RECORD OF DECISION

Ringwood Mines/Landfill Superfund Site
Operable Unit Two

Borough of Ringwood
Passaic County, New Jersey

June 30, 2014

PREPARED BY:

U.S. Environmental Protection Agency
Region II

255080

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Ringwood Mines/Landfill Superfund Site
Borough of Ringwood, Passaic County, New Jersey
Operable Unit Two (OU2)

Superfund Site Identification Number: NJD980529739

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the selected remedy to address waste contained in three disposal areas of the Ringwood Mines/Landfill Superfund Site (Site), located in the Borough of Ringwood, Passaic County, New Jersey. These three disposal areas, known as the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, comprise OU2 of the Site. The selected remedy was chosen by the U.S. Environmental Protection Agency (EPA) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§9601-9675, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this Site (see Appendix IV).

The New Jersey Department of Environmental Protection (NJDEP) was consulted on the planned remedy for OU2 in accordance with CERCLA §121(f), 42 U.S.C. §9621(f), and it concurs with the selected remedy (see Appendix V).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The response action described in this ROD addresses waste contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site. It represents the second of three planned remedial phases, or operable units, for the Site. The third phase (OU3) addresses the groundwater across the Site. A remedial investigation/feasibility study for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater. A remedy for OU1 was originally intended to comprehensively address contamination at the Site. However, subsequent to the completion of the OU1 remedy and deletion of the Site from the National Priorities List, additional contamination was found at the Site that resulted in the need for further evaluation of conditions at the Site and implementation of OU2 and OU3.

The major components of the Selected Remedy for each of the disposal areas include the following:

Peters Mine Pit Area

- Dewatering of the Peters Mine Pit pond with proper disposal of removed water;

- Excavation of soil and fill material from the fill area surrounding the Peters Mine Pit down to native soil, bedrock or the water table, whichever is encountered first. If drums of waste or paint sludge are encountered, the excavation would continue until these materials are removed. Segregated non-hazardous soil or fill from this excavation, if suitable, may be reused as fill for the excavated area and/or the Peters Mine Pit; all other excavated material will be disposed of off-site at an appropriately permitted facility;

- Placement and compaction of a sufficient amount of clean fill in the Peters Mine Pit to raise the elevation to a level at least two feet above the average surface water elevation of the removed pond. Debris-free and non-hazardous mine tailings from the O'Connor Disposal Area (OCDA) may also be used as fill for this purpose in lieu of importing clean fill from an off-site source;

- Placement and compaction of clean fill, as needed, to fill in and/or level off the excavated area surrounding the Peters Mine Pit;

- Recontour and take other measures, as needed, to prepare the surface of the Peters Mine Pit area to ensure that it provides an adequate base for a geotextile fabric and subsequent cap;

- Installation of a geotextile fabric over the fill materials in the Peters Mine Pit Area. This will be followed by the placement of a sufficient amount of clean fill and topsoil on top of the fabric to cap the Peters Mine Pit and elevate the center of the cap to a level which is at least three feet above that of the perimeter area and, thereby, create positive drainage away from the center of the cap onto the perimeter area and then away from this area onto surrounding terrain;

- Restoration of the Peters Mine Pit Area with a variety of trees and other vegetation which are indigenous to the Ringwood area, with the intent of making this an area that can be used for recreational purposes as part of Ringwood State Park;

- Implementation of institutional controls, such as deed notices, to prevent use of the capped area for any purposes other than conservation land/recreational activities;

- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and

- Monitoring of groundwater quality in the Peter's Mine Pit Area until a groundwater remedy is selected for the Site.

Cannon Mine Pit Area

- Consolidation of shallow fill materials located around the Cannon Mine Pit into the pit;
- Placement and compaction of clean fill material in the Cannon Mine Pit, as necessary to raise the grade to promote drainage away from the pit;
- Excavation and off-site disposal of any drums of waste that may be encountered during consolidation and grading of fill material;
- Installation of a permeable engineered soil cap, consisting of a geotextile fabric and a minimum of eighteen inches of clean soil and six inches of topsoil, over the Cannon Mine Pit;
- Restoration of the Cannon Mine Pit Area with vegetation in order to stabilize the surface of the soil cap;
- Implementation of engineering controls, such as the installation of fencing and the placement of boulders, to restrict access to the capped area;
- Implementation of institutional controls, such as deed notices, to protect the integrity of the permeable cap;
- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and
- Monitoring of groundwater quality in the Canon Mine Pit Area until a groundwater remedy is selected for the Site.

