DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **Johnson & Johnson Pharmaceutical Research and Development, LLC**
Facility Address: **McKean and Welsh Roads, Spring House, Pennsylvania 19477**
Facility EPA ID #: **PAD000731471**

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 #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

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

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

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

Rationale and Reference(s):
Johnson & Johnson Pharmaceutical Research and Development, Limited Liability Company (LLC) (J&J PRD or facility) owns and operates an active research and development (R&D) facility that occupies a 170-acre grassy campus at the corner of McKean and Welsh Roads, southeast of the Route 309 and Route 63 intersection. The area is a mixed residential/commercial community known as Spring House (deemed a Census Designated Place [CDP] and not an incorporated community). Residential property is located west, north, and east of the facility. Additionally, golf courses are located to the northeast and southeast of the facility. A YMCA was recently constructed directly northwest of the McKean Road entrance to the facility. Route 309 abuts the facility's southwest property boundary, beyond which is Dow Chemical (formerly Rohm and Haas, Inc. [RH]), another pharmaceutical research facility. (Note: A brief review of the adjacent Dow Chemical [former RH] facility and its possibility of environmentally impacting the J&J PRD facility were conducted. In 1986, a release of chlorinated solvents that impacted groundwater occurred at the neighboring RH facility. Contaminated soil was removed and the groundwater was treated to remove trichloroethene [TCE], tetrachloroethene [PCE], and total 1,2-dichloroethene [DCE] over a six year period [1990 through 1996]. The 1996 Environmental Indicator [EI] for the RH facility states that contaminated groundwater had not migrated beyond the RH facility property boundaries. The May 2010 EI status update for the RH facility states that the concentrations of chlorinated solvents [primarily PCE and TCE] identified in groundwater at the RH facility have remained low, and that the groundwater plume is stable and remains within the RH facility property boundaries. Groundwater monitoring at downgradient monitoring wells is ongoing at the RH facility.)

Access to the J&J PRD facility is via two separate entrances, one on McKean Road and one on Welsh Road. Access to the property is unrestricted during operating hours. Gates are present at each entrance to the facility, which are closed after operating hours. Building entrances are secured through access via electronic key cards. The facility has 24-hour manned security.

The facility consists of a series of interconnected two, three, and four story buildings that are divided into the administration, commons, engineering, manufacturing, research (Building 41), and drug safety and evaluation (DSE) areas. The majority of the buildings were constructed in 1980 and 1981. Day-to-day administrative duties (e.g., executive offices, accounting, marketing, technical services, and dining areas) are conducted in the administrative and commons areas. The facility's seldom-used natural gas boilers and water softening equipment for the public water influent are located in the basement of the engineering area. The manufacturing area is primarily vacant since the cessation of the manufacturing operations in 2004. R&D is carried out on all four floors of the research area and the fourth floor of the DSE area. The facility's hazardous waste storage areas are located in the research area (Building 41). The facility's pathological waste incinerator was located on the second floor of the DSE area; however, it was dismantled in 1993.

In 2006, the building that houses the main wastewater equalization/neutralization process was constructed east of the fire pond. In 2007, a new four-story research building (Building 42) was constructed. This building consists primarily of laboratory space. Several boilers and a wastewater equalization/neutralization system that handles only wastewater generated in Building 42 are located on the first floor. In addition, three of the facility's aboveground storage tanks

[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).

(ASTs) are situated in the 4,000 square foot AST containment building located approximately 210 feet southwest of the research area (Building 41).

A man-made fire pond that is approximately one acre in area by 10 feet deep is located 135 feet north of the administration area. The facility's Preparedness, Prevention, and Contingency (PPC) Plan dated October 1, 1991, states that the water in the fire pond is derived from surface water runoff at the facility and direct discharges of shallow groundwater. There is a gate-controlled discharge from the pond which is periodically released to a small, unnamed intermittent stream located approximately 300 feet north of the pond via a drainage pipe that is connected to a spillway. Other miscellaneous site features include a softball field and tennis courts located on the northern corner of the property. A guest house was formerly located in this area. The PPC plan states that a water supply well was located at the guest house which was used occasionally. The guest house was demolished in 2003. At the time of a site visit that took place on October 22, 2010, facility representatives stated there are no wells on the property. A sanitary sewer pump station near the eastern corner of the property accepts treated wastewater and sanitary waste from the facility and nearby residences.

