DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Huntsman Polypropylene Corporation
Facility Address: Mantua Grove Road, West Deptford Township, New Jersey
Facility EPA ID#: NJD002482602

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the Resource Conservation and Recovery Act (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 "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 groundwater 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 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

Huntsman Polypropylene Corporation (Huntsman) is located on a 300-acre parcel of land in West Deptford Township, Gloucester County, New Jersey. The property consists of about 210 acres of woodland and pasture, and about 90 acres was formerly used for the production of polypropylene. From 1962 to 1987, Shell Chemical Corporation (Shell) conducted polypropylene manufacturing on the site. In 1987, Huntsman purchased the site and continued operations until 1999. Beginning in 1987, at the time of the sale to Huntsman, Shell conducted an environmental evaluation under the New Jersey Department of Environmental Protection's (NJDEP) Environmental Cleanup and Responsibility Act (ECRA). ECRA activities included soil and groundwater sampling and hot-spot removal of impacted soils. The evaluation continued until 1992, when Shell received a no further action determination from NJDEP.

Three main processes were used during the production of polypropylene at the facility: (1) the Wet End Process, (2) the Dry End Process, and (3) the Utilities Process. Water was supplied to the site through four on-site wells. Three of the on-site wells were process water wells, and one was a potable water well. All water obtained from these wells was treated on-site prior to its use. Currently, none of the four wells are being used. Process materials were stored in various quantities in tanks within the Boiler-Utilities Area. Three boilers generated steam required for the process operations. Boiler #3 also burned waste oil. Burning of waste oil ceased in 1995, and the boiler was closed in 1998. Boilers #1 and#2 were both taken out of service in June 1999 and cleaned as a part of the facility's decommissioning activities. The plant chemical and sanitary sewers drained to an on-site wastewater treatment facility. From 1962 to 1972, effluent from the on-site wastewater treatment system was discharged directly to the Delaware River under an NJDEP permit. From 1972 to 1975, treated wastewater was discharged to Mantua Creek. From 1975 until the cessation of manufacturing operations, all discharges went directly to the Gloucester County Utilities Authority (GCUA) treatment plant.

On March 4, 1999, Huntsman announced the cessation of operations at the facility. Thirty-two areas of concern (AOC) (namely, AOCs A through FF - there is no AOC I nor AOC O - and Groundwater) were identified in the facility's Preliminary Assessment (PA) Report, dated January 19, 2000. The PA was conducted under the NJDEP Industrial Site Recovery Act (ISRA), the successor program to ECRA. Nine of those AOCs (identified as AOCs 1 through 9) warranted further investigation, according to the PA. Additional investigation of the nine AOCs was conducted by Huntsman, and results of this investigation are contained in the Site Investigation/ Remedial Investigation/ Remedial Action Report (SI/RI/RAR) prepared by Roux Associates Inc., dated January 19, 2000. NJDEP responded with comments to both the PA and the SI/RI/RAR in a letter to Huntsman dated July 27, 2000. As a result, Huntsman performed some additional investigations, which occurred between September and October 2000. Huntsman prepared a response letter to the comments that were made by NJDEP in a letter dated November 29, 2000.

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?

   _X_ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

Summary of Areas of Concern (AOCs): A facility AOC (both former and current) map has been provided as Attachment 1.

AOC A (Catalyst Preparation Area): This area was used for the preparation and storage of catalysts used in the polypropylene manufacturing process. The catalyst mixing vessels were periodically cleaned with kerosene and steam, and the condensate from the cleaning process was flushed. During the Environmental Cleanup Responsibility Act (ECRA) investigations, several phases of excavation, post-excavation, and additional delineation sampling were conducted. A no further action determination was granted by the New Jersey Department of Environmental Protection (NJDEP) in December 1992. However, during the Preliminary Assessment (PA) site visit in January 2000, several small cracks were noted in a portion of the chemical sewer. In the Site Investigation/Remedial Investigation/Remedial Action Report (SI/RI/RAR), dated January 2000, this area was renamed AOC 1. Samples were collected from two downgradient monitoring wells (W-9 and W-10) during the July 1999 groundwater sampling event. During this sampling event, several metal conentrations were found to exceed the NJDEP groundwater criteria. Groundwater sampling conducted at these two wells in October 1999 using the low-flow methodology indicated no exceedances of the NJDEP groundwater criteria. In addition, localized oil staining was identified on the ground near a compressor in this area. The soils around the compressor pad were excavated, and post-excavation samples were collected and analyzed for Total Petroleum Hydrocarbons (TPH). All samples were below the most stringent NJDEP Soil Cleanup Criteria (SCC), and the excavated area was backfilled with certified clean soil. The facility is awaiting a declaration of no further action (NFA) for this AOC. NJDEP is concerned with the chemical sewer's integrity throughout the site, but once the integrity of the chemical sewer is further documented, an NFA determination will be issued for this AOC.