O'Connor Disposal Area

- Excavation of all soil/fill material in the OCDA down to the top of the underlying mine tailings with disposal and/or recycling of all of the excavated material at off-site permitted disposal facilities. Debris-free and non-hazardous mine tailings underlying the fill material may be used as fill material for the Peters Mine Pit;
- Placement of at least six inches of topsoil throughout the excavated area to enable revegetation of the OCDA;
- Restoration of any wetlands in the OCDA that are disturbed during implementation of the

remedy, in coordination with the New Jersey Department of Environmental Protection's (NJDEP's) Land Use Program;

- Monitoring of groundwater quality in the OCDA until a groundwater remedy is selected for the Site.

The Borough of Ringwood owns the land which comprises the OCDA. The Borough has informed EPA that it wishes to construct a new recycling center on the OCDA, and that it has also taken steps towards achieving that goal. The Borough has passed a resolution to construct the new recycling center; it has hired an engineering firm to prepare detailed engineering plans; it is seeking financing for the planned recycling center; and it is seeking the approvals needed to construct the new recycling center at the OCDA. Given this, EPA has identified a contingency remedy for the OCDA which would accommodate the Borough's plans to reuse the OCDA as the site for the new Borough recycling center EPA will select the contingency remedy and appropriately document the selection of the contingency remedy if the following occurs:

(A) The Borough provides EPA with the following within six months of the date of this ROD: (1) detailed engineering plans for the new recycling center; (2) financial assurance(s) indicating that sufficient funds will be available for construction of the recycling center; and (3) assurances and supporting documentation indicating that the construction of the contingency remedy, including the recycling center, can and will be completed within either a shorter or, at least within a comparable timeframe than it would take to implement the selected remedy, described above; and

(B) EPA determines that the information and assurance(s) that the Borough has submitted to EPA, as described above, are sufficient to allow the contingency remedy to be implemented.

The major components of the contingency remedy for the OCDA include:

- Consolidation of fill from the fringe areas of the OCDA to the center of this area to provide level land that would permit reuse of this area;

- Installation of a minimum two-foot thick engineered permeable soil cap over the consolidated fill materials, which will consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil;

- Placement of six inches of clean fill in excavated areas beyond the engineered cap where soil/fill was moved for consolidation under the cap to ensure proper drainage and a suitable substrate for planting;

- Revegetation of the engineered soil cap and the surrounding fill areas;

- Restoration of wetlands in the OCDA disturbed during implementation of the selected remedy in coordination with the NJDEP's Land Use Program;

- Implementation of engineering controls, such as the installation of fencing and the placement of boulders, to restrict access to the capped area;

- Implementation of institutional controls, such as deed notices, to maintain the integrity of the cap;

- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and

- Monitoring of groundwater quality in the OCDA until a groundwater remedy is selected for the Site.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in Section 121 of CERCLA, 42U.S.C. § 9621. It is protective of human health and the environment, meets a level of control of the hazardous substances, pollutants and contaminants which meets the federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, is cost effective and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The selected remedy may satisfy the statutory preference for treatment as a principal element of the remedy (i.e., reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment), as any paint sludge or contents of drums excavated as part of this remedy may require treatment/stabilization prior to disposal. In-situ stabilization of the contaminated fill material in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas is the only treatment technology determined to be potentially viable for treatment of the fill. However, EPA has determined that implementation of this technology is not practicable, due to the depth of disposal and the heterogeneous nature of the fill.

Because the selected remedy for OU2 will result in hazardous substances, pollutants, or contaminants remaining above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted no less often than once every five years to ensure that the remedial action remains protective of human health and the environment.

DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this site.

- Chemicals of concern and their respective concentrations may be found in the "Site Characteristics" section.

- Baseline risk represented by the chemicals of concern may be found in the "Summary of

Operable Unit Two Risks" section.

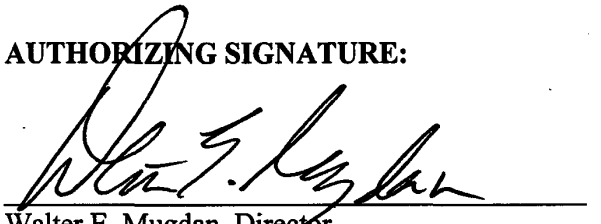
- Cleanup levels established for chemicals of concern and the basis for these levels can be found in the "Remedial Action Objectives" section.

- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment and ROD can be found in the "Current and Potential Future Site and Resource Uses" section.

- Estimated capital, operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected can be found in the "Description of Alternatives" section.

