

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Facility Name: AGC Chemicals Americas Inc., formerly Asahi Glass Fluoropolymers USA, Inc.
Facility Address: 229 East 22nd Street Bayonne, NJ 07002
Facility EPA ID#: NJD001787944

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 EIs 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 objectives of the RCRA Corrective Action program, the EIs 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 is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and does 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 Determination status codes should remain in the 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).

FACILITY INFORMATION

The Asahi Glass Fluoropolymers USA, Inc. (Asahi) facility (Facility), formerly owned and operated by ICI Americas Inc. (ICI), is a manufacturing facility that currently produces polytetrafluoroethylene (PTFE), also known by the trade name Fluon®. The Facility is located in Bayonne, Hudson County, New Jersey on approximately 36 acres of land (Attachment 1). The Facility is located in an area known as Constable Hook, a peninsula bounded by the Kill Van Kull to the south and the Upper New York Bay to the north and east. The Constable Hook area immediately surrounding the Asahi Facility is highly developed and heavily industrialized. The property on which the Asahi Facility is located was formerly a portion of what was then a 323-acre ExxonMobil petroleum refinery site (Site), and is referred herein as the ICI Subsite or the Facility. The former ExxonMobil Site consists of three properties currently owned by the following: 1) ExxonMobil, 2) International Matex Tank Terminals (IMTT), and 3) Asahi, aka the ICI Subsite (the property now owned by Asahi was owned formerly by ICI).

ICI began operations on the ICI Subsite in 1965. Prior to 1965, and as early as the late 1880s, the property on which the Facility is now located was owned and operated by ExxonMobil and its predecessors in support of its petroleum refining operations. From 1965 to the present, ICI, Zeneca, Inc. (an ICI subsidiary), and currently Asahi have performed chemical manufacturing at the ICI Subsite. ICI operations consisted of manufacturing chlorinated rubber products (Alloprene[□]) and paraffin wax products (Cereclor[□]) through 1980. Between 1969 and 1986, ICI manufactured vinylisocyanurate resins, isocyanate based polymers, and polyester (Atlac[□]). PTFE has been manufactured at the ICI Subsite from 1969 to the present, first by ICI (until 1999) and since then by Asahi (Ref. 1, 2, and 3). The finished product consists of a liquid dispersion of PTFE packaged in 30-gallon lined containers or granular powders packaged in fiber kegs for shipment to customers for a variety of applications, including chemical resistance valve liners, valve seats, medical tubing, and non-stick pan coatings. The Facility, operations, and property were sold by ICI to Asahi in November 1999. Effective January 1, 2004, in connection with an internal corporate reorganization, Asahi changed its corporate name to AGC Chemicals Americas, Inc (AGCCA).

Various hazardous constituents have been used in manufacturing operations at the ICI Subsite, including ammonia, hydrochloric acid, sulfuric acid, and non-chlorinated ignitable solvents. In addition, limited quantities of lubrication oils have been used for lubricating gearboxes and compressors. Raw materials that have been used in the past, but are no longer used, include styrene (used in manufacture of polyesters), carbon tetrachloride (CTC), trichloroethylene (TCE), toluene, chlorine, and polyisoprene rubber (used in the manufacture of Alloprene[™]), adipic and fumaric acids (used in the manufacture of polyesters), neopentylglycol, hydroquinone, dimethylaniline, tertiarybutylcatechol (used in the Atlac[™] manufacturing process), and chlorine and wax (used in the Cereclor[™] manufacturing process) (Ref. 1, 2, and 3).

As part of the Facility operations, AGCCA runs an on-Site hazardous waste incinerator and maintains a hazardous waste storage pad. A polymerization process at the Facility generated and continues to generate various hazardous waste streams. Hazardous wastes are stored in drums at the hazardous waste storage pad (Solid Waste Management Unit [SWMU] 1). A Part B Permit (EPA ID No. NJD001787944 and New Jersey Permit No. 0901D1HP01) was issued to ICI for

hazardous waste storage (Ref. 1). The permit was transferred to AGCCA upon sale of the Facility in 1999.

An on-Site incinerator (SWMU 10), in operation since 1969, is used to burn two waste streams, distillation tops and bottoms, which are produced in the distillation of crude PTFE. Distillation tops are Resource Conservation and Recovery Act (RCRA) non-hazardous, low boiling gases, which are piped directly to two gas storage vessels. The gas storage vessels in turn are piped to the incinerator. The distillation bottoms are a RCRA hazardous waste and are collected in pressurized cylinders. Forklift trucks are used to transport the cylinders to the incinerator for burning. The Facility maintains a Hazardous Waste Treatment Facility Permit and a Permit to Construct and Operate (Permit and Certificate Application Log Number 1-92-3218 with the New Jersey Department of Environmental Protection [NJDEP]) for the incinerator (Ref. 1).

On March 15, 1990, the United States Environmental Protection Agency (USEPA) issued a HSWA permit to ICI which: 1) required ICI to assess potential releases of hazardous waste and/or hazardous constituents into the soil, groundwater, and/or surface water and sediments at seven solid waste management units (SWMU Nos. 1 through 7); 2) required ICI to determine the extent and rate of migration of petroleum hydrocarbon contamination in soil and groundwater at an eighth SWMU (SWMU No. 8); and 3) granted no further action at SWMU Nos. 9 and 10. In fulfillment of the HSWA permit, ICI conducted a RCRA Facility Investigation (RFI) and submitted the results, findings, and recommendations to the USEPA and the NJDEP (Agencies) in its March 1996 RFI Report. Subsequently, as part of the RFI recommendations, ICI conducted additional investigations to delineate the constituents of concern (COCs) detected in the soils. A Phase II Soils Delineation RFI Report was submitted to the Agencies in April 1999.

The New Jersey Department of Environmental Protection (NJDEP) issued an Administrative Consent Order (ACO) to ExxonMobil in 1991 to address petroleum contamination at the ExxonMobil and IMTT Subsites. ICI later filed suit against ExxonMobil for the petroleum contamination found at the ICI Subsite. As a result of a settlement of that suit, the ExxonMobil ACO was amended in 1998 to include the ICI Subsite. In a July 1998 business transaction, Zeneca Inc. transferred, conveyed, assigned and delivered the current AGCCA, New Jersey Facility to ICI, which triggered New Jersey's Industrial Site Recovery Act (ISRA) (N.J.S.A. 13:1k-et-seq.). In November 1999, ICI sold its Fluoropolymers business and the Bayonne New Jersey Facility to Asahi, a transaction also subjecting the ICI Subsite to ISRA.