AOC B (Cooling Tower Pump Area): The tower was used to cool noncontact process water, and the pumps were associated with the former on-site cooling tower. Soil samples were taken during the ECRA investigations, and none of the samples exceeded the most stringent applicable SCC. This AOC received an NFA determination from NJDEP on December 16, 1992. The cooling tower was decommissioned in 1999. However, during the PA site visit in January 2000, oil-stained soils were identified surrounding several concrete pads associated with the cooling tower pumps. In the SI/RI/RAR, this AOC was renamed AOC 2. The oil-stained soils were excavated, 22 post-excavation soil samples were taken and

analyzed for TPH, and four of those were also analyzed for Polycyclic Aromatic Hydrocarbons (PAH).

All soil sample results were below the most stringent SCC. The excavated area was backfilled with certified clean soil. The facility is awaiting an NFA for this AOC.

AOC C (Maintenance/Fabrication Shop Area): The maintenance/fabrication shop was a steel structure that was used to store metal-working equipment, and it was used to maintain and steam clean equipment. A 275-gallon fuel oil aboveground storage tank (AST) was previously located in the southwestern corner of the shop area. The AST replaced a former underground storage tank (UST) that had been removed. A diked concrete ditch formerly was used to drain waste to the chemical sewer, and the concrete ditch showed signs of cracking. Under the ECRA investigations, soils within this area were excavated, post-excavation soil samples were taken, and the area was filled with clean backfill. This AOC received an NFA determination on December 16, 1992 from NJDEP. During the PA site visit in January 2000, oil-stained soils were observed. In the SI/RI/RAR, this AOC was renamed AOC 3. Stained soils were excavated and backfilled with clean soil. Nine post-excavation soil samples were collected and analyzed for TPH: three of those were also analyzed for volatile organic compounds (VOC) and base neutrals (BN), and one was also analyzed for chromium. All soil sample results were below the most stringent SCC. The facility is awaiting an NFA determination for this AOC.

AOC D (Scrap Yard Area): This site was used for the temporary storage of scrap metal, old machinery, piping, and industrial equipment. All materials were removed from this area during the decommissioning activities for the site. A former building concrete foundation, an AST, and a septic system were located in this area. Under the ECRA investigation, 48 investigative soil samples were collected, excavations of soil were performed in two areas, and an NFA determination was issued by NJDEP on December 16, 1992. During the PA site visit in January 2000, oil-stained soils were observed on the ground near one of the compressors. In the SI/RI/RAR, this AOC was renamed AOC 4. Stained soils were excavated from nine locations, 24 post-excavation soil samples were collected and analyzed for TPH, and 9 of those samples were also analyzed for VOCs, BNs, metals, and Polychlorinated Biphenyls (PCB). All analytical results were below the most stringent SCC. Excavated areas were backfilled with certified clean fill. The facility is awaiting an NFA determination for this AOC.

AOC E (Empty Drum Storage Area): This area was formerly used to store cleaned drums inverted on wooden pallets that were located on a paved area of the AOC. The paved area is located adjacent to the drum storage building and to a gravel-covered area used for equipment storage. During the earlier ECRA investigation, soil samples were collected that revealed elevated levels of TPH. The elevated areas were excavated, post-excavation samples were taken, and the areas were backfilled with clean soil. No spills or releases have been reported since the ECRA investigation. According to a letter from NJDEP to Huntsman Polypropylene Corporation (Huntsman), dated July 27, 2000, an NFA will be issued for this AOC.

AOC F (Extruder Building Drum Staging Area): This area formerly was used to stage drums of oil, and it consisted of a gravel-covered area located west of the extruder building. During the previous ECRA investigation, 75 investigative soil samples were collected and elevated levels of TPH were detected. Soils were excavated, post-excavation samples were taken, and the resulting TPH levels were below the NJDEP SCC. The area was filled with clean backfill. According to a letter from NJDEP to

Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC G (Former Overflow Holding Ponds): Shell Chemical Corporation (Shell) operated a holding pond from November 1972 to October 1974. The purpose of this pond was to hold process water when the isopropyl alcohol distillation column was being descaled. The pond was constructed of earthen walls lined with plastic. It was used about two times per year. In August 1979, the ponds were removed from service by pumping collected storm water to the pretreatment unit and cleaning the sludge from the bottom of the primary and secondary ponds. The plastic liner was then removed and disposed of, and the earthen walls were demolished and graded. The soils beneath the former impoundments were investigated, and no exceedances of the NJDEP SCC were found. This area has been vacant since its closure and remediation under the ECRA investigation. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC H (Flare Stack Separator Basin Area): A separator stack is located directly beneath the flare stack. The flare was used to collect routine and emergency vents from various process sources. The separator basin, which consisted of a concrete vault, was used to reclaim polypropylene and oils that were flushed from the lines to the stack. The separated material was then pumped to the on-site wastewater treatment plant through the chemical sewer. Sludges were removed periodically from the concrete vault, and during the removal, inspections of the integrity of the concrete were performed. No cracks or pitting were ever reported. During the ECRA investigation, evidence of overflow and stained soil were observed. The area was investigated, and 47 soil samples were collected downgradient from the vault. No exceedances of the NJDEP SCC were found. This AOC received an NFA from NJDEP on December 16, 1992. This area was decommissioned in June 1999. The PA recommended no further action for this area. NJDEP will not issue an NFA determination for this AOC until information on the integrity of the separator basin has been received. In a letter from Huntsman to NJDEP on November 29, 2000, Huntsman indicated that soil samples were collected in this area on September 29, 2000. The results will be provided in a follow-up report to the NJDEP. The draft results indicated that no exceedances of the NJDEP SCC were found. An NFA determination is expected to be issued for this AOC.