- Key factors that led to selecting the remedy (i.e., how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decisions) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

AUTHORIZING SIGNATURE:



June 30, 2014

Walter E. Mugdan, Director
Emergency & Remedial Response Division
U.S. Environmental Protection Agency, Region II

Date

RECORD OF DECISION

DECISION SUMMARY

Ringwood Mines/Landfill Superfund Site
Ringwood Borough, Passaic County
New Jersey

U.S. Environmental Protection Agency
Region II
New York, New York
June 2014

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SITE NAME, LOCATION AND BRIEF DESCRIPTION

The Ringwood Mines/Landfill Superfund Site (Site), EPA ID# NJD980529739, consists of approximately 500 acres in a historic iron mining district in the Borough of Ringwood, Passaic County, New Jersey (see Appendix I, Figure 1). The Site, which is approximately 1.5 miles long and 0.5 miles wide, includes forested areas, areas of overgrown vegetation, abandoned iron mine pits and shafts, and a closed municipal landfill. Portions of the Site are currently used as State of New Jersey parkland (Ringwood State Park), utility corridors (Public Service Electric & Gas and Rockland Electric Company), Borough of Ringwood facilities, including a Recycling Center and a Public Works yard, a power sub-station and open space (Borough of Ringwood property). In addition, 48 residential properties are dispersed throughout the Site. Residents living within the boundaries of the Site currently receive their drinking water from the municipal water supply, which obtains water from well fields located in a different watershed approximately two miles southeast of the Site. The Site is drained by four brooks that ultimately lead to the Wanaque Reservoir, located approximately one mile south of the Site. The Wanaque Reservoir serves as a source of drinking water for over two million New Jersey residents.

United States Census Bureau records indicate that 866 people live within one mile of the Site. At least 200 people are estimated to live within the 48 residences located within the Site boundaries. Many of the residents living within the boundaries of the Site are members of the Ramapough Lenape Indian Nation, which is recognized as a Native American tribe by the State of New Jersey. Members of this community have strong ties to the land and hunt game and consume vegetation gathered from the Site.

EPA has been designated as the lead agency for cleanup of the Site, with NJDEP functioning in a support role. Investigations and cleanup actions conducted at the Site have been primarily funded by the Ford Motor Company (Ford), which has been identified as a potentially responsible party (PRP).

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The land which comprises the Site has been utilized for the mining of iron ore almost continuously from the mid-1700s to the early 1900s. Mining operations conducted at the Site consisted of the crushing and grinding of the iron ore, with magnetic separation of the iron from the other ore constituents (tailings). It has been reported that much of the mine tailings were sold off as road dressing. However, mine tailings are found throughout the Site, including in a former mining pit (Peters Mine Pit) and a former low-lying area (O'Connor Disposal Area) which was utilized for the settlement of waste mine tailings from wet ore processing operations.

In January 1965, the Ringwood Realty Corporation, a wholly-owned subsidiary of Ford, purchased more than 400 acres at the Site. Records indicate that in 1967, the Ringwood Realty Corporation entered into a contract with the O'Connor Trucking and Haulage Corporation for the disposal of wastes generated at the Ford factory located in Mahwah, New Jersey. EPA believes that O'Connor Trucking disposed of various waste which it received from Ford, including plant trash, paint sludge, drummed waste and other non-liquid plant wastes, at the Peters Mine Pit, the

Cannon Mine Pit and the O'Connor Disposal Area (OCDA) at the Site (see Appendix I, Figure 2).

In 1969, the Ringwood Realty Corporation began selling or donating portions of the Site. In 1970, 290 acres of the Site were donated to the Ringwood Solid Waste Management Authority. During the same year, additional acreage was sold to the Public Service Electric and Gas Company for use as a transmission line right of way. In 1973, 109 acres were donated to NJDEP and this area was added to the Ringwood State Park. In that same year, Housing Operation with Training Opportunity (HOW TO) a New Jersey not-for-profit corporation, accepted the donation of over 35 acres of the Site. It is believed that by December 21, 1973, the Ringwood Realty Corporation no longer owned any land at the Site.

The results of a July 1982 Site Inspection conducted by NJDEP identified levels of benzene, ethylbenzene, and xylene in water samples collected from the Peters Mine Airshaft. These results led to the Site's inclusion on the National Priorities List (NPL) in 1983, making it eligible for Superfund cleanup.

