

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

### RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725) Current Human Exposures Under Control

**Facility Name:** Northrop Grumman Systems Corporation – Electric Systems Sector Facility  
**Facility Address:** 7323 Aviation Boulevard, Linthicum Heights, MD 21090  
**Facility EPA ID #:** MDD 000 619 718

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**

The Northrop Grumman site is located adjacent to Baltimore-Washington International Airport, along Fort Meade Road (Route 170) in Linthicum Heights, Anne Arundel County, Maryland. Surrounding land use includes the Baltimore-Washington International Airport, industrial and business parks, wooded areas, and some residential areas.

Northrop Grumman is a manufacturer of defense electric components, principally for the military. Operations at this site began in 1951; prior to 1951, the area was a large fruit orchard. Much of the process consists of bench top operations that result in numerous satellite accumulation areas throughout the facility. The manufacturing procedures include a circuit board shop, model shop, plating shop, paint shop, assembly, soldering, adhesives, and ink labeling, among others. In addition, the facility has a number of planes used to test the electronic components. They have two hangars to park the planes and mechanics to maintain the planes. The facility encompasses 129 acres with almost 2 million square feet under cover. Current employment is approximately 5,500 primarily working one 8-hour shift 5 days per week. However, personnel and security are on-site 24 hours per day, 7 days per week. The facility is highly secure utilizing Department of Defense levels of security.

The following names have been associated with the facility based on changes in corporate ownership:

- 1951 - 1996 – Westinghouse Electric Corporation purchased property from Friendship Airport
- 1996 - Current – Northrop Grumman Systems Corporation, Electric Systems Sector

The facility operates as a large quantity generator (LQG) storing waste for less than 90 days. Waste is managed in containers at these areas and numerous satellite accumulation points. At one time, the facility operated a permitted storage facility, but it is no longer in use.

The facility submitted the original Part A Permit Application in 1980 under the name Westinghouse Electric Corporation to USEPA. A single Part A Application was submitted in 1996 due to changes in ownership at the facility. The first Part B Permit Application was submitted in approximately 1993.

The facility operates under, or has operated, under the following permits:

- MD National Pollution Discharge Elimination System (NPDES) Discharge Permit No. 06-DP-0181 for Outfalls 001 through 006 to a public storm sewer and the Stony Run
- Baltimore County Discharge Permit No. WWDP 1565
- MDE CHS Permit No. A232 which ceased in April 1998
- Air Operating Permit No. 03-0250 for several boilers, generators, and processes
- Oil Operations Permit for 11 oil storage tanks
- Scrap Tire Permit

### **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).

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

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

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater		X		No evidence of releases to groundwater.
Air (indoors) <sup>2</sup>		X		No evidence of complaints or violations.
Surface Soil (e.g., <2 ft)		X		There have been various releases to surface soils of hydraulic fluid, PAO, and diesel fuel. In each case it has been noted that the spills were contained and cleaned up. No other releases to surface soils were noted in the files.
Surface Water		X		Facility operates under MD NPDES Discharge Permit No. 06-DP-0181 and Baltimore County Discharge Permit No. WWDP 1565 for Outfalls 001 through 006 to a public storm sewer, and the Stony Run. Two non-compliances have been recorded. On 7/1/05 there was a total residual chlorine excursion reported at 0.29 mg/l and 0.27 mg/l, which is above the allowed limit of 0.1 mg/l. The January 2008 Discharge Monitoring Report (DMR) noted a pH of 9.2 at Outfall 002. No documentation was found indicating releases to surface water.
Sediment		X		No evidence of releases to sediment was found in files reviewed.
Subsurf. Soil (e.g., >2 ft)		X		All waste management units are located on asphalt paving or concrete pads with appropriate secondary containment. No evidence of any releases to subsurface soils were noted in the files.
Air (outdoors)		X		No evidence of complaints or violations.

- 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):

**Groundwater** – There has never been cause to install monitoring wells on the property and therefore groundwater quality is not known. No evidence of releases to groundwater was found in files reviewed nor from an onsite inspection.

**Indoor and Outdoor Air** – Surrounding land use includes the Baltimore-Washington International Airport, industrial and business parks, wooded areas, and some residential areas. However, there are no residential or recreational areas within 1,000 feet of the facility boundary. There has been no evidence or known reported air releases or air concerns at the property.

The facility operates under Air Operating Permit No. 03-0250, with several boilers, generators, and processes. No exposure pathway controls or release controls for air media exist. No evidence of complaints or Air Permit violations were found in the files reviewed.

**Surface Soil** – The following spills occurred to surface soils at the facility. All have been reportedly contained and cleaned up:

- Diesel Tank Area (AOC B) – Unit consisted of a 100-gallon aboveground diesel fuel tank with a leaking spigot. The spigot was leaking diesel fuel onto the approximate 5' x 5' asphalt area, which resulted in staining.
- Truck Hydraulic Spill in Parking Lot (AOC D) – Release was contained and cleaned up on May 8, 1996.
- Blueberry Hill PAO Spill (AOC E) – Release was contained and cleanup on October 9, 2009.
- ATF PAO Spill (AOC F) – Release was contained and cleaned up on May 7, 1996.
- EGW Spill Antenna Building (AOC G) – Release was contained and cleaned up on September 9, 2008.
- Soil Removal from AIMS Construction (AOC H) – Soil was removed and disposed off-site between July and September, 2008.
- Diesel Fuel Spill from Boiler UST (AOC I) – Spill was contained and cleaned up.
- Other numerous small releases have occurred at the facility, each are noted to have been contained and cleaned up.

All waste is managed and stored either indoors or outdoors in asphalt paved or concrete containment areas.

