

ENVIRONMENTAL INDICATOR (EI) RCRIS CODE (CA725)

Current Human Exposures Under Control

Facility Name: MEW DATA ARMS/BEKCO (Current Owner)
Facility Address: 1120 Spring Street, Klamath Falls, Oregon
Facility EPA ID #: ORD 034595355

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 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)?

“Contaminated” Media Yes No ? Rationale / Key Contaminants

“Contaminated” Media	Yes	No	?	Rationale / Key Contaminants
Groundwater		✓		
Air (indoors)		✓		
Soil (surface, e.g., <2 ft)		✓		
Surface Water		✓		
Sediment		✓		
Soil (subsurface e.g., >2 ft)		✓		
Air (outdoors)		✓		

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.

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):

From 1983 to 1991, Mew Data Arms (MDA) produced metal parts for the computer industry. Metal finishing processes included solvent cleaning/degreasing, and chemical casting of aluminum. From approximately 1984 through approximately February 1986, MDA discharged spent plating solutions to the building floor drain. The building floor drain discharged to an offsite ditch. Subsequent soil and sediment samples showed the ditch had been impacted by volatile cyanide and chromium. In August 1986, MDA developed a removal action and closure plan. Eight monitoring wells were installed along the sides of the ditch. In 1988, contaminated soil and sediment was removed from the ditch and disposed of offsite. MDA went out of business in 1992, and the site was purchased by Becko Corporation, which operates Oregon Manufacturing Services (OMS), in 1995. OMS is the current operator at the facility and manufactures high-tech satellite communications equipment as a CEG. All the equipment and containerized waste from the MDA operation has been removed.

In February 1998, OMS entered into a voluntary cleanup agreement with DEQ. OMS conducted a site investigation from February 1998 to December 1998. The investigation targeted the first 200 feet of the ditch where contamination was believed to be highest. The investigation also involved sampling all of the site monitoring wells. The investigation results are presented in the consultant's report dated February 23, 1999, which showed all the soil, surface water, and groundwater results to be non-detect except for chromium detections found in the soil within the ditch. The levels of chromium ranged from 4 mg/kg to 440 mg/kg. These results were below the EPA Region 9 industrial standard of 450 mg/kg, which was used to screen the site. Based on these results, DEQ accepted that the site levels met the acceptable risk levels and were protective of the environment. A No Further Action letter was provided to OMS on May 13, 1999, after a public comment period in April 1999.

*SEE 02/23/99 "Site Investigation, Former Mew Data Arms site, Klamath Falls, Oregon," (prepared by EC&A, Inc.)

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)

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

- 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):

Footnotes:

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

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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) MEW DATA ARMS** facility, EPA ID #**ORD034595355**, located at **1120 Spring Street, Klamath Falls, Oregon** 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)

Barb Puchy

Hazardous Waste Specialist

Supervisor:

(Signature)

(Date)

Anne Price

(Print Name)

Manager, Hazardous Waste Policy and Program Development

(Title)

Oregon Department of Environmental Quality

(EPA Region or State)

Locations where References may be found:

BEND DEQ- RCRA Hazardous Waste Files
2146 NE. 4th Street, Suite 104, Bend, OR 97701

THE DALLES DEQ
400 E. Scenic Drive, Building 2, The Dalles, OR 97058

Contact telephone and E-mail numbers:

BRIAN MCCLURE

(Name)

541-298-7255, Ext. 32

(Phone Number)

(E-Mail)

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.

ENVIRONMENTAL INDICATOR (EI) RCRIS CODE (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **MEW DATA ARMS/BEKCO (Current Owner)**
Facility Address: **1120 Spring Street, Klamath Falls, Oregon**
Facility EPA ID #: **ORD 034595355**

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).

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2. Is **groundwater** known or reasonably suspected to be “**contaminated**”¹ 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):

From 1983 to 1991, Mew Data Arms (MDA) produced metal parts for the computer industry. Metal finishing processes included solvent cleaning/degreasing, and chemical casting of aluminum. From approximately 1984 through approximately February 1986, MDA discharged spent plating solutions to the building floor drain. The building floor drain discharged to an offsite ditch. Subsequent soil and sediment samples showed the ditch had been impacted by volatile cyanide and chromium. In August 1998, MDA developed a removal action and closure plan. Eight monitoring wells were installed during the characterization and investigation around the ditch. A sampling event in 1991 showed chromium levels detected in 3 of the wells up to 0.010 ppm; cyanide was detected in 6 wells up to a level of 0.021 ppm. The drinking water aquifer in the area is 100 feet or more in depth. A well field in the City of Klamath Falls supplies drinking water to the site. The City-owned wells are approximately 2 miles northwest of the ditch and would have not been impacted by the contamination at this site. MDA went out of business in 1992, and the site was purchased by Becko Corporation which operates Oregon Manufacturing Services (OMS) in 1995.

OMS conducted a site investigation from February 1998 through December 1998. The investigation involved sampling all of the site monitoring wells. The investigation results are presented in the consultant's report dated February 23, 1999, showed all groundwater results to be non-detect. Based on the results of the investigation, a No Further Action letter from DEQ was provided to OMS on May 13, 1999, after a public comment period in April 1999.

*SEE 02/23/99 "Site Investigation, Former Mew Data Arms site, Klamath Falls, Oregon," (prepared by EC&A, Inc.)

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).

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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 ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

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 ecosystems), 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 ecosystems, 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 ecosystems.

If unknown - skip to 8 and enter “IN” status code.

Rationale and Reference(s):

Footnotes:

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 ecosystems.

**Migration of Contaminated Groundwater Under Control
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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).
- 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 **(Former) MEW DATA ARMS** facility, EPA ID #**ORD034595355**, located at **1120 Spring Street, Klamath Falls, Oregon**. 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)

Barb Puchy

Hazardous Waste Specialist

Supervisor:

(Signature)

(Date)

Anne Price

(Print Name)

Manager, Hazardous Waste Policy and Program Development

(Title)

Oregon Department of Environmental Quality

(EPA Region or State)

Locations where References may be found:

BEND DEQ- RCRA Hazardous Waste Files
2146 NE. 4th Street, Suite 104, Bend, OR 97701

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400 E. Scenic Drive, Building 2, The Dalles, OR 97058

Contact telephone and E-mail numbers:

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