In March 1984, Ford entered into an Administrative Order on Consent (AOC) with EPA which required the performance of a Remedial Investigation (RI) to determine the nature and extent of contamination at the Site. The required RI was conducted by Ford's contractor in four phases between March 1984 and April 1988. In June 1987, EPA issued Unilateral Orders (UAOs) to Ford which required the removal and off-site disposal of paint sludge and associated soil, and the performance of a Feasibility Study (FS) to evaluate potential cleanup options for any contamination remaining at the Site. Pursuant to these UAOs, Ford completed a FS and removed over 7,000 cubic yards of paint sludge and associated soil from the Site in 1988. As part of this removal, surficial deposits of paint sludge were removed from the northern portion of the Site near the Peters Mine Pit and the O'Connor Disposal Areas, and from an area near the Cannon Mine Pit.

In September 1988, EPA issued a Record of Decision (ROD) which selected long-term monitoring of groundwater and surface water as the remedy for the Site. The ROD noted that the known areas of paint sludge had been removed from the Site.

Additional paint sludge deposits and drums were identified in the OCDA in 1989, prompting the removal of 600 cubic yards of paint sludge and 54 drum remnants in 1990. Some of the drum contents were reported to have contained polychlorinated biphenyls (PCBs) at concentrations in excess of 50 parts per million (ppm).

In 1994, EPA deleted the Site from the NPL believing that all paint sludge and drums of hazardous substances had been removed from the Site. The deletion was further supported by the determination that groundwater at the Site did not pose an unacceptable threat to human health and the environment.

From 1990 through 1995, Ford conducted a five-year Environmental Monitoring Program which provided for the sampling of monitoring wells and potable wells in the area of the Site. The

results of this program indicated that groundwater contaminant levels had been reduced since paint sludge had been removed from the Site.

In 1995, EPA was notified by a local resident of additional paint sludge located in a utility right-of-way near the Cannon Mine Pit Area, prompting the removal of an additional five cubic yards of paint sludge. In 1998, another resident notified EPA of the presence of paint sludge in the OCDA, prompting the removal of an additional 100 cubic yards of paint sludge and soil.

In September 2003, representatives of the Upper Ringwood residents wrote to EPA regarding their concern over past exposures and paint sludge remaining at the Site, but provided no details regarding the location of remaining paint sludge at that time. Additional paint sludge areas were subsequently identified during an April 2004 Site visit arranged by the residents' representatives.

In December 2004, Ford began the voluntary removal of surficial pockets of paint sludge identified at the Site. The discoveries of additional significant quantities of paint sludge at the Site prompted EPA to restore the Site to the NPL in September 2006. Ford has removed over 53,500 tons of paint sludge and associated soil from 15 distinct areas of the Site, in addition to the OCDA and the Peters Mine Pit Area, since December 2004.

In September 2005, Ford signed an AOC which requires the performance of an additional RI and risk assessment for the Site. In May 2010, Ford signed an AOC which requires the performance of FSs for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site, as well as Site-Related Groundwater Contamination. The Borough of Ringwood, which has also been identified as a PRP for the Site, declined to enter into the RI/FS AOC with EPA. EPA then issued a Unilateral Administrative Order to the Borough mandating that the Borough participate and cooperate with Ford in doing the RI/FSs for the Site. Final RI and FS Reports for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas were submitted to EPA in 2012 and 2013.

The Site historically has contained and presently contains significant amounts of buried and surficial household wastes. From 1972 through 1976, the Borough of Ringwood operated a municipal landfill at the Site. Investigations conducted at the Site indicated that areas of the Site other than this municipal landfill were also used for the disposal of household wastes. Household refuse and construction debris was detected in 57 percent of test pits installed at the Site as part of a Site-wide Test Pit Investigation which was conducted in 2006 and 2007.

Due to the extensive mining activities formerly conducted at the Site, subsidence issues have historically been a concern. Subsidence issues reportedly occurred at the Site in 1961, 1979, 1998 and again in 2005, when a sinkhole formed on a residential property located about 600 feet from a paint sludge disposal area. In 2006, additional sinkholes formed between two residential properties located near the former Cannon Mine Pit. Investigations conducted on these properties identified the presence of shallow voids related to mining activities, resulting in the Borough of Ringwood declaring the properties uninhabitable. EPA has required that vibration monitoring be conducted during performance of remedial activities in areas near mine workings to mitigate the possibility of work-related subsidence issues.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI and FS Reports for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas, and EPA's Proposed Plan for cleanup of these disposal areas of the Site were released to the public for comment on October 2, 2013. These documents were made available to the public in the administrative record file maintained at the Ringwood Public Library, located at 30 Cannici Drive, Ringwood, New Jersey and in the EPA Region II Records Center at 290 Broadway, New York City. A notice of availability of the above-referenced documents was published in The Record and The Herald News on October 2, 2013.