ExxonMobil, in accordance with the Amended ACO, is performing a Free Oil Recovery Project (FORP), which addresses the recovery/remediation of the free product beneath the three Subsites (Ref. 4). While ICI maintains responsibility for investigation and remediation of certain constituents related to its former operation, the Amended ACO required ExxonMobil to implement remedial investigations/action measures pursuant to the terms and conditions of the ExxonMobil Amended ACO. Thus, ExxonMobil incorporated all previous investigation results (e.g., RCRA Facility Assessment [RFA], RFI) into its Site-wide Preliminary Assessment/Site Investigation (PA/SI) approach (Ref. 4). Subsequently, responsibility for remediation oversight was transferred to NJDEP pursuant to ISRA. Since that time, ExxonMobil, in cooperation with ICI, has been conducting remedial activities at the ICI Subsite pursuant to the ISRA and in accordance with New Jersey's Technical Requirements for Site Remediation (Technical Requirements) (N.J.A.C. 7:26E). The ISRA Case Number for the ICI Subsite is E98349. Although proceeding under ISRA, the investigation and remediation implemented and to be

implemented at the ICI Subsite meets the requirements and objectives of RCRA applicable to the Subsite. ExxonMobil is conducting investigations on both soil and groundwater contamination at the ICI Subsite; however, ExxonMobil generally is responsible only for remediating contamination associated with its prior use of the ICI Subsite (e.g., petroleum contamination). ExxonMobil operations occurred within four primary areas of the ICI Subsite: the former petroleum storage tanks area (used for aboveground storage of petroleum products), the former New Jersey sales area (used for domestic trade and sale of petroleum products), the former inter-refinery pipeline and pumping station (used to pump petroleum related products between the ExxonMobil facilities in Bayonne and Linden, New Jersey), and the former waste disposal area (northwest lagoon area) (consisting of coal ash that was stored on site and later used as fill, and open ponds and lagoons that were used for temporary storage and/or disposal of waste oils and other petroleum refined waste).

In addition, chromium fill exists on the Facility and is defined as soils containing chromite ore processing residue (COPR). COPR was first identified at the ICI Subsite during site investigations conducted by the NJDEP in 1992. The property has been identified by the NJDEP as Hudson County Chromate Site 141. It is unknown when COPR-containing fill was originally placed at the Site. It is possible that the material was originally used to construct or improve containment berms for aboveground storage tanks, as was done on other portions of the former ExxonMobil Bayonne property to the south. Estimates of past COPR distribution have been made from information about former tank berm locations. The tank berms are no longer present at the Site. More recently, visual indications of COPR have been observed at the ground surface in three areas where interim remedial measure (IRMs) have been installed. The IRMs, which are ground coverings constructed of synthetic liners underlying gravel, are intended to prevent human exposure to chromium in surface soils. Prior to the construction of the IRMs, visual indications of COPR were present at the surface at all three IRM areas. IRM 1 and 2 were installed by the NJDEP in 1995. IRM 1 was delineated based on a grid of 66 surface soil samples analyzed for total chromium. IRM 3 was installed by ICI near the east side of the Warehouse/Office Building. No soil samples are known to have been collected for the design of IRMs 2 and 3.

SUMMARY OF AREAS OF CONCERN

The Preliminary Assessment (August 1999), the Remedial Investigation Work Plan (RIWP) (March 2000), the RIWP Addendum (August 2000), the Remedial Investigation Report (RIR) (August 2001), and the RIR Addendum (January 2004) outlined each area of concern (AOC) identified at the ICI Subsite (Ref. 2, 3, 5, 6, and 7). Ninety-eight AOCs were identified in the original PA, which included the 10 SWMUs defined in the RFI Report (Ref 1). One additional AOC (AOC-R2) was identified during the preparation of the RIWP. Another AOC (AOC-L2) was identified during the preparation of the RIR. To aid in the review and understanding of the AOCs, they have been grouped by type and are outlined in Attachment 2. The information provided in the Attachment 2 lists each of the AOCs, as well as the status of the AOCs as they relate to the NJDEP ISRA process. In addition, a list of the AOCs where the NJDEP Soil Cleanup Criteria (SCC) was exceeded is provided in Attachment 2.

In summary, of the 100 AOCs identified at the ICI Subsite, **seventy-six (76)** have received a No Further Investigation (NFI) designation; no further action was recommended for **four (4)** AOCs

in the RIR Addendum; **fourteen (14)** will be addressed as part of a Remedial Action Workplan (RAW) developed for the ICI Subsite (Ref. 8); **two (2)** AOCs are being addressed by Remedial Action Selection Reports (RASRS)-one completed for an ExxonMobil-related AOC (Ref. 9) and one completed for an ExxonMobil/ICI-related AOC Ref. 10); the investigations at **three (3)** AOCs were deferred by NJDEP until the completion of the FORP (Ref. 3); and **one (1)** AOC will require further delineation efforts.

Currently, the NJDEP has granted what it has termed "no further investigation" (NFI) for several AOCs. NJDEP's unwritten definition of an NFI is that no additional action is required for these AOCs, but due to the presence of petroleum product (free oil) and impacted groundwater beneath these AOCs the NJDEP is unwilling to issue a determination of no further action (NFA) for these AOCs. It should be noted that the free oil or the impacted groundwater is not a result of any releases from those AOCs in which an NFI determination has been granted. In accordance with N.J.A.C. 7:26 C-2.6(a)(2), it has been requested that the NJDEP issue a NFA letter for each of these AOCs as to which "NFIs" have been granted. It has also been recommended that, based on the findings of this ISRA RI, NFA letters also be issued for each AOC which meets the conditions of an NFA as defined in N.J.A.C. 7:26 C-2.6(a)(2). The overall objective for Site closure is to obtain a written determination of NFA from the NJDEP (i.e., NFA letters) for each AOC as opposed to one NFA letter for the entire Site, which is consistent with N.J.A.C. 7:26C-2.6(a)(2).