**Sediment/Surface Water** – Surface water flow from the site feeds Stony Run approximately one-tenth of a mile to the west of the facility, and Kitten Branch approximately one-tenth of a mile to the northeast of the facility. Kitten Branch flows into Stony Run; this stream flows into the Patapsco River, which feeds the Chesapeake Bay. Stony Run and Kitten Branch are close to the property boundaries. Small areas by the north central and northeastern corners of the property lie within the hundred year floodplain of Kitten Branch. There are no buildings or operational areas within the floodplains.

Outfalls 001 and 006 go to the public storm sewer and Stony Run, which is classified as Use I waters (protected for water contact recreation, fishing, aquatic life, and wildlife). No evidence of releases to surface water or sediment was found in files reviewed.

**Subsurface Soil** - No evidence was found in files reviews indicating subsurface soil contamination currently exists. The majority of the SWMUs are located indoors on concrete pads. SWMUs which were located outdoors and had reported releases or our incidents are as follows:

- SWMU No. 2 – Former Waste Paint Satellite Accumulation Area – The Waste Paint Satellite Accumulation Area was located outdoors along the south wall of the West Building adjacent to the FJ Paint Shop. This unit was renovated in 1983. The unit was an approximately 29-foot long by 17-foot wide concrete pad that was surrounded by asphalt. The pad had a 5 to 8- inch concrete berm, a metal roof, and was sloped to the south to an 8-cubic foot sealed concrete sump. Prior to 1983 the unit was an asphalt lot with no secondary containment. Waste paint materials from the FJ Paint Shop were collected at this unit in 55-gallon drums that were on pallets. The wastes were stored here for a period of less than 90 days. When the drums were full they were transferred to the Former RCRA Regulated Area 1 (SWMU No. 46). The unit managed paint wastes, lacquer thinners and solvent including 1, 1, 1-trichloroethane, toluene, and acetone.

One spill of an unknown amount of emulsified cutting oil has been reported at this unit. The spill was contained and cleaned up with absorbent material.

- SWMU No. 42 – Hazardous Hangar Satellite Accumulation Area - The Original Hangar Satellite Accumulation Area is located in an enclosed sheet metal storage shed adjacent to the east side of the Hangar and has been in operation since 1953. The unit consists of an approximately 6-foot by 3-foot concrete floor area inside the shed. Waste oil generated from aircraft maintenance operations in the Hangar is collected in a 55-gallon drum, on a plastic pallet in this unit. The drum is transferred to RCRA-Regulated Area 1 (SWMU No. 46) every 2 weeks. Prior to the start-up of this unit, flammable and non-flammable hazardous waste liquids generated from aircraft maintenance operations were collected in one 55-gallon drum here. The facility ceased using this unit for hazardous waste storage in 1990 following a complaint issued by the MDE, which indicated the unit did not have adequate secondary containment.

- SWMU No. 46 – Former RCRA-Regulated Storage Area No.1 - This RCRA-Regulated unit was located outside the West Building. The unit consisted of an approximately 64-foot by 99-foot diked concrete slab. The unit had a total permitted capacity of 580 55-gallon drums. The pad was divided into four drainage areas, each of which has a floor drain which drained to a 10-inch line. The 10-inch line ran outside the containment area and stopped adjacent to the RCRA Storage Area Sump (SWMU No. 49). The 10-inch line was closed and locked with a butterfly valve. This valve connected to the Sanitary Sewer System (SWMU No. 65). Collected rainwater determined not to be contaminated was discharged through this valve to the Sanitary Sewer System.

The unit accepted waste from all the Satellite Accumulation Areas (SWMU Nos. 1 - 45) located throughout the plant. It was the final placement area before wastes were disposed of off-site by either Safety-Kleen or Thermochem. The fenced pad contained designated areas for paint, caustics, scrap metals, chlorinated, flammables, and cutting oil wastes. The Drum Crusher (SWMU No. 50) was located on this pad.

This unit managed corrosive liquid material (contaminated flux, polyamide epoxy catalyst, copper sulfate and water mixture, alkaline curing agents), flammable liquid (resins, coatings, pigments, thinners and paint related material), polychlorinated biphenyls, flammable solid (solidified paint pigments and thinners), zinc chromate primers, ammonium hydroxide solution, waste oil, waste 1,1,1-trichloroethane, and waste cyanide solution.

This unit began managing waste in 1980. This SWMU is no longer operated; this area is currently used for HWDC Scrap Metal Storage. According to the 1991 Phase II RCRA Facility Assessment Report, one release of emulsified cutting oil occurred and was cleaned up with absorbent material. The date of this spill is not known.

**Current Human Exposures Under Control**

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

**Summary Exposure Pathway Evaluation Table**

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

<b><u>“Contaminated” Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
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):

<sup>3</sup> 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”**<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)?
- 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):

<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.

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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 (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 Northrop Grumman Systems Corporation, Electric Systems Sector Facility, EPA ID # MDD 000 619 718, located at 7323 Aviation Boulevard, Linthicum Heights, MD 21090. 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) _____ (print) <u>Erich Weissbart</u> (title) <u>Project Manager</u>	Date	<u>12/30/10</u>
Supervisor	(signature) _____ (print) <u>Luis Pizarro</u> (title) <u>Associate Director</u> <u>EPA Region III</u>	Date	<u>12/30/10</u>

Locations where References may be found:

US EPA Region III  
Land & Chemicals Division  
1650 Arch Street  
Philadelphia, PA 19103

Contact telephone and e-mail numbers

(name) Erich Weissbart  
(phone #) 215-814-3284  
(e-mail) weissbart.erich@epa.gov