AOC J (Former Discharge Pipe): A discharge pipe that drained water from the pretreatment unit from 1972 to 1975 was located to the southwest of the separator basin. The discharge pipe was sealed in 1975, when the wastewater treatment facility was connected to the public sewer. During the ECRA investigation, two soil samples and one soil boring for TPH were collected. In addition, one downgradient monitoring well was sampled. The soil sample results for TPH were all below the most stringent SCC. This AOC received an NFA determination from NJDEP on December 16, 1992. This area has not been used for effluent drainage since 1975, and no spills or releases have been reported since then. The PA also recommended an NFA for this area. NJDEP will not issue an NFA determination for this AOC until the integrity of the drainage line is received. In a letter from Huntsman to the NJDEP on November 29, 2000, Huntsman indicated that based on discussions with facility personnel, the discharge pipe was routinely inspected and no cracks or leaks were observed during the use of the channel. An NFA determination is expected to be issued for this AOC.

AOC K (No. 6 Fuel Oil Tank Area): This area contained a No. 6 fuel oil AST within a secondary containment area that consisted of a clay-base berm filled with gravel containment media. The area contained a culvert which was sealed, and a sump had been installed in the southeastern corner that discharged accumulated storm water to the chemical sewer. Adjacent to the secondary containment to the north was a loading and unloading area that drained to the chemical sewer. In addition, a waste oil AST formerly was located to the east of the diked area. The waste oil AST was removed in 1979. During the ECRA investigation, 58 soil samples were collected both inside the secondary containment area, as well as in the surrounding area of the AOC. Soils were excavated northwest of the AST, within the dike, and east of the fuel unloading area, all to a depth of 1 foot below ground surface (bgs). Post-excavation soil samples were taken and two rounds of groundwater samples were collected from Monitoring Wells W-14 and W-15. No constituents were found above the most stringent criteria in either the soil or groundwater samples. This AOC received an NFA determination from NJDEP on December 16, 1992. The PA also recommended an NFA for this area. The waste oil AST and clay base have been remediated, and an NFA determination is expected to be issued for this AOC.

AOC L (Fire Training Area): This area consisted of a steel pan and a circular pit. The pit, and later the steel pan, were used to hold hydrocarbons that were ignited for fire suppression training. Waste oils were used as fuels and were stored in a 290-gallon AST located adjacent to the pit area. Under the ECRA investigation, the AST was removed, and stained soil, stressed vegetation, and odors were observed. The soil in the area was sampled and excavated, post-excavation samples were collected and the area was backfilled with certified clean soil. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC M (Drum Decontamination Area): This area is located in the central portion of the facility. The area previously consisted of a waste oil pad and sump and a Resource Conservation and Recovery Act (RCRA) drum decontamination pad with an oil-water separator. Both pads included basins constructed of concrete. The waste oil pad included a sump that extended to 3.5 feet (ft) bgs. The drum decontamination pad included a separator that extended to 4.0 ft bgs. Cracks and stains were observed in the walls of the basins, and staining was observed on the surrounding gravel during the ECRA investigations. Sixty-two soil samples were collected, and groundwater was sampled at two wells (W-28 and W-29) located downgradient of the AOC. The groundwater samples were analyzed for VOCs and BNs. Low levels of benzene; 1,1,1-dichloroethane and trichloroethene were detected in W-29. The area was completely decommissioned and demolished during the ECRA investigation, and a new RCRA-permitted drum decontamination unit and small accumulation tank were constructed near the former decontamination pads. This AOC received an NFA determination from NJDEP on December 16, 1992. The new unit was decommissioned in June 1999, in accordance with the RCRA closure plan. During the PA site visit in January 2000, oil-stained soil was identified adjacent to the current drum decontamination unit. In the SI/RI/RAR, this AOC was renamed AOC 5. The stained soils were excavated, and 10 post-excavation soil samples were collected and analyzed for TPH. Three of those soil samples were also analyzed for VOCs, BNs, metals, and PCBs. All samples were below the most stringent SCC. The excavated area was backfilled with certified clean soil. No additional actions have been required

specifically by NJDEP for this AOC. The facility is awaiting a declaration of no further action (NFA) for this AOC. NJDEP is concerned with the chemical sewer's integrity throughout the site, but once the integrity of the chemical sewer is further documented, an NFA determination will be issued for this AOC.