A public comment period on these documents was originally scheduled to extend from October 2, 2013 through December 2, 2013. However, EPA received requests from the public to extend the public comment period to allow adequate time for consideration of and comment on the Proposed Plan. In response to these requests, EPA provided two extensions to the public comment period, which resulted in a public comment period that extended from October 2, 2013 through February 5, 2014.

In addition, EPA held a public meeting on November 7, 2013 at 7:00 pm at the Martin J. Ryerson Middle School in Ringwood, New Jersey to present the findings of the RI/FSs and EPA's Proposed Plan to the community and local officials. At this meeting, representatives of EPA answered questions concerning the remedial alternatives developed as part of the RI/FSs. Responses to comments received by EPA at this public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix VI).

In order to foster community involvement at the Site, EPA has facilitated the formation of a Community Advisory Group (CAG), comprised of community members, local officials and other Site stakeholders. Representatives of EPA and NJDEP routinely attend CAG meetings, which have generally been held on a monthly basis, in order to share Site information with the community. Furthermore, Site-related documents, such as the above-referenced RI and FS reports, have been shared with the CAG and their technical advisor prior to finalization in order to allow for consideration of their concerns.

In response to concerns raised by the Upper Ringwood community regarding the potential of adverse Site impacts, in July 2013, EPA finalized an Environmental Justice (EJ) Assessment for the Site. The EJ Assessment, a draft of which was released for public comment, concluded that the Upper Ringwood community had been adversely impacted by the Site, and recommended actions that could be taken by EPA and the State and local government to help identify and address potential impacts. As noted in the Addendum to the Environmental Justice Assessment, EPA and other government entities have taken steps to address all of the recommendations identified in the EJ Assessment including; restoration of the Site to the NPL, establishment of a CAG, facilitation of the availability of a Technical Assistance Grant (TAG), closer EPA/NJDEP coordination on Site cleanup efforts; facilitation of the collection of health data and improved communication with Site stakeholders.

SCOPE AND ROLE OF OPERABLE UNIT

EPA often segregates cleanup activities at a site into different phases or operable units (OUs), so that cleanup of environmental media or areas that have been characterized can occur while the nature and extent of contamination in other media or areas is being investigated. Such a phased approach provides for site contamination to be addressed in a more expeditious manner. In keeping with this approach, EPA is addressing cleanup of the Site through immediate actions to address imminent threats to human health, and three phases of long-term cleanup or OUs.

The Site was originally intended to be addressed as a single OU complemented by removal actions. In September 1988, EPA issued a ROD, now designated as OU1, for the entire Site. The ROD selected long-term monitoring of groundwater and surface water as the remedy for the Site. The Site was deleted from the NPL in 1994. However, additional significant paint sludge areas were subsequently identified, prompting EPA to restore the Site to the NPL in 2006.

Subsequent to the restoration of the Site to the NPL, EPA created two additional operable units, OU2 and OU3. OU2, which is the subject of this ROD, addresses waste, fill material and soil located in the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas. The FSs for these areas of concern evaluate a range of remedial options to limit direct exposure to contaminated soil and fill material and to mitigate their potential to serve as a source of contamination to groundwater and surface water.

Groundwater contamination across the entire Site is being addressed as OU3. A RI/FS for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater. That remedy will address long-term groundwater monitoring for the entire Site. In the interim, continued groundwater monitoring would be implemented as a component of the remedial alternatives being proposed for the Peters Mine Pit, Cannon Mine Pit and the OCDA. EPA anticipates that implementation of the OU2 remedy will be consistent with future OU3 remedial actions.

OUs 1, 2 and 3 are being complemented by removal actions. Paint sludge and associated soil contamination located on non-residential properties outside of the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas have been and/or are being addressed by Ford. Ford has removed over 53,500 tons of paint sludge and associated soil from 15 distinct areas of the Site, in addition to the OCDA and the Peters Mine Pit Area, since December 2004.

In addition, investigation and cleanup of residential properties at the Site has been conducted by EPA and the NJDEP under CERCLA's removal authority. In 2010 the NJDEP obtained access to 18 residential properties at the Site in order to conduct investigations for Site-related contamination. NJDEP conducted soils investigations on these properties in 2010 and 2011. The results of these investigations indicated the presence of elevated levels of lead on some of these properties. In the Fall of 2011, EPA initiated a removal action to delineate any contamination which may exist on additional residential properties at the Site, and to remove any lead contaminated soils and paint sludge identified on the residential properties. A total of 37 residential properties were assessed by EPA as part of this removal action, and lead-contaminated soil or paint sludge was removed from 23 of these properties.