REFERENCES

1. HSWA Permit RCRA Facility Investigation (RFI) Report. Prepared by Malcolm Pirnie, Inc. Dated September 1996.
2. Preliminary Assessment Report. Prepared by Malcolm Pirnie, Inc. Dated August 1999.
3. Remedial Investigation Report ICI Subsite. Prepared by Malcolm Pirnie, Inc. Dated August 2001.
4. Refer to Attachment 3 of This Document for a Summary of FORP-Related Documents.
5. Remedial Investigation Work Plan. Prepared by Malcolm Pirnie, Inc. Dated March 2000.
6. Remedial Investigation Work Plan Addendum Attachments. Prepared by Malcolm Pirnie, Inc. Dated August 2000.
7. Remedial Investigation Report Addendum ICI Subsite. Prepared by Malcolm Pirnie, Inc. Dated January 2004.
8. Remedial Action Workplan. Prepared by Malcolm Pirnie, Inc. Dated June 2005.
9. Remedial Action Selection Report: Plume 13-ICIC (Draft). Prepared by Parsons. Dated March 2004.
10. Remedial Action Selection Report - AOC-R2: Off-Site Drainage Ditch. Prepared by Malcolm Pirnie, Inc. Dated August 2005.

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

SUMMARY OF AREAS OF CONCERN (AOCs)

In summary, of the 100 AOCs identified at the ICI Subsite, **seventy-six (76)** have received a No Further Investigation (NFI) designation; no further action was recommended for **four (4)** AOCs in the RIR Addendum;; **fourteen (14)** will be addressed as part of a Remedial Action Workplan (RAW) developed for the ICI Subsite (Ref. 8); **two (2)** AOCs are being addressed by Remedial Action Selection Reports-one completed for an ExxonMobil-related AOC (Ref. 9) and one completed for an ExxonMobil/ICI-related AOC (Ref. 10); the investigations at **three (3)** AOCs were deferred by NJDEP until the completion of the FORP (Ref. 3); and **one (1)** AOC will require further delineation efforts.

A brief description of the 76 AOCs which have received a NFI determination along with the rationale used to support the NFI is provided in Attachment 2. A summary of the 24 AOCs that have not yet received an NFI designation from the NJDEP (including the four (4) AOCs where such a designation is pending) is provided below and is also summarized in Attachment 2.

Fourteen AOCs Addressed Under the ICI Subsite RAW (Ref. 8)

- **AOC-A12, AOC-I2, and AOC-C8:** This group of AOCs consists of the former polyurethane tank farm (AOC-A12), the spill collection sump (AOC-I2), and the former polyurethane unloading area (AOC-C8) (Attachment 4). The former polyurethane tank farm (AOC-A12) consisted of six aboveground storage tanks ranging in capacity from 3,000 to 12,000 gallons, including: a 12,000-gallon trichloroethylene (TCE) tank, a 3,000-gallon 50% caustic tank, a 12,000-gallon styrene tank, a 6,000-gallon methyl ethyl ketone tank, a 6,000-gallon ethylene glycol tank, and a 6,000-gallon toluene diisocyanate tank. The tank farm was located in the central portion of the ICI Subsite near the Engineering/Stores Building and was constructed on a concrete pad approximately 75 feet by 25 feet, with a 3-foot high dike. The diked area was surfaced with concrete and sloped to a drain valve and spill collection sump (AOC-I2) located within the dike. The former polyurethane unloading area (AOC-C8) was located between the polyurethane tank farm and the Polyurethane Building, which is currently identified as the Engineering/Stores Building.

Volatile organic compounds (VOCs) detected above the NJDEP Impact to Groundwater Soil Cleanup Criteria (IGWSCC) include styrene, trichloroethene (TCE), 1,2 dichloroethene (cis), and vinyl chloride.

The total volume of impacted soil to be addressed during the remedial action within this group of AOCs is approximately 456 cubic yards (yd³). The selected remedial alternative for this group of AOCs is in-situ thermal desorption (ISTD).

- **AOC-E8:** AOC-E8 consists of the former flammable storage area (AOC-E8) (Attachment 4). In the ICI Subsite's HSWA Permit, AOC-E8 is also referred to as SWMU No. 9. The former flammable storage area consisted of an approximately 50 by 75-foot concrete pad used to store 55-gallon drums of flammable liquids (such as methanol and propanol) on wooden pallets. The concrete pad has since been removed. However, prior to its removal, the pad was cracked and there were gaps in the mortar joints of the concrete curb.

Volatile organic compounds were detected above the IGWSCC in only one of 13 samples collected. The VOCs in that one sample were chloroform (58 mg/kg) and TCE (8.3 mg/kg).

The total volume of impacted soil to be addressed during the remedial action at AOC-E8 is approximately 25 yd³. The selected remedial alternative for this AOC is ISTD.

- **AOC-E1 and AOC-I10:** These AOCs consist of the hazardous waste storage pad (AOC-E1) and the hazardous waste storage pad drain pit (AOC-I10) (Attachment 4). The hazardous waste storage pad (AOC-E1), also referred to as SWMU No. 1 in the HSWA Permit and RFI documents, is located near the western side of the ICI Subsite. The hazardous waste storage pad is approximately 80 feet by 100 feet in size and currently serves as a secondary containment structure for the storage of sulfuric acid, waste oil, alpha-pinene, and other hazardous substances and wastes. The total estimated capacity within the bermed area, including the drain pit is 30,500 gallons.

Volatile organic compounds detected above the IGWSCC include carbon tetrachloride (CTC), chloroform, TCE and 1,2-dichloroethene (cis).

The total volume of impacted soil to be addressed during the remedial action at AOC-E1 and AOC-I10 is approximately 426 yd³. The selected remedial alternative for this group of AOCs is ISTD.