AOC N (Chemical Storage Area): This area contained a 36,000-gallon sodium hydroxide AST; a 6,000-gallon sulfuric acid AST; and a 12,000-gallon No. 2 fuel oil AST. A cement pad was located directly in front of the ASTs. Stained gravel was observed during the previous ECRA investigations. Thirty-four soil samples were collected, and TPH was found to exceed soil criteria. Seventy cubic yards (yd^3) of soil were excavated, post-excavation soil samples were collected and the excavations were backfilled with clean soil. Two groundwater monitoring wells (W-7 and W-8) in the vicinity of the AOC were sampled and sample results indicated no exceedances of NJDEP groundwater criteria. This AOC received an NFA determination from NJDEP on December 16, 1992. All three ASTs were removed as part of the decommissioning activities in July 1999. The PA also recommended an NFA for this AOC. The facility is awaiting an NFA determination for this AOC, but the NJDEP will not issue it until information on the integrity of the secondary containment unit and the drain leading to the chemical sewer is received. In a letter from Huntsman to NJDEP on November 29, 2000, Huntsman documented the integrity of the containment system, and no spills or releases were identified. An NFA determination is expected to be issued for this AOC.

AOC P (Tile Field): The tile field served as an emergency overflow for a pumping station, which connected the maintenance shop and stores building to the chemical sewer system. This area is about 40 ft by 40 ft and included the pumping station, a distribution box, and five effluent laterals located about 5 ft bgs. The pumping station was upgraded during the ECRA investigation, and the overflow line to the tile field was sealed. Five soil borings were performed, and no exceedances of the NJDEP SCC for TPHs in the area were found. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman on July 27, 2000, an NFA determination will be issued for this AOC.

AOC Q (Pump House): This structure is located adjacent to Mantua Creek. The pump house had floor drains that were used to drain creek water back to Mantua Creek during rain events. A 55-gallon drum of antifreeze and a drum containing oily water were located in this area. No evidence of staining or releases were reported for this area and there was no ECRA investigation in this area. The drums were removed from the area. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman on July 27, 2000, an NFA determination will be issued for this AOC.

AOC R (Water Line Leak): During the original ECRA inspection, NJDEP identified a leaking aboveground pipe located in an overhead rack. The leaking pipe was determined to contain water and was repaired. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC S (Sulfuric Acid Spill): About 400 gallons of sulfuric acid were released to the ground surface from an overhead pipe. The area where the acid spilled is located in the south-central portion of the site.

Immediate response to the accident included stopping and repairing the leak and using soda ash to neutralize the acid. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC T (Transformers): This area included soils surrounding eleven of the Tract-2 facility transformers that were grouped into four locations. Soil sampling was conducted during the previous ECRA investigation. Two areas were determined to be in need of remedial action (T-1 and T-2). Excavation of contaminated soils was performed, post-excavation soil samples were below the most stringent SCC, and the excavation sites were filled with clean backfill. During the PA investigation, soils in the vicinity of two transformers were found to have PCBs in the soil above the current residential soil criteria. In the SI/RI/RAR, this AOC was renamed AOC 6. Soils from the two areas were excavated, and soil samples were collected and analyzed for TPH and PCBs. All post-excavation soil samples were below the nonresidential SCC. Excavated areas were backfilled with certified clean soil. The facility is awaiting an NFA determination for this AOC.

AOC U (Mantua Creek Wetland): The Huntsman facility is located adjacent to Mantua Creek, a tidally influenced tributary of the Delaware River. Storm water from the facility drains directly to the creek. However, any storm water from production areas is diverted to the chemical sewer system. Pretreated facility effluent was discharged under permit to the Mantua Creek from 1972 to 1975. The effluent pipe was addressed previously as Area J. During the ECRA investigation, polypropylene pellets were observed within the wetland area bordering the facility and Mantua Creek. Shell petitioned NJDEP for an NFA determination for the area, claiming that the pellets were inert and that they degrade photochemically. The facility contended that removal of the pellets would cause ecological damage and that it was not worth the aesthetic benefit. This AOC received an NFA determination on December 16, 1992 from NJDEP. The PA also recommended an NFA for this AOC. The facility is waiting an NFA determination for this AOC.

AOC V (Underground Fuel Storage Tank Area): A 1,000-gallon diesel fuel UST and a 2,000-gallon gasoline UST were located in this area. The USTs were removed in December 1987, in accordance with an NJDEP closure plan. The tanks were located 3 ft bgs and were covered by backfill and grass. Fill pipes associated with the tanks were located on a concrete pad above the tanks. Upon removal of the tanks, all visible stained soils were removed. Post-excavation soil sampling showed elevated levels of TPH, VOCs, and BNs. Four phases of excavation were performed to adequately remove all contaminated soils. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC W (Field West of Service Area): The field was a gravel-covered area located directly south of the extruder building drum staging area (AOC F). Soil and groundwater sampling were performed under the ECRA investigation, and none of the samples had any exceedances of the NJDEP SCC or groundwater criteria. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC X (Plant Laboratory Area): This area is a grassy area located south of the plant laboratory and west of the paved asphalt lot. Waste oil and laboratory chemicals were stored adjacent to the laboratory on a concrete covered pad. The storage area was constructed with concrete secondary containment and has been regulated under the facility's Spill Prevention Control and Counter Measure/Disaster Prevention

Control and Counter Measure Plan (SPCC/DPCC) since completion of the ECRA investigation. Contaminated soils were identified, and 5 yd^3 of soil were excavated to a depth of 1 foot. Post-excavation soil samples were taken for TPH, BNs, and PCBs and none of the constituents exceeded the NJDEP SCC. This AOC received an NFA determination from NJDEP on December 16, 1992. The PA also recommended an NFA for this AOC. In a letter from Huntsman to NJDEP on November 29, 2000, Huntsman documented the integrity of the secondary containment system and no spills or releases were identified. The facility is awaiting an NFA determination for this AOC.