SUMMARY OF SITE CHARACTERISTICS

The 500-acre Site is located in the northern portion of the Borough of Ringwood, Passaic County, New Jersey. The Site terrain is mountainous with peaks up to 900 feet above sea level and valleys which are generally below 500 feet in elevation. Bedrock in the valleys and other topographically low areas is covered by overburden which consists of unconsolidated and reworked glacial deposits and weathered bedrock. Groundwater at the Site occurs in both the overburden and bedrock.

The Peters Mine Pit Area is located in the north central part of the Site and is bound to the north by Park Brook. Most of the Peters Mine Pit Area falls within the Ringwood State Park, and is expected to remain in use as part of the state park in the future. From 1967 through 1971, the 375-foot long, 200-foot wide and 90-foot deep mine pit was filled with waste, including paint sludge, from Ford's Mahwah facility. Aerial photographs from 1973 indicate that the Peters Mine Pit had been filled to the level of the surrounding ground surface and covered with soil. Since this time, settling of the fill in this area has occurred and a 300-foot long pond currently occupies what was once the deepest part of the mine pit. This pond is believed to be an expression of the water table. The direction of groundwater flow in the Peters Mine Pit Area in both the overburden and bedrock is generally to the southeast. Overburden groundwater discharges to area streams, including the nearby Park Brook.

The Cannon Mine Pit Area is located in the southwestern part of the Site near a cul-de-sac at the southern end of Van Dunk Lane. The Cannon Mine Pit was reportedly 180 feet long, 140 feet wide and 200 feet deep when mining operations ceased. Attempts were made to blast the pit closed when Ford purchased the property, which resulted in reducing the depth of the pit to approximately 60 feet. During the period of Ford ownership, the pit was reportedly filled to the ground surface with waste from Ford's Mahwah facility. Only minimal settling of the fill material has been noted in this area. Records indicate that there was a shaft at the base of the pit which connected to other smaller mining pits, and an elevator shaft which is located approximately 500 feet east of the Cannon Mine Pit. The opening of the 500-foot deep elevator shaft is currently sealed with sections of railroad track and a concrete slab, and is enclosed by a chain-link fence. Groundwater in the Cannon Mine Pit Area occurs in both shallow and deeper bedrock. Topographic and groundwater elevation data collected at the Site indicates that groundwater in the shallow bedrock discharges to the Mine Brook which is located to the west and south of the Cannon Mine Pit Area.

The 12-acre OCDA is located to the south of the Peters Mine Pit Area along the Peters Mine Road. During the period of active mine operations, this area was utilized for the settling of waste mine tailings from wet ore processing operations. Subsequently, during the period of Ford ownership, the OCDA was utilized for the disposal of waste from Ford's Mahwah facility. The results of investigations conducted in this area indicate that waste and fill materials are present to a maximum depth of approximately 20 feet below ground surface. In general, a layer of undisturbed mine tailings underlies waste materials disposed of by Ford's contractor and other fill materials. The OCDA generally slopes to the east toward the Park Brook. Groundwater in the OCDA occurs in both the overburden and bedrock. Groundwater in the overburden flows to

the southeast and discharges to area streams, which ultimately discharge into the Wanaque Reservoir.

Paint sludge and other drummed industrial wastes are the primary sources of contamination at the Site. Paint sludge at the Site has been found to contain elevated levels of metals, including lead, while some of the drums excavated from the Site have been found to contain wastes with elevated levels of polychlorinated biphenyl (PCB) compounds. It should also be noted that levels of arsenic above New Jersey background soil levels have been found in some samples of mine tailings and paint sludge collected from the Site.

Peters Mine Pit Area Investigation

A supplemental RI of the Peters Mine Pit Area was initiated in March of 2006. As part of this RI, two test trenches and seven test pits were installed in the fill material which surrounds the Peters Mine Pit pond to characterize the fill material and to define the perimeter of the fill area. The test trenches were excavated from the edge of the water within the pit and continued until the edge of the fill was encountered. The test pits were installed near the anticipated perimeter of the Peters Mine Pit in order to confirm the extent of fill in the pit. Excavation of the test pits and test trenches was continued down to a depth where native soil, undisturbed mine tailings, bedrock or groundwater was encountered. In addition, four directional (diagonal) borings were installed through the fill material in the pit to the sidewall or base of the pit using rotosonic drilling techniques. The installation of these borings allowed for the visual characterization and field screening of wastes in the pit. Furthermore, soil/solid waste samples were collected from each 10-foot core segment recovered during the advancement of these borings (38 total samples) to characterize fill material contained within the Peters Mine Pit. Samples were collected from each core based upon visual appearance of the recovered material and field screening for volatile organic compounds (VOCs).