- **AOC-P1:** AOC-P1 is the Facility's process sewer system. The impacted area consists of a small section of the process sewer system located near the east side of the Facility (Attachment 4). The process sewer system is a combination sanitary and process sewer that discharges to the Passaic Valley Sewage Commission (PVSC) wastewater treatment plant in accordance with the Facility's wastewater discharge permit. The system consists of a network of approximately 3,000 linear feet of reinforced concrete, vitrified clay, and PVC underground piping that connects to several floor drains, trenches, sumps, and sinks located throughout the ICI Subsite.

Analytical results for the soil samples collected along AOC-P1 indicate that two VOCs (chloroform and methylene chloride) were detected above the IGWSCC at one sample location.

The total volume of soil to be addressed during the remedial action at this AOC is approximately 7 yd³. The selected remedial alternative for this AOC is ISTD.

- **AOC-C11, AOC-B4, and AOC-B5:** This group of AOCs consists of the former Alloprene™ rail car unloading area (AOC-C11), the former caustic soda rail car area (AOC-B4), and the former CTC rail car area (AOC-B5) (Attachment 4). The former Alloprene™ rail car unloading area is located at the east corner of the property and was formerly referred to as SWMU No. 3 under the HSWA Permit. Historically, it is the location where freight cars were used for the loading and/or unloading of chlorinated paraffins (Cereclor™), hydrochloric acid, liquid chlorine, caustic soda in liquid form, and CTC.

Analytical results indicated that CTC and chloroform exceeded the IGWSCC in several soil samples.

The total volume of soil to be addressed during the remedial action within this group of AOCs is approximately 583 yd³. The selected remedial alternative for this group of AOCs is ISTD.

- **AOC-C10 and AOC-I3:** This area consists of the former paraffin/carbon tetrachloride off-loading area (AOC-C10) and the former paraffin/carbon tetrachloride off-loading area sump (AOC-I3) (Attachment 4). The former paraffin/carbon tetrachloride off-loading area was located next to the Alloprene™/Cereclor™ tank farm (AOC-A14; also referred to as SWMU 4).

Analytical results indicated that benzene, CTC, tetrachloroethene (PCE) and chloroform exceeded the IGWSCC in numerous soil samples.

The total volume of impacted soil to be addressed during the remedial action at AOC-C10 and AOC-I3 is approximately 937 yd³. The selected remedial alternative for this group of AOCs is ISTD.

- **AOC-E18:** The former Atlac™ drum storage area (AOC-E18) is located north of the Engineering/Stores Building (the former Atlac™ Building) and is referred to as SWMU No. 5 (the "drum storage area behind the Atlac™ Building") in the ICI Subsite's HSWA Permit (Attachment 4). AOC-E18 consisted of a 100 foot by 40-foot unpaved area that was historically used for the storage of drummed raw materials (primarily paraffin wax) used in the Fluon™ manufacturing process. It was also used for the storage of drummed wastes generated during the closure of the Atlac™ process in December 1986. Other materials stored in this area may have included polyesters and sulfuric acid, which were also used in the Atlac™ manufacturing process.

The analytical results for the soil samples collected at AOC-E18 indicate that two VOCs, 1,2-dichloroethene (cis) and TCE were detected above the IGWSCC.

The total volume of impacted soil to be addressed during the remedial action at AOC-E18 is approximately 195 yd³. The selected remedial alternative for this AOC is ISTD.

- **AOC-C14:** The former solvent unloading area (AOC-C14) is located near the north side of the Engineering/Stores Building (Attachment 4). Analytical results presented

in the August 2001 RI Report (Ref. 3) indicated that elevated concentrations of VOCs were detected in three soil samples collected at AOC-C14. As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11) delineation samples were collected around the original three soil samples to evaluate the extent of VOCs. The results from this sampling program were submitted to NJDEP in January 2004 (Ref. 7).

The extent of COCs was delineated during the implementation of the RIR Addendum and concentrations of benzene, 1,2-dichloroethene (cis), TCE, chloroform, and xylenes exceeded the IGWSSC.

The total volume of impacted soil to be addressed during the remedial action at AOC-C14 is approximately 211 yd³. The selected remedial alternative for this AOC is ISTD.

Four AOCs Where No Further Action is Recommended (Ref. 7)

- **AOC-D1:** The former Bayonne-Bayway pumping station (AOC-D1) is located near the western property boundary (Attachment 4). Analytical results presented in the August 2001 RI Report (Ref. 3) indicated that elevated concentrations of lead and total petroleum hydrocarbons (TPH) were detected in three soil samples collected in the vicinity of AOC-D1. As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11) delineation samples were collected around the original three soil samples to evaluate the extent of lead and TPH. The results from this sampling program were submitted to NJDEP in January 2004 (Ref. 7). Analytical results indicate that concentrations of the COCs were below the applicable NJDEP criteria after employing an allowable compliance averaging procedure consistent with the applicable New Jersey regulations. Therefore, no further action was recommended.
- **AOC-N1:** The historic fill (AOC-N1) is located throughout the ICI Subsite (Attachment 4). However, analytical results presented in the August 2001 RI Report (Ref. 3) indicated that elevated concentrations of lead and arsenic were detected in only two soil samples collected in the vicinity of the Former Bayonne-Bayway Pumping Station (AOC-D1). As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11) delineation samples were collected around the original two soil samples to evaluate the extent of lead and arsenic. The results from this sampling program were submitted to NJDEP in January 2004 (Ref. 7). Analytical results indicate that concentrations of the COCs were below the applicable risk-based criteria outlined in the Baseline Ecological Evaluation (included in Ref. 3) and discussed further in the RI Addendum Report (Ref. 7). Therefore, no further action was recommended.
- **AOC-E2:** The former satellite drum storage area (AOC-E2) is located near the north side of the Engineering/Stores Building, in the vicinity of AOC-C14 (Attachment 4). Analytical results presented in the August 2001 RI Report (Ref. 3) indicated that elevated concentrations of polychlorinated biphenyls (PCBs) were detected in one soil sample collected at AOC-E2. As recommended in the August 2001 RI Report (Ref. 3), delineation samples were collected around the original soil sample to evaluate the extent of PCBs. The results from this sampling program were submitted

to NJDEP in January 2004 (Ref. 7). Analytical results indicate that concentrations of the COCs were below the applicable NJDEP criteria (i.e., Non Residential Direct Soil Cleanup Criteria) after employing an allowable compliance averaging procedure consistent with the applicable New Jersey regulations. Therefore, no further action was recommended.