AOC Y (Field South of Maintenance Shop): The area consists of a grassy field, south of the maintenance/fabrication shop (AOC C), that extends from the gravel-covered area surrounding the maintenance shop south to Fourth Street. This area was added as an AOC based on soil sample results from AOC C. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC Z (Background Sample): One soil sample was collected in the topographically high, northeastern corner of the site. The soil boring was completed to identify background conditions at the facility. No elevated targeted parameters were detected. The PA recommended an NFA for this AOC. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC AA (Air Compressor Area): The compressor area consists of a gravel-covered area surrounding the compressor building. According to plant personnel, temporary compressors historically were used in this area. During the ECRA investigation, this area was sampled and those areas that were found to have levels of TPH that exceeded the most stringent SCC were excavated during a five-phase excavation. About 107 yd^3 of soil were removed, post-excavation soil samples were collected and the areas were filled with clean backfill. This AOC received an NFA determination from NJDEP on December 16, 1992. During the PA site visit in January 2000, oil-stained soils were identified adjacent to the compressor building. In the SI/RI/RAR, this AOC was renamed AOC 7. Test pits were excavated, and three soil samples were taken from the most visibly stained areas. The samples were analyzed for TPH, and none of them exceeded the most stringent SCC. NJDEP will not issue an NFA determination for this AOC until the results from additional post-excavation soil samples are received to verify a clean zone in this area. If results indicate levels below the NJDEP SCC, an NFA determination will be issued for this AOC.

AOC BB (Area East of Flare Gas Recovery): This area consists of a small gravel area located beneath a pipe rack in the central portion of the site. Stained surface soils were observed beneath the pipe rack in this area during previous ECRA activities. Soil investigations were conducted, and 5 cubic feet of soil were removed from the area. This AOC received an NFA determination from NJDEP on December 16, 1992. The PA also recommended an NFA determination for this AOC. The facility is awaiting an NFA determination for this AOC.

AOC CC (EPON Resin Facility Area): This area consisted of a paved area and a gravel-covered area surrounded by a gravel berm. The area is bordered on the east by railroad siding. EPON resin, a viscous

plastic-like substance, was transferred to and from railroad tank cars in this area. There was some evidence of cracking and spillage on the pavement in this area during the ECRA investigation. Following the ECRA investigation, the area was repaved and all surface drains were diverted to the chemical sewer. This AOC received an NFA determination from NJDEP on December 16, 1992. This area was taken out of service in 1994 and decommissioned by Huntsman in 1995. The PA also recommended an NFA for this AOC. However, an NFA determination will not be issued until results of integrity testing of the paved area are received. In a letter to NJDEP from Huntsman, dated November 29, 2000, Huntsman documented the integrity of the paved area. The facility is awaiting an NFA determination for this AOC.

AOC DD (Boiler Area): This area consisted of three boilers that used No.6 fuel oil and natural gas. During the previous ECRA investigation, staining of gravel and soil beneath a pipe rack was observed. The soil was sampled for TPH. None of the soil samples exceeded the NJDEP SCC. The three boilers were taken out of service in June 1999 and were cleaned as a part of the facility's decommissioning activities. During the PA site inspection in January 2000, stained soils were observed surrounding a concrete pad associated with a fan motor. In the SI/RI/RAR, this AOC was renamed AOC 8. The stained soils were excavated, and four post-excavation soil samples were collected. According to a letter from NJDEP to Huntsman, dated July 27, 2000, an NFA determination will be issued for this AOC.

AOC EE (Service Area): This area is located in the central portion of the facility. Surficial soil staining was observed during the previous ECRA investigations. The stained soils were sampled for TPH, and it was determined that no constituents of concern were present above the NJDEP SCC. This AOC received an NFA determination from NJDEP on December 16, 1992. The PA also recommended an NFA for this AOC. The facility is awaiting an NFA determiantion for this AOC.

AOC FF (Central Operations Area): In June 1988, while workers were excavating to uncover a leaking water line in the center of the production area, visibly impacted groundwater (sheen) was observed. Five monitoring wells were installed, but free product was not observed, and sample constituents were not detected above the most stringent SCC. During the ECRA investigation, soils in this area were excavated to a depth of 2 ft because of elevated TPH levels. The soils in this area received an NFA determination from NJDEP in December 1992. The PA also recommended an NFA. The facility is awaiting an NFA determination for groundwater for this AOC.