Fill materials encountered during installation of the test trenches included debris, drum remnants and paint sludge. The drum remnants encountered in the test trenches did not contain waste materials. Debris material was also encountered during installation of all of the test pits. Drum remnants were encountered in only one test pit, while paint sludge was discovered in two of the seven test pits installed in the Peters Mine Pit Area. The drum remnants encountered in one of the test pits did not contain waste material. The historic fill surrounding the pit, which is comprised of the same materials disposed of in the pit, was found to extend to an average depth of approximately 10 feet.

Paint sludge was also identified at depth in cores collected from one of the four directional borings. Lead was detected in seven of the 38 soil/solid waste samples collected from the borings at levels in excess of the State of New Jersey's Residential Direct Contact Soil Remediation Standard (RDCSRS) of 400 ppm. The concentrations of lead in these seven samples ranged from 463 ppm to 8,300 ppm. Arsenic was detected in 20 of the 38 soil/solid waste samples collected at levels in excess of its RDCSRS of 19 ppm. The concentrations of arsenic in these 20 samples ranged from 19.5 ppm to 82.9 ppm. Antimony was detected above its standard of 31 ppm in four samples at concentrations ranging from 95.9 ppm to 9,800 ppm. Vanadium was present above its standard of 78 ppm in five samples at concentrations from 86

ppm to 194 ppm. PCBs were detected at concentrations above their RDCSRS of 0.2 ppm in 15 of the 38 soil/solid waste samples. Total PCB concentrations in these samples ranged from 0.2 ppm to 6.4 ppm.

Semivolatile organic compounds (SVOCs) were also detected at concentrations above their respective RDCSRSs in 14 of the 38 samples. Benzo(a)anthracene was detected above its RDCSRS of 0.6 ppm at concentrations ranging from 0.613 ppm to 69.1 ppm. Benzo(a)pyrene was detected above its RDCSRS of 0.2 ppm at concentrations from 0.254 ppm to 65.2 ppm. Benzo(b)fluoranthene was detected above its standard of 0.6 ppm at concentrations from 1.44 ppm to 53 ppm. Benzo(k)fluoranthene was detected above its standard of 6 ppm in one sample at a concentration of 49.9 ppm. Bis(2-Ethylhexyl)phthalate was detected above its standard of 35 ppm at concentrations from 37.9 ppm to 4260 ppm. Chrysene was detected in one sample at a concentration of 65.3 ppm, which exceeds its standard of 62 ppm. Dibenzo(a,h)anthracene was present in samples at concentrations ranging from 0.405 ppm to 10.5 ppm, which exceed the RDCSRS of 0.2 ppm. Indeno(1,2,3-cd)pyrene exceeded its RDCSRS of 0.6 ppm in three samples at concentrations ranging from 0.887 ppm to 36.3 ppm. Naphthalene was detected above its standard of 6 ppm in one sample at a concentration of 40.2 ppm. Finally, pentachlorophenol was detected above its standard of 3 ppm in one sample at a concentration of 8.15 ppm.

VOCs were not detected in any of the soil/solid waste samples at concentrations that exceeded RDCSRSs. Benzene was detected at a maximum concentration of 1.1 ppm, which is below the RDCSRS of 2 ppm. The investigations conducted as part of the RI indicate that the Peters Mine Pit contains approximately 113,000 cubic yards of fill material, including approximately 23,700 cubic yards of mine tailings at the base of the pit.

The RI also included the installation and sampling of overburden and bedrock groundwater monitoring wells in the Peters Mine Pit and in the vicinity of the pit. The results of these investigations indicated the presence of benzene in groundwater in and downgradient of the pit at concentrations up to 5.5 parts per billion (ppb). In addition, benzene was detected in water contained in an airshaft to the east of the pit at concentrations as high as 33.2 ppb, which exceeds the New Jersey Ground Water Quality Standard (GWQS) of 1 ppb. The levels of benzene detected in groundwater in the Peters Mine Pit Area during this RI are consistent with levels detected during previous groundwater sampling events. Lead has also been detected sporadically in wells in the Peters Mine Pit Area at concentrations in excess of its GWQS of 5 ppb. Contaminants which may be associated with waste disposal were not detected in surface water samples collected from the Peters Mine Pit Pond at levels which exceeded the applicable New Jersey Surface Water Quality Standards.