- **AOC-L2:** The off-site storm system (AOC-L2) is located to the northwest of the ICI Subsite and receives storm water runoff from the Facility (Attachment 4). Analytical results presented in the July 12, 2002 Response to Comments Package (Ref. 11) indicated that elevated concentrations of VOCs were detected in two soil samples collected at AOC-L2. As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11) delineation samples were collected around the original two soil samples to evaluate the extent of VOCs. The results from this sampling program were submitted to NJDEP in January 2004 (Ref. 7). Analytical results indicate that concentrations of the COCs were below the applicable NJDEP criteria after employing an allowable compliance averaging procedure consistent with the applicable New Jersey regulations. Therefore, no further action was recommended.

Three AOCs Where the Investigation is Deferred

- **AOC-A20, AOC-A21, and AOC-B6:** The investigations at the former petroleum tank farm (AOC-A20), the former New Jersey sales area (AOC-A21) and the former Exxon rail car (AOC-B6) (Attachment 4) will be deferred until the completion of the FORP (Ref. 3).

Two AOCs Addressed in RASRs

- **AOC-F1:** Aerial photographs dating from 1959 to 1963 show open ponds or lagoons in the northwest quadrant of the property (currently referred to as the northwest lagoons or AOC-F1) (Attachment 4). Based on historical information, such lagoons were used for the temporary storage of waste oils and disposal of other petroleum refinery type waste. Coal ash, concrete debris and dirt were also used as historic fill material in this area. These materials contained pockets of other waste material and miscellaneous debris used to fill the lagoons. A thin cover material was placed over the former petroleum waste lagoons and coal ash. This material consisted of soil fill and a heterogeneous mixture of construction debris, including concrete, bricks, wood, re-bar, scrap metal, tile and timbers. A RASR has been developed to address AOC-F1 (Ref. 9).
- **AOC-R2:** The off-Site drainage ditch (AOC-R2) is located to the northwest of the ICI Subsite and receives storm water runoff from the Facility, New Hook Road, and other adjacent properties (Attachment 4). Analytical results presented in the August 2001 RI Report (Ref. 3) indicated that elevated concentrations of VOCs, TPH, and metals were detected in various sediment samples collected within the off-Site drainage ditch. As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11) delineation samples were collected downstream from the original sediment samples to evaluate the extent of VOCs, TPH, and metals. The results from this sampling program were submitted to NJDEP in January 2004 as part of the RI Addendum (Ref 7). Analytical results indicated the presence of elevated

concentrations of COCs throughout the sampled length of the off-Site drainage ditch. Therefore, the development of a RASR was recommended in the RIR Addendum. The presumptive remedial action of the off-Site drainage ditch, which is excavation and disposal, was described in the August 2005 RASR (Ref. 10).

One AOC Requiring Further Delineation

- **AOC-R1:** The Chromium Fill (AOC-R1) is located in various isolated locations at the facility (Attachment 4). Analytical results presented in the August 2001 RI Report (Ref. 3) indicated the presence of four discrete areas that contain hexavalent chromium in soils exceeding 100 mg/kg. In a letter dated April 12, 2002 (Ref. 12), the NJDEP required compliance to a 20 mg/kg standard and the completion of an Interim Remedial Measures (IRM) in an area located near the southeast corner of the ICI Subsite. As presented in the July 12, 2002 ExxonMobil Response to Comment package (Ref. 11), ExxonMobil proposed to complete an IRM investigation near the southeast corner of the ICI Subsite and requested the application of a cleanup guidance value of 100 mg/kg for hexavalent chromium. In a letter dated January 9, 2003, the NJDEP required delineation to a 20 mg/kg standard and required the completion of further delineation sampling (Ref. 13). Therefore, delineation samples were collected around the original soil samples that contained hexavalent chromium concentrations above 20 mg/kg and an IRM investigation was completed near the southeast corner of the ICI Subsite to evaluate the extent of chromium. The results from these sampling programs were submitted to NJDEP in January 2004 in the RIR Addendum (Ref. 7). Analytical results indicate the presence of elevated concentrations of hexavalent chromium at several isolated locations. Therefore, additional soil delineation was recommended in the RIR Addendum.

REFERENCES

11. Response to Comment Package, from ExxonMobil to Mark Walters, NJDEP, Dated July 12, 2002.
12. Letter from Mark Walters, NJDEP, to Ronald Scerbo, ExxonMobil, re: Comments on the August 2001 RI Report, dated April 12, 2002.
13. Letter from Mark Walters, NJDEP, to Ronald Scerbo, ExxonMobil, re: Comments on the July 12, 2002 Response to Comments Package, dated January 9, 2003.

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)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			VOCs, TPH
Air (indoors) ²		X		
Surface Soil (e.g., <2 ft)	X			VOCs, TPH, PCBs, metals
Surface Water		X		
Sediment	X			VOCs, TPH, metals
Subsurface Soil (e.g., >2 ft)	X			VOCs, TPH, PCBs, metals
Air (Outdoor)		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 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

Groundwater

ExxonMobil completed a Phase IA Remedial Investigation Report in 1995 for the Exxon and current AGCCA properties pursuant to the ACO issued by NJDEP in 1991. The investigation indicated the presence of 17 LNAPL plume areas located across the former 323-acre Exxon site.

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.

One of these areas, Plume 13, is primarily located under what is now the ICI Subsite. In 1998, ExxonMobil agreed to remediate contamination associated with its prior use of the ICI Subsite (e.g. petroleum contamination) and the ACO was amended to reflect this agreement. To expedite LNAPL remediation, NJDEP and ExxonMobil agreed that any petroleum-related remedial investigations would be deferred until the site-wide LNAPL remediation program (FORP), is completed.

The area referred to as Plume 13 actually contains four LNAPL plumes: 13-AH, 13-ICI-A, 13-ICI-B, and 13-ICI-C. Plume 13-AH is not located on the ICI Subsite and, therefore, is not considered further in this Environmental Indicator Determination. ExxonMobil has delineated the boundaries of the three plumes at the ICI Subsite and the FORP has been operational at Plumes 13-ICI-A and 13-ICI-B since 2002 (Ref. 4). A Draft RASR, addressing Plume 13-ICI-C has been submitted to the NJDEP (Ref. 9). Plume location details, physical characteristics, proposed remedial systems, and estimated duration of the proposed systems operations for the three plumes are included in Attachment 5.