Groundwater: The groundwater immediately below the site has been classified as an NJDEP Class IIIA aquifer. The depth to groundwater is between 4.0 and 9.0 ft bgs. The groundwater flows south-southwest and discharges to Mantua Creek. Because NJDEP Class IIIA standards have not been established for the site yet, NJDEP Class IIA groundwater standards were used when preparing this checklist. Groundwater has been found to be contaminated with 1,1,2-trichloroethane; benzene; arsenic; and nickel above the NJDEP Class IIA groundwater standards in areas located within and downgradient of the main production area and chemical sewer system. Attachment 2 is a Ground Water Elevation Contour Map, which depicts the location of the groundwater monitoring wells that have been sampled over time.

Chemical Sewer: NJDEP is concerned with the integrity of the chemical sewer that runs throughout the manufacturing and production area of the facility. Previous investigations of the sewer were limited to

groundwater sampling, which NJDEP has indicated is not adequate. Therefore, additional investigation of the chemical sewer has been required by NJDEP.

References:

(1) Final Groundwater Monitoring Report of Environmental Cleanup Responsibility Act Compliance Activities for Shell Chemical Company, March 1999, BCM Engineers, Planners, Scientists and Laboratory Services.

(2) Preliminary Assessment for Huntsman Polypropylene Corporation, January 19, 2000, Roux Associates, Inc.

(3) Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, January 19, 2000, Roux Associates, Inc.

(4) Letter from NJDEP to Huntsman Corporation dated May 15, 2000, Subject: Inspection Results.

(5) Letter from NJDEP to Huntsman Corporation dated July, 27, 2000, Subject: Preliminary Assessment Report, Site Investigation Report, Remedial Investigation Report, and Remedial Action Report, dated January 19, 2000.

(6) Letter from Roux Associates, Inc., on behalf of Huntsman Corporation dated November 29, 2000, Subject: Response to the New Jersey Department of Environmental Protection's (NJDEP's) comment letter dated July 27, 2000.

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?

X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Groundwater: The groundwater beneath the site has been classified as an NJDEP Class IIIA aquifer because of the thickness and the aerial extent of the clay layer which is present and acts as an aquitard. Because NJDEP Class IIIA standards have not yet been established for the site, NJDEP Class IIA groundwater standards were used for comparison with contaminants detected in groundwater onsite. The depth to groundwater is between 4.0 and 9.0 ft bgs. The SI/RI/RAR included two groundwater sampling events, one in July 1999 and the second in October 1999. During the July 1999 groundwater sampling event, 12 monitoring wells (W-5, W-7, W-8, W-9, W-10, W-14, W-16, W-17, W-18, W-31, W-32, and W-34) were sampled for VOCs, BNs, metals, and PCBs. The location of the groundwater monitoring wells can be found in Attachment 2, the Ground Water Elevation Contour Map. The following parameters were found to exceed the Class IIA groundwater quality standards for at least one well: 1,1,2-trichloroethane (TCA); aluminum; arsenic; cadmium: iron; lead; manganese; nickel; and sodium. The aluminum, iron, and manganese are considered to be representative of background conditions at the site; therefore, based on the presence of silts and clays throughout the site, they were not sampled for during the October 1999 event. The sodium is not considered to be a result of facility operations, and the local surface water bodies are classified as saline estuary. The TCA was detected in only one monitoring well (W-5) at 5.1 micrograms per liter (ug/L). The NJDEP Class IIA groundwater quality standard for TCA is 1 ug/L. This contaminant was not found in any other well during this sampling event. This constituent was not resampled for during the October 1999 event.

A second groundwater sampling event was conducted in October 1999. Based on the turbid appearance

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[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).

of the groundwater samples and detected metal exceedances, a low-flow sampling method was used to more accurately characterize the metal concentrations detected in the groundwater. A total of 8 monitoring wells out of the original 12 sampled in July 1999 were sampled for one or more of the following parameters, based on selected metal exceedances from the July 1999 sampling event: arsenic, cadmium, lead, and nickel. The eight monitoring wells sampled in October 1999 are as follows: W-7, W-9, W-10, W-16, W-17, W-18, W-31, and W-34.

In addition, three groundwater grab samples were collected using Geoprobe® sampling techniques. The samples were collected in areas of potential concern where monitoring wells were not located. Two samples (GW Grab-2 and GW Grab-3) were collected at AOC 4, the Scrap Yard. GW Grab-1 was collected downgradient of the chemical sewer where cracks were noted in the concrete sewer drain (see Attachment 2 for grab sample locations). Table 1 summarizes the constituents detected in groundwater from the most recent sampling event (October 1999) and the preceding round of sampling (July 1999) that exceeded the Class IIA Groundwater Quality Standard: 1,1,2-trichloroethane; benzene; arsenic; and nickel. Benzene was detected in a groundwater grab sample (GW Grab-3) collected at the Scrap Yard at a concentration of 4.2 ug/L. No other exceedances of benzene have been found at this site. The groundwater contamination is located within and downgradient of the main production area.