Approximately 25 percent of the property consists of impermeable surfaces such as the facility buildings and asphalt/concrete parking areas, access roads, and loading areas. The remaining 75 percent of the property is grass-covered or landscaped, which includes the one acre fire pond and a small wetland area on the east side of the property.

Prior to 1977, the property consisted of two parcels of agricultural land. In 1979, J&J PRD purchased the land and began construction on the property in 1980. According to a letter dated March 16, 1993, the facility was operated by McNeil Pharmaceutical (later referred to as Ortho-McNeil Pharmaceutical [Ortho-McNeil]); however, the facility was always owned by the parent company, J&J PRD. On January 3, 2005, J&J PRD assumed complete operation of the facility from Ortho-McNeil. J&J PRD continues to own and operate the facility at this location.

The 170 acre Spring House campus is currently home to three R&D firms, including J&J PRD (developer of small molecule drugs or tablets), Centocor (developer of large molecule drugs or injectables), and Cordis (developer of stents for cardiac patients). Centocor and Cordis belong to the J&J PRD family of companies. J&J PRD manages all wastes streams from all three firms operating at the facility.

Operations conducted at the facility have consisted of laboratory-scale R&D and manufacturing of pharmaceuticals. R&D, which has included chemical synthesis, analytical chemistry, drug metabolism, toxicology, biochemistry, and pharmacology, was conducted on all four floors of the research area (Building 41) and the fourth floor of the DSE area. In 2007, J&J PRD constructed a new four-story, 215,000 square foot research center known as Building 42. Building 42 houses the R&D operations from the recently closed Exton and Cranberry facilities. R&D is conducted on the second through fourth floors, while the first floor houses mechanical space and a waste equalization/neutralization for the building.

Small quantities of virgin solvents and chemicals are stored in the laboratories. Bulk storage of virgin solvents and chemicals prior to laboratory use was previously on the fourth floor of the research area (Building 41). Currently, there are two main raw materials storage areas located at the facility. Small volume reagents (100 milliliters or less) are stored in bins in climate-controlled glass front cabinets on the first floor of Building 42. Raw solvents are stored inside of locked fireproof cabinets on the first floor of Building 41. The bottles in which the materials are stored are polycoated which reduces the chance of spills if the bottles are dropped (the bottle will not shatter). Both of the storage areas were clean and well-maintained during the October 22, 2010 site visit.

Manufacturing processes that included formulation, preparation, and packaging of PANCREASE® brand pancrelipase capsules were conducted on the first floor of the manufacturing area beginning in 1983. The facility ceased manufacturing of pancrelipase capsules sometime in 2004 and is in the process of dismantling the associated equipment. The facility is currently operating only as a R&D facility.

The facility operates as a large quantity generator (LQG). Previous waste inspections specifically indicated the following wastes were generated at the facility: methanol, methyl ethyl ketone (MEK), ethyl acetate, isopropanol, methylene chloride, chloroform, sulfuric acid, hydrochloric acid, xylene, and cyanide. Other wastes listed on the original Part A Hazardous Waste Permit Application dated November 18, 1980, in addition to those already listed included: acetone, dimethyl benzene, ethyl ether, ethylene dichloride, 2-propanone, toluene, benzene, and mercury. Incinerator ash and

baghouse dust also were generated at the facility. The waste materials were typically drummed and shipped off-site for disposal. The facility formerly operated a closed-loop distillation unit to reclaim small quantities of xylene from water for reuse in the laboratories.

Typical wastes currently generated at the facility primarily consist of waste solvents and wastewater. Non-hazardous buffers and salts, and biological and infectious wastes (generally research animal carcasses) also are generated at the facility. Wastes generated by all entities operating at the facility are managed by J&J PRD.

Eight solid waste management units (SWMUs) have been present during the history of the facility. The following table provides details on the eight SWMUs.