Groundwater water quality at the ICI Subsite was investigated as part of the RFI (Ref. 1) and as part of the design of the FORP wells. Groundwater quality within the ICI Subsite boundaries has been impacted with VOCs, TPH related compounds, and metals. In addition to the FORP-related efforts that are being completed by ExxonMobil, ICI submitted a Groundwater Remedial Investigation (GWRI) Workplan in April 2003 (Ref. 14). The purpose of the GWRI Workplan was to evaluate the presence of chlorinated VOCs near the eastern boundary of the ICI Subsite.

The results of the GWRI Workplan were submitted to the NJDEP in April 2004 (Ref. 15). Three monitoring wells were installed and groundwater samples were collected from these newly installed wells and from select existing monitoring and FORP recovery wells. Elevated concentrations (i.e., above applicable NJDEP groundwater standards) of COCs, including carbon disulfide, CTC, methylene chloride, and chloroform were detected in the groundwater samples collected from several of newly installed and existing wells. Recommendations for future work included the installation of additional monitoring wells to complete the delineation of the chlorinated VOCs near the eastern portion of the ICI Subsite.

In January 2005, additional monitoring wells were installed and groundwater samples were collected from the existing and newly installed monitoring wells. The results from this phase of the investigation were presented in the Supplemental Groundwater Remedial Investigation Report, which was submitted to the NJDEP in May 2005 (Ref. 16). Elevated concentrations (i.e., above applicable NJDEP groundwater standards) of COCs, including carbon disulfide, CTC, methylene chloride, and chloroform were detected in the groundwater samples. Based on these findings, a Supplemental Groundwater Investigation Workplan was submitted to the NJDEP in July 2005 (Ref. 17)

Air (Indoors)

Three free oil plumes underlie portions of the ICI Subsite. However, Plume 13-ICI-C is located in an unused portion of the ICI Subsite, near the northwest corner. Plumes 13-ICI-A and 13-ICI-B underlie most of the buildings at the ICI Subsite. In April 2003, ExxonMobil submitted a Utility and Building Air Survey Report (Ref. 18) to document the protection of potential sensitive receptors (i.e., on and off-Site workers) from the free oil plumes. The ICI Subsite investigations performed included:

- A. Utility Surveys,
- B. Soil Gas Surveys,
- C. Building Surveys, and
- D. Air Sampling and Laboratory Analytical Testing.

Analytical results documented in the Air Survey Report indicate that neither aromatic hydrocarbons (FORP-related constituents) nor chlorinated hydrocarbons (ICI-related constituents) were detected above applicable OSHA permissible exposure levels (PELs). Based on the data presented in the April 2003 Utility and Building Air Survey Report, the indoor air at the ICI Subsite is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based levels.

In addition to the free oil plumes, chlorinated VOCs (carbon disulfide, CTC, methylene chloride, and chloroform) are present in the groundwater near the eastern boundary of the ICI Subsite. However, there are no buildings situated above the impacted shallow groundwater near this area. Further, the downgradient extent of chlorinated VOCs detected in the shallow groundwater has been delineated near the eastern boundary of the ICI Subsite (i.e., there are no buildings located downgradient that might potentially be impacted). Therefore, the indoor air at the ICI Subsite is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based levels as a result of the chlorinated VOCs present in the groundwater near the eastern boundary of the ICI Subsite.

Surface Soil

As discussed above under "Summary of Areas of Concern" section of this Environmental Indicators Determination and documented in the RIR (Ref. 3), the July 12, 2002 Response to Comments Package (Ref. 11), the ExxonMobil RASR (Ref. 9), and the ICI RIR Addendum (Ref. 7), the surface soils at 21 AOCs at the ICI Subsite have been impacted by TPH, VOCs, metals, and/or PCBs.

Of these 21 AOCs, a RAW has been submitted to the NJDEP (Ref. 8) detailing the remedial actions that will be implemented at 14 AOCs, RASRs have been submitted to the NJDEP for two AOCs (Refs. 9 and 10), an NFA proposal has been submitted to the NJDEP for four AOCs (Ref. 7), and additional delineation sampling is recommended for one AOC prior to recommending any remedial actions (Ref. 7). A summary of the findings and recommendations for these 21 AOCs are provided in Attachment 2.

Surface Water

The BEE, provided in the July 12, 2002 Response to Comments Package (Ref. 11), presents data from surface water samples collected from two sampling events: an initial sampling event, which was conducted at the time of the preliminary sediment sampling, and a "first flush" sampling event, which was conducted at the beginning of a rain event. Screening of surface water samples indicated no potential risk from constituents in surface water in the off-Site drainage ditch (AOC-R2), with the exception of lead in the "first flush" sampling event. Lead was found at elevated concentrations relative to the benchmark at all of the sampling locations (both on-Site and in the City of Bayonne's sewer system, which includes the off-Site drainage ditch). This indicates that lead is present throughout the general vicinity of the Site, and that lead detected in the off-Site drainage ditch cannot be solely attributed to the Site. Therefore, according to the BEE, surface water is not considered a potential risk.

Sediment

As documented in the BEE (included as part of Ref. 11), sediment samples collected from the off-Site drainage ditch (AOC-R2) contained elevated levels of TPH, VOCs, and metals. As presented in the January 2004 Remedial Investigation Report Addendum (Ref. 7), delineation samples were collected downstream from the original sediment samples to evaluate the extent of VOCs, TPH, and metals. The results from this sampling program were submitted to NJDEP in January 2004. Analytical results indicated the presence of elevated concentrations of COCs throughout the length of the off-Site drainage ditch. Therefore, a RASR was submitted to the NJDEP in August 2005 (Ref. 10).

Subsurface Soil

As documented in the RIR (Ref. 3), the July 12, 2002 Response to Comments Package (Ref. 11), the ExxonMobil RASR (Ref. 9), and the ICI RIR Addendum (Ref. 7), the surface soils at 21 AOCs at the ICI Subsite have been impacted by TPH, VOCs, metals, and PCBs.