TABLE 1

Constituent	NJDEP Class IIA Groundwater Quality Standard	GW Grab-3	W-5	W-7
Arsenic	8	33**	ND*	27**
Nickel	100	66**	41*	350**
1,1,2-Trichloroethane	3	0.58**	5.1*	ND*
Benzene	1	4.2**	0.47*	0.47*

Note:
Shaded areas indicate exceedances of Class IIA Groundwater Quality Standards.
* Indicates the results were from the July 1999 sampling event.
** Indicates the results were from the October 1999 sampling event.
ND means non-detect.
All values are in micrograms per liter (ug/L).

The above information was derived from the Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, dated January 19, 2000, Roux Associates, Inc.

References:

(7) Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, dated January 19, 2000, Roux Associates, Inc.

(8) Letter from NJDEP to Huntsman Corporation dated July, 27, 2000, Subject: Preliminary Assessment Report, Site Investigation Report, Remedial Investigation Report, and Remedial Action Report, dated January 19, 2000.

(9) Letter from Roux Associates, Inc., on behalf of Huntsman Corporation dated November 29, 2000, Subject: Response to the New Jersey Department of Environmental Protection's comment letter dated July 27, 2000.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2].

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

Geology and Hydrogeology:

The facility is located in the Atlantic Coastal Plain Physiographic Providence, which is characterized by a southeast-dipping wedge of unconsolidated sediments. The sediments consist of interbedded sands, silts, and clays that thicken down dip. The coastal plain sediments are underlain by Pre-Cambrian crystalline rock.

The site is directly underlain by the Woodbury Clay and the Merchantville Formation. The Woodbury Clay, a regional confining unit, is described as a thick, massive, clayey silt. The underlying Merchantville Formation consists primarily of clays and silts, with localized lenses of fine to coarse sands. The Merchantville Formation, together with the Woodbury Clay, serve as an effective aquitard overlying the Potamac-Raritan-Magothy aquifer system. The Merchantville-Woodbury confining bed has a thickness of about 60 ft in the area of the site.

In some areas of the site, the Merchantville-Woodbury bed is covered with a thin veneer of recent silty sand fill material from site construction activities. The thickness of the silty sand fill ranges in thickness from 0.5 to 2 ft bgs.

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[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

The surficial geologic unit located at the site is the Woodbury Clay, which falls within the NJDEP Groundwater Class IIIA aquitard region. The shallow groundwater flow in the Woodbury Clay is to the south toward Mantua Creek. The Woodbury Clay meets the following requirements for the Class IIIA classification: (1) The formation has to be at least 50 ft in thickness, (2) hydraulic conductivity must be approximately 0.1 foot per day or less, and (3) the aquitard aerial extent of at least 100 acres exists.

Attachment 2 depicts the facility with monitoring well locations and the groundwater flow patterns for the site. Groundwater below the site flows in a south-southwest direction toward Mantua Creek. Attachment 3, Site Map, depicts the facility location in relation to Mantua Creek.

As shown below in Table 2, Monitoring Wells W-16, W-17, and W-18, located furthest downgradient of the main production area and at the southern edge of the facility, did not have any exceedances above the NJDEP Class IIA GWQS for those constituents identified in Table 1 for either the July 1999 or the October 1999 sampling events. Additionally, there were no detections of any other constituents.

TABLE 2

Constituent	NJDEP Class IIA Groundwater Quality Standard	W-16	W-17	W-18	Date Sampled
Arsenic	8	ND	ND	ND	10/99
Nickel	100	ND	29	36	10/99
1,1,2-Trichloroethane	3	0.58	0.58	0.58	7/99
Benzene	1	0.47	0.47	0.47	7/99

Note:
All values are in micrograms per liter (ug/L).

The above information was derived from the Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, dated January 19, 2000, Roux Associates, Inc.

In a letter from NJDEP to Huntsman Corporation dated July, 27, 2000, NJDEP requested that the TCA detected in Monitoring Well W-5 (in the production area of the facility), be further delineated. On November 29, 2000, Huntsman prepared a letter in response to NJDEP's request for further delineation of TCA, indicating that the exceedance of TCA had already been delineated because this constituent was not detected in upgradient, sidegradient, or downgradient wells. Additionally, Huntsman stated that the migration of TCA is expected to be very slow because of the low hydraulic conductivity of the Woodbury Clay geologic unit. They also stated that the concentrations of any of the constituents at the center of the site would decrease through the effects of dilution prior to reaching the most downgradient wells. This has been substantiated by the data collected, as discussed in the response to Question 2. Therefore, the contaminants have stabilized and are not expected to migrate beyond the facility boundary.

References:

(10) Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, dated January 19, 2000, Roux Associates, Inc.

(11) Letter from NJDEP to Huntsman Corporation dated July, 27, 2000, Subject: Preliminary Assessment Report, Site Investigation Report, Remedial Investigation Report, and Remedial Action Report, dated January 19, 2000.

(12) Letter from Roux Associates, Inc., on behalf of Huntsman Corporation dated November 29, 2000, Subject: Response to the New Jersey Department of Environmental Protection's comment letter dated July 27, 2000.