SWMU No.	SWMU Name	Description	Status
1	Drummed Solvent Storage Area	A 24- by 48-foot room located in the research area (Building 41) used to temporarily store waste chemicals and raw products.	Storage capacity of this space was expanded in 2008. No visual evidence of spills or releases and no reported releases.
2	Solvent Drum Storage Area	Area consisting of a concrete floor and cinderblock walls adjacent to two baghouse particulate collectors in an enclosed, open-air courtyard located in the northern corner of the former manufacturing area. Used to store waste solvents (that included isopropyl alcohol and Fast Dry [mineral spirits, methylene chloride, and PCE] used for equipment cleaning) and virgin solvents.	Taken out of service in 2004 with the cessation of manufacturing operations. No visual evidence of spills or releases was observed, and none were reported.
3	Waste Solvent Storage Tank	6,000-gallon underground storage tank (UST) (Tank 006) used to collect waste solvent from the former manufacturing building. Located approximately 250 feet north of the former manufacturing building in a grassy common area.	Removed July 2004. No visual evidence of spills or releases was observed, and none were reported. Currently grass-covered and landscaped.
4	Aqueous Waste Storage Tank	3,000-gallon fiberglass UST (Tank 005) utilized for the collection of wastewater generated in the chemical development laboratory located in the research area (Building 41).	Excavated and replaced in February 1990 with an AST (Tank 013A). Contaminated soil was excavated during closure of the UST. Currently grass-covered. No visual evidence of releases in the area of the former UST or AST.
5	Research Animal Unit Incinerator	Also known as the pathological waste incinerator. Located on the second floor of the facility's DSE area. Utilized to burn animal carcasses, tissue, paper, and other trash generated in this unit.	Operated from 1981 until it was shutdown and dismantled in December 1992. At the time of the 1989 Preliminary Assessment (PA), there were no signs of releases. During the 2010 site visit, the exact location of the incinerator could not be identified.
6	Trash Incinerator	Located in the northwestern corner of the engineering area, the incinerator (also known as the municipal waste incinerator) was utilized to burn non-hazardous waste including	Operated from 1983 until it was shutdown and dismantled in January 1993. At the time of the 1989 PA, there were no signs of releases.

		cardboard and plastic.	
7	Manufacturing Building Baghouse	Located in an open-air courtyard in the northern corner of the former SWMU 2, SWMU 7 consisted of two baghouses that captured dusts generated by the manufacturing building mixers, compressors, and encapsulation equipment.	Removed from service in 2004 with the cessation of manufacturing activities and physically removed from the facility between 2005 and 2010. Currently, the area is empty, and no visual evidence of releases exists.
8	Catalytic Incinerator Baghouse	Located with the catalytic incinerator in an open-air courtyard on the northeastern side of the former manufacturing building. Vaporized spray-coating solvent (a formulation of isopropyl alcohol and ethyl acetate) containing suspended particles was passed through the baghouse for collection and the vapors were sent to the incinerator.	Removed from service in 2004 with the cessation of manufacturing activities. The baghouse was physically removed from the facility between 2005 and 2010. Currently, the area is empty with the exception of the catalytic incinerator, and no visual evidence of releases exists.

Multiple USTs and ASTs have been in use at the facility as shown on the table below. According to UST closure documentation and confirmed by facility representatives during the 2010 site visit, all USTs have been removed at the facility. In addition, several ASTs have recently been removed at the facility as shown on the table below. There are currently six ASTs in use at the facility.

Tank No.	Capacity Gallons	Contents	Status
USTs			
001	40,000	No. 2 Fuel (Heating) Oil	Removed March 1991
002	10,000	No. 2 Fuel (Heating) Oil	Removed May 1991
003	1,000	Gasoline	Removed January 1992
004	550	Diesel	Removed January 1992
005	3,000	Wastewater Mixture (SWMU 4)	Replaced February 1990 by 013A
006	6,000	Aqueous Waste Solvent (SWMU 3)	Replaced September 1990 / Removed July 2004
007	4,000	Ethyl Acetate	Replaced September 1990 / Removed July 2004
008	6,000	Isopropyl Alcohol	Replaced September 1990 / Removed July 2004
009	550	Diesel	Removed March 1990
010	1,000	Gasoline	Removed April 1998
ASTs			
010A	300	Diesel	Installed January 1983
011A	1,000	Gasoline	Installed April 1998 Removed February 2007
012A	275	Diesel	Installed December 1989 Removed August 2007
013A	3,000	Aqueous Wastewater (SWMU 4)	Installed February 1990 Removed November 2008