Of these 21 AOCs, a RAW has been submitted to the NJDEP (Ref. 8) detailing the remedial actions that will be implemented at 14 AOCs, RASRs have been submitted to the NJDEP for two AOCs (Refs. 9 and 10), an NFA proposal has been submitted to the NJDEP for four AOCs (Ref. 7), and additional delineation sampling is recommended for one AOC prior to recommending any remedial actions (Ref. 7). A summary of the findings and recommendations for these 21 AOCs are provided in Attachment 2.

Air (Outdoors)

In April 2003, ExxonMobil submitted a Utility and Building Air Survey Report (Ref. 18) to document the protection of potential sensitive receptors (i.e., on and off-Site workers) from the free oil plumes. As part of this investigation, ExxonMobil collected samples of outdoor air. Based on the data presented in the April 2003 Utility and Building Air Survey Report, the outdoor air at the ICI Subsite is not known or reasonably suspected to be "contaminated" above appropriately protective risk-based levels.

REFERENCES

14. Remedial Action Selection Report/Groundwater Remedial Investigation Workplan, Prepared by Malcolm Pirnie, Inc. April 2003.
15. Groundwater Remedial Investigation Report, prepared by Malcolm Pirnie, Inc. April 2004.
16. Supplemental Groundwater Remedial Investigation Report, prepared by Malcolm Pirnie, Inc. May 2005.
17. Supplemental Groundwater Remedial Investigation Workplan, prepared by Malcolm Pirnie, Inc. July 2005.
18. Utility and Building Air Survey Report, prepared by Parsons Engineering, dated April 2003.

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	Trespasser	Recreation	Food ³
Groundwater	No	No	No	Yes	No	No	No
Air (indoor)	---	---	---	---	---	---	---
Surface Soil (e.g. < 2 ft)	No	Yes	No	Yes	Yes	No	No
Surface Water	---	---	---	---	---	---	---
Sediment	No	No	No	Yes	Yes	No	No
Subsurface Soil (e.g., > 2 ft)	No	No	No	Yes	No	No	No
Air (outdoors)	---	---	---	---	---	---	---

Instruction 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. These spaces instead have dashes (“--”). 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.

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

RATIONALE

Groundwater

Groundwater occurs at relatively shallow depths beneath the ICI Subsite. The depth to groundwater/free oil layer beneath the eastern portion of the ICI Subsite is less than 10 feet below ground surface. During construction activities, whether related to Facility improvements or planned remedial actions, construction workers can come in contact with the groundwater and/or free oil.

It is important to note, that all construction and remediation workers must comply with AGCCA's Site Safety and Health Plan. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the impacted groundwater and the construction and remediation workers.

Surface Soil

AGCCA workers can potentially come in contact with impacted surface soils during routine Facility work. Although most of the remaining 24 AOCs (i.e., for which the NJDEP has not yet issued a NFI designation) are located beneath asphalt or concrete cover, there are several AOCs located beneath unpaved areas of the ICI Subsite. During the implementation of the RAWs/RASRs, remediation workers will come in contact with the impacted surface soils.

It is important to note, that all Facility and construction and remediation workers must comply with AGCCA's Site Safety and Health Program. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the impacted surface soils and the Facility and construction and remediation workers.

Surface soil (< 2 feet) has been impacted along the banks of the off-Site drainage ditch (AOC-R2). Although trespassers can access the off-Site drainage ditch, given the very dense vegetation along the ditch and the lack of vegetation immediately adjacent to the ditch, the trespasser scenario is unrealistic. In the unlikely event that a trespasser comes into contact with the off-Site drainage ditch sediments, that contact is expected to be infrequent and for a short duration. Further, a RASR for the off-Site drainage ditch was submitted to the NJDEP in August 2005 (Ref. 10) and remedial activities will be implemented in the near future.

Sediment

The off-Site drainage ditch (AOC-R2) is the only AOC that includes impacted sediment. Historically, the City of Bayonne Department of Public Works (Bayonne DPW) has dredged portions of the drainage ditch to alleviate the potential flooding of local roads. If dredging occurs in the future, these construction workers can potentially come in contact with the impacted sediments during the implementation of this work. However, dredging operations have been infrequent, occurring only once over the past 7 years. Any potential contact between a construction worker and the sediments is expected to be infrequent and insignificant.

During any additional remedial activities, construction and remediation workers can potentially come in contact with the impacted sediments during the implementation of those efforts. It is important to note, that all construction and remediation workers will comply with a Site Safety

and Health Program. This Program will include specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol will limit the exposure between the impacted surface soils and the Facility and construction and remediation workers.

Although trespassers can access the off-Site drainage ditch, given the very dense vegetation along the ditch and the lack of vegetation immediately adjacent to the ditch, the trespasser scenario is unrealistic. In the unlikely event that a trespasser comes into contact with the off-Site drainage ditch sediments, that contact is expected to be infrequent and for a short duration. Further, a RASR for the off-Site drainage ditch was submitted to the NJDEP in August 2005 (Ref. 10) and remedial activities will be implemented in the near future.

Subsurface Soil

During construction activities, whether related to Facility improvements or planned remedial actions, construction workers can potentially come in contact with the impacted subsurface soil. It is important to note, that all Facility and construction and remediation workers must comply with Asahi's Site Safety and Health Program. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the impacted subsurface soils and the Facility and construction and remediation workers.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **significant**⁴ (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks?

X If no (exposures cannot 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

Groundwater

The exposures from the pathway between groundwater and construction and/or remediation workers, if any, are not reasonably expected to be significant. An example of a typical construction/remediation worker exposure would be during the installation or maintenance of recovery wells or monitoring/observation wells. Thus, although free oil plumes are present beneath the ICI Subsite, any exposure to these plumes is expected to be infrequent and for relatively short duration. It is important to note that all construction/remediation workers must comply with AGCCA's Site Safety and Health Program. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the groundwater and the construction/remediation workers.

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.

