and Simplot wells.

<sup>2</sup>“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.

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

**X** 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):

The RI found that all of the EMF-facility impacted groundwater discharges to the Portneuf River between Swanson Road Springs and Batiste Spring.

5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration<sup>3</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)?

  X   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 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<sup>3</sup> of each 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 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):

Idaho Department of Environmental Quality conducted a study of the surface water at springs where the groundwater discharges to the surface water. This study concluded that the majority of contamination to the surface water is from the Simplot facility. Simplot and FMC have nearly identical contaminants of concern. Simplot (not a RCRA facility) is in the process of implementing a groundwater containment remedy in order to mitigate impacts to the surface water.

<sup>3</sup>As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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>4</sup>)?

  X   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<sup>5</sup>, 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.

Rationale and Reference(s):

See response above.

<sup>4</sup> 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.

<sup>5</sup> 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.

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):

The EMF Record of Decision (1998) calls for FMC to monitor groundwater and implement legally enforceable controls to prevent use of contaminated groundwater. The ROD calls for Simplot to install a network of groundwater extraction wells to contain migration of contamination from the gypsum stack; reduce the areal extent of shallow groundwater contamination; prevent migration of contamination above MCLs and risk-based levels into lands not owned by Simplot and FMC; and monitor groundwater to determine the effectiveness of the extraction system and other source control measures. The ROD also requires FMC to implement contingent groundwater extraction/treatment if periodic evaluation of the concentration of key parameters and comparisons of constituent levels in samples from unimpacted wells with levels in samples from impacted wells indicates that contaminated groundwater is migrating beyond FMC-owned property and into adjoining springs or the Portneuf River. FMC signed a proposed CERCLA consent decree in 1999 to implement these actions but EPA subsequently withdrew the proposed CERCLA consent decree for further evaluation.

FMC will continue to collect monitoring data consistent with its RCRA Interim Status Groundwater Monitoring Program and voluntary CERCLA Groundwater Monitoring Program until or unless other procedures become applicable.

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 FMC Idaho LLC facility, EPA ID # IDD070929518, located at Pocatello, Idaho. 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    (signature) \_\_\_\_\_                      Date \_\_\_\_\_  
                          (print) \_\_\_\_\_  
                          (title) \_\_\_\_\_

Supervisor        (signature) \_\_\_\_\_                      Date \_\_\_\_\_  
                          (print) \_\_\_\_\_  
                          (title) \_\_\_\_\_  
                          (EPA Region or State) \_\_\_\_\_

Locations where References may be found:

The following references can be found at the US EPA Region 10 Library at 1200 6<sup>th</sup> Avenue, Seattle, Washington. They can also be found in the Government Documents Department (Eastern Michaud Flats (EMF) Superfund Site and the FMC Corporation sections) at the Idaho State University Library, 850 South 9<sup>th</sup> St., Pocatello, Idaho:

- Record of Decision for the Eastern Michaud Flats Superfund Site, Pocatello, Idaho. US Environmental Protection Agency, 1998.
- Remedial Investigation for the EMF Superfund Site. Prepared by Bechtel Environmental, Inc for the FMC Corporation and the J.R. Simplot Company, 1996.
- Baseline Human Health and Environmental Risk Assessment for the Eastern Michaud Flats site. Prepared by Ecology and Environment, Inc. for the US Environmental Protection Agency, 1996.
- Evaluation of Water Quality Impacts Associated with ASTARIS and Simplot Phosphate Ore Processing Facilities, Pocatello, Idaho. August 22, 2001. Idaho Department of Environmental Quality Technical Service Division.

Contact telephone and e-mail numbers

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