014A[1]	6,000	Diesel	Installed May 1991
015A	20,000	No. 2 Fuel (Heating) Oil	Installed May 1991 Back-up fuel for boilers
016A	20,000	No. 2 Fuel (Heating) Oil	Installed May 1991 Back-up fuel for boilers
017A	1,000	Gasoline	Installed May 1991 Removed January 2007
018A[1]	2,500	Diesel	Installed May 2003
019A[1]	1,750	Diesel	Installed November 2009

[1] Currently registered with PADEP.

Groundwater: Beginning in 1990, the facility implemented a replacement/closure program for its USTs. All of the USTs were ultimately removed from the facility by 2007, and remedial actions were conducted at several of the UST sites. In addition, several spill response actions have been conducted at the facility since 2003, most of which were issued No Further Action (NFA) determinations under Land Recycling and Environmental Remediation Standards Act (Act 2). There have been several documented releases to soil at the facility, mostly associated with the USTs and conveyance lines. It has been documented, with PADEP concurrence, that groundwater was not impacted resulting from these releases. Therefore, it is concluded that groundwater is not known to be contaminated.

Depth to shallow groundwater in the vicinity of the site is unknown. There have been no documented static water level measurements for any of the shallow monitoring wells that were formerly located at the facility. However, UST closure reports indicated that groundwater was observed to seep into the excavations. These excavations extended no more than 15 feet below ground surface (bgs), indicating groundwater is shallow. In addition, the facility's PPC plan dated October 1, 1991 indicates that the fire pond located on the property is spring-fed. This was confirmed by the facility representatives during the 2010 site visit.

A search of the Pennsylvania Department of Conservation and Natural Resources (DCNR) Groundwater Information System (PaGWIS) (accessed June 7, 2010) indicates that 40 groundwater wells are located within a 0.5-mile radius of the facility. The majority of these wells (21 of the listed wells) appear to be monitoring wells ranging in depth from 21.5 to 118 feet. These wells were installed in the mid to late 1980s at the RH facility located approximately 1,200 feet southeast of the facility. The remainder of the listed wells includes the North Wales Water Authority (NWWA) public supply well (500 feet deep), several domestic supply wells on properties located in residential areas to the north and east of the facility, business-related public supply wells on the Old York Road Country Club property located directly southeast of the facility, and several wells on the former American Paint and Chemical Company property located directly northeast of the facility.

As previously discussed, there has been no known impact to groundwater related to the reported releases at the facility; therefore, exposure to contaminated groundwater is not expected at this time.

Surface Water: The facility's NPDES permit was superseded by the no exposure certification. The facility's operations (including the ASTs) are contained entirely within the on-site buildings. Accordingly, no direct discharges to nearby surface water bodies are expected. It has been stated that groundwater directly discharges to the on-site fire pond, and shallow groundwater flow is expected to be to the northeast toward the intermittent stream.

As previously discussed, there has been no known impact to groundwater related to the reported releases at the facility; therefore, exposure to surface water via contaminated groundwater is not expected at this time.

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)?

_____ 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 and Reference(s):

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

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

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

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

Rationale and Reference(s):

[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.

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 eco-systems 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 eco-system.

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[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):

[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 eco-systems 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 eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

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

Rationale and Reference(s):

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

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

Rationale and Reference(s):

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 **Johnson & Johnson Pharmaceutical Research and Development, LLC** facility, EPA ID # **PAD000731471** , located at **McKean and Welsh Roads, Spring House, Pennsylvania 19477** .

Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 1/13/12

(print) Jennifer A. Wilson, P.G.

(title) Licensed Professional Geologist

Supervisor (signature) _____ Date 1/13/2012

(print) Mohamad Mazid, Ph.D., P.E.

(title) Chief, Engineering Services

(EPA Region or State) PADEP, Southeast Regional Office

PJW 2-15-12

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
South East Regional Office
2 E Main Street
Norristown, PA 19401

Contact telephone and e-mail numbers

(name) **Jennifer A. Wilson**
(phone#) **484-250-5744**
(e-mail) jewilson@pa.gov