Surface Soil

The exposures from the pathway between surface soil and ICI Subsite workers and construction workers, if any, are not reasonably expected to be significant. Most of the remaining 27 AOCs (i.e., for which the NJDEP has not yet issued a NFI designation) are located beneath asphalt or concrete cover. Thus only those handful of AOCs located beneath unpaved areas of the ICI Subsite are potential candidates for contact. During the implementation of the RAWs/RASRs, remediation workers are expected to come in contact with the impacted surface soils.

It is important to note, however, that all Facility and construction and remediation workers must comply with Asahi's Site Safety and Health Program. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the impacted surface soils and the Facility and construction and remediation workers. Further, completion of the remedial actions will reduce or eliminate potential exposures to impacted surface soil. Therefore, any exposure to impacted surface soil is expected to be infrequent and for relatively short duration.

The exposures from the pathway between surface soil along the banks of the off-Site drainage ditch and trespassers, if any, are not reasonably expected to be significant. Since the off-Site drainage ditch is not located within the confines of the ICI Subsite, it is not protected by security measures at the Facility. While the ditch is unsecured in that sense, it is important to note that very dense vegetation acts as a barrier to contact with impacted surface soil. Thus, while it is theoretically possible for trespassers to come into contact with the surface soil, it is not a realistic likelihood. Nonetheless, an assessment of the potential for risks to adolescent trespassers from exposure to soil and sediment in the ditch was completed (Attachment 6). Based on this assessment, there is no potential for unacceptable risks to adolescent trespassers who may contact surface soil in the ditch.

Sediment

The exposures from the pathway between sediment and construction workers and trespassers, if any, are not reasonably expected to be significant. Historically, the Bayonne DPW has dredged portions of the drainage ditch to alleviate the potential flooding of local roads. If dredging occurs in the future, these construction workers can potentially come in contact with the impacted sediments during the implementation of this work. However, dredging operations have been infrequent, occurring only once over the past 7 years. Any potential contact between a construction worker and the sediments is expected to be infrequent and insignificant.

A RASR was submitted to the NJDEP in August 2005 (Ref. 10) based on the additional delineation at the off-Site drainage ditch (AOC-R2). During any remedial activities, construction and remediation workers can potentially come in contact with the impacted sediments during the implementation of those efforts. These workers will be required to comply with the appropriate health and safety plan, prepared and approved for these activities.

Since the off-Site drainage ditch is not located within the confines of the ICI Subsite, it is not protected by security measures at the Facility. While the ditch is unsecured in that sense, it is important to note that very dense vegetation acts as a barrier to contact with impacted sediments. Thus, while it is theoretically possible for trespassers to come into contact with such sediments, it is not a realistic likelihood. Nonetheless, an assessment of the potential for risks to adolescent trespassers from exposure to soil and sediment in the ditch was completed (Attachment 6).

Based on this assessment, there is no potential for unacceptable risks to adolescent trespassers who may contact sediment in the ditch.

Subsurface Soil

The exposures from the pathway between subsurface soil and construction workers, if any, are not reasonably expected to be significant. During the implementation of remedial actions or Facility improvements, construction workers can be expected to come in contact with impacted subsurface soils.

It is important to note, however, that all Facility and construction and remediation workers must comply with AGCCA's Site Safety and Health Program. This Program includes specific protective measures, such as the completion of work permits, the operation of field-monitoring instrumentation, and the use of personnel protective equipment. Compliance with this protocol limits the exposure between the impacted subsurface soils and the Facility and construction and remediation workers. Further, completion of the remedial actions will reduce or eliminate potential exposures to impacted surface soil. Therefore, the exposure to impacted subsurface soil is expected to be infrequent and for relatively short duration.

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

This question is not applicable. See response to question #4.

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 AGCCA Facility, EPA ID# NJD001787944, located at 229 East 22nd Street in Bayonne, New Jersey, 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: Charles T. [Signature]

Date: September 21, 2005

Reviewed by: _____

Date: _____

[Signature]

Date: 9/29/05

Shane Nelson, RPM
RCRA Programs Branch
EPA Region 2

[Signature]

Date: 9/29/05

Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: [Signature]

Date: 9/29/05

Adolph S. Everett, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York, and the New Jersey Department of Environmental Protection Office located at 401 East State Street, Records Center, 6th Floor, Trenton, New Jersey.

Contact telephone and e-mail numbers: Shane Nelson, EPA RPM
(212) 637-3130
nelson.shane@epamail.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.

Attachment 1 - Summary of Media Impacts Table

**Wyeth Holdings Corporation (formerly AHP and American Cyanamid),
East Main Street, Bridgewater, New Jersey**

Impoundment/ SWMU	GW ¹	AIR (Indoors)	SURFACE SOIL	SURFACE WATER	SEDIMENT	SUBSURFACE SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE ²	KEY CONTAMINANTS
SWMUs 6, 7, 8 and 9A (RCRA Jurisdiction)	NA	No	No	No	No	No	No	<ul style="list-style-type: none"> Excavation, dewatering, solidification, and proper consolidation of waste materials in impoundments Closure documentation submitted 	NA
Group I Impoundments (SWMUs 11, 13, 19, and 24)	NA	No	No	Yes	Yes	Yes	No	<ul style="list-style-type: none"> Excavation of wastes from impoundments On-site solidification of excavated material Consolidation into Impoundment 8 Facility Groundwater monitoring (19, 24) (see below) 	VOCs, SVOCs, Inorganics, PCBs
Group II Impoundments (SWMUs 15, 16, 17, 18)	NA	No	No	Yes	Yes	Yes	No	<ul style="list-style-type: none"> Excavation (16, 17) and consolidation of material (15, 8) Capping (15) Fence, berm improvements, maintenance of natural vegetation (18) Groundwater monitoring (15, 18) (see below) 	VOCs, SVOCs, Inorganics, PCBs
Group III Impoundments (SWMUs 1, 2, 3, 4, 5, 14, 20, and 26)	NA	No	No	Yes	Yes	Yes	No	<ul style="list-style-type: none"> Thermal treatment of tar material (1, 2, 3) Biotreatment of tar (4, 5, 14, 20) Consolidation of treated material (8) Excavation of non-hazardous materials (5, 26) and consolidation (8) Excavation of plant debris (3, 4, 5, 14, 20) and consolidation (8) 	VOCs, SVOCs, Inorganics, PCBs