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

_____ If yes - continue after identifying potentially affected surface water bodies.

__X__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination"does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The highest concentrations of the constituents in groundwater have been found in the center of the site. The wells closest to Mantua Creek had constituents that were either non-detect or below the GWQS. It is expected that the concentrations of the constituents at the center of the site would be reduced through the effects of dilution prior to discharging to Mantua Creek. In addition, because of the Woodbury Clay geologic unit, constituent migration is expected to be very slow because of the hydraulic conductivity of the clay unit. A river dilution study was conducted to determine the potential impact of groundwater contamination from the facility on Mantua Creek. The constituents that were targeted in the dilution study were: benzene; TCA; arsenic; and nickel. The model that was used does not account for biodegradation (for benzene and TCA) or dispersion, which would reduce groundwater constituent concentrations even further before reaching Mantua Creek. The dilution model depicts that through mixing alone, the constituents of concern will not impact Mantua Creek above applicable Surface Water Quality Standards (SWQS). For the purpose of the river dilution study, the constituents of concern were defined as those that have been detected in the facility groundwater at concentrations exceeding both the GWQS and the SWQS. TCA and nickel have been detected above the GWQS, but they were not detected above the SWQS. Therefore, TCA and nickel were not considered for this dilution study. The model was based on mixing effects and assumed a constituent loading based on the highest concentrations of the constituents in the groundwater. Listed below is a summary of the surface water constituent concentrations in Mantua Creek based on the results of the river dilution model:

TABLE 3

Constituents	Surface Water Quality Standard (ug/L)	Maximum Concentrations in Site Groundwater (ug/L)	Calculated Surface Water Constituent Loading (pounds / day)	Calculated Surface Water Concentration (ug/L)
Benzene	0.15	4.2	1.24E-05	0.0002
Arsenic	0.017	41	1.21E-04	0.0023

Note:

All values are in micrograms per liter (ug/L).

Source: Information was taken from the Letter from Roux Associates, Inc. on behalf of Huntsman Corporation dated November 29, 2000, Subject: Response to the New Jersey Department of Environmental Protection's (NJDEP's) comment letter dated July 27, 2000.

The results show that the calculated surface water concentration is less than the SWQS for Mantua Creek. Therefore, the results of the river dilution study demonstrate that the groundwater constituents at the site will not have a significant impact on Mantua Creek. Huntsman has requested an NFA determination from NJDEP for the groundwater at the facility as a Class IIIA aquifer classification.

References:

(13) Site Investigation/Remedial Investigation/Remedial Action Report for Huntsman Polypropylene Corporation, dated January 19, 2000, Roux Associates, Inc.

(14) Letter from NJDEP to Huntsman Corporation dated July, 27, 2000, Subject: Preliminary Assessment Report, Site Investigation Report, Remedial Investigation Report, and Remedial Action Report, dated January 19, 2000.

(15) Letter from Roux Associates, Inc., on behalf of Huntsman Corporation dated November 29, 2000, Subject: Response to the New Jersey Department of Environmental Protection's comment letter dated July 27, 2000.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?

___ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or ecosystem.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

This question is not applicable (see answer to Question 4).

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

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and 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 specialist, including an 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 ecosystem.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

This question is not applicable (see answer to Question 4).

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[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 waterbodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

** See rationale summarized below.

Rationale and Reference(s):

Due to the unique geology and hydrogeology at this site, NJDEP has determined that continued groundwater monitoring is not necessary, since contamination detected at the site is minimal and it is confined. The downgradient monitoring wells at the site show no exceedances of the NJDEP GWQS and, as shown in the modeling performed by Huntsman, the limited contamination that exists in the center of the site will decrease to levels below standards before reaching Mantua Creek. The aquifer under Huntsman is classified as Class IIIA, due to the thickness and aerial extent of the clay layer underlying the site. This clay layer impedes the limited groundwater contamination from migrating through it to the underlying Potomac-Raritan-Magothy aquifer system. Additionally, there will never be any potable uses for this aquifer since there is not enough available water to supply wells. The NJDEP is expected to issue a site-wide NFA determination.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_X_ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Huntsman Polypropylene Corporation, EPA ID #NJD002482602 located at Mantua Grove Road, West Deptford Township, New Jersey. 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: __original signed by_____ Date:__03/21/01_____

Kristie Siroonian
Environmental Scientist
Tetra Tech EM Inc.

Reviewed by: __original signed by_____ Date:__03/21/01_____

Douglas Sullivan
Project Manager
Tetra Tech EM Inc.

__original signed by_____ Date:__03/15/01_____

Elizabeth Butler, Project Manager
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__original signed by_____ Date:__03/15/01_____

Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: __original signed by_____ Date:__03/19/01_____

Raymond Basso, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

U.S. Environmental Protection Agency
RCRA Records Center
290 Broadway, 15th Floor
New York, New York 10007-1866

New Jersey Department of Environmental Protection
Bureau of Environmental Evaluation and Cleanup Responsibility Assessment
Industrial Site Evaluation Element
401 East State Street
Trenton, NJ 08625-0432

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Attachments

The following attachments have been provided to support this EI determination.

Attachment 1 Areas of Concern (AOC) Map
Attachment 2 Ground Water Elevation Contour Map
Attachment 3 Facility Site Map

Attachments truncated, see facility file (MSS, 06/13/02)