Cannon Mine Pit Area Investigation

A supplemental RI of the Cannon Mine Pit Area was initiated in October 2007. As part of this RI, 12 test pits were installed in and around the perimeter of the Cannon Mine Pit to characterize the fill material and the extent of the pit. These test pits were excavated to bedrock, rock rubble, groundwater or a maximum depth of 15 feet below ground surface (bgs). In addition, six borings were installed within the pit into the underlying blast rock to confirm the depth of fill placement.

The installation of these borings allowed for the visual characterization and field screening of wastes in the pit. Soil/solid waste samples were collected from each 10-foot core recovered during the advancement of these borings (31 total samples) to characterize the fill material contained within the Cannon Mine Pit. Ten surface soil samples were also collected from within the Cannon Mine Pit.

Paint sludge was not identified during the installation of any of the test pits or borings. However, 10 drums were removed from one test pit during these investigations. The contents of two of these ten drums failed the Toxicity Characteristic Leaching Procedure (TCLP) for lead, and were required to be disposed of off-site as a hazardous waste. No contaminants were detected at concentrations above New Jersey's RDCSRSs in the surface soil samples collected during this RI. Lead was detected in 10 of the 31 soil/solid waste samples collected from the borings at levels in excess of the State of New Jersey's RDCSRS of 400 ppm. The concentrations of lead in these 10 samples ranged from 428 ppm to 9,030 ppm. Arsenic was detected in three of the 31 soil/solid waste samples collected at levels in excess of its RDCSRS of 19 ppm. The concentrations of arsenic in these three samples ranged from 19.6 ppm to 56.7 ppm. Antimony was detected above its standard of 31 ppm in two samples at concentrations of 39.7 ppm and 185 ppm. Vanadium was present above its standard of 78 ppm in five samples at concentrations from 80.2 ppm to 98.3 ppm.

PCBs were detected at concentrations above their RDCSRS of 0.2 ppm in two of the 31 soil/solid waste samples. Total PCBs were detected in these samples at concentrations of 1.14 ppm and 4.01 ppm. SVOCs were detected at concentrations in excess of their respective RDCSRSs in two of the 31 soil/solid waste samples. Benzo(a)anthracene was detected above its RDCSRS of 0.6 ppm at a concentration of 1.16 ppm. Benzo(a)pyrene was detected above its RDCSRS of 0.2 ppm at a concentration of 0.63 ppm. Benzo(b)fluoranthene was detected above its standard of 0.6 ppm at a concentration of 1.2 ppm. Bis(2-Ethylhexyl)phthalate was detected above its standard of 35 ppm in two samples at concentrations of 177 ppm and 367 ppm. Naphthalene was detected above its standard of 6 ppm in one sample at a concentration of 10.9 ppm.

VOCs were not detected in any of the soil/solid waste samples collected from the borings at concentrations in excess of their respective RDCSRSs. The results of investigations conducted in the Cannon Mine Pit Area indicate that the Cannon Mine Pit contains approximately 44,000 tons of fill material, excluding the blast rock located at the bottom of the pit. The shallow fill area surrounding the pit was found to contain soil mixed with solid waste, such as plastic, glass metal, newspaper and other refuse.

The RI in the Cannon Mine Pit Area also included the installation and sampling of bedrock groundwater monitoring wells in the Cannon Mine Pit and in the vicinity of the pit. Groundwater has not been encountered in the thin layer of overburden in the vicinity of the pit, therefore there are no overburden monitoring wells in this area of the Site. The results of the groundwater investigation indicate that the Cannon Mine Pit sits on top of a small ridge with groundwater in shallow bedrock to the east of the pit flowing to the southeast and groundwater to the west of the pit flowing to the southwest. Lead, which has sporadically been detected in groundwater in the Cannon Mine Pit Area at concentrations above its GWQS of 5 ppb, was not

detected above its GWQS during the April 2012 groundwater sampling event. Arsenic was detected above its GWQS of 3 ppb in two samples collected during the April 2012 groundwater sampling event at concentrations of 3.7 ppb and 3.6 ppb, respectively. Trichloroethene, which was detected in one monitoring well at concentrations above the GWQS of 1 ppb during sampling events conducted in 2008 and 2009, has not been detected in subsequent sampling events. Similarly, bis(2-Ethylhexyl)phthalate, which was detected at concentrations above its GWQS of 3 ppb during a groundwater sampling event conducted in the Cannon Mine Pit Area in 2008, has not been detected at elevated levels during subsequent sampling events.

O'Connor Disposal Area Investigation

A supplemental RI of the OCDA was initiated in July 2006, and was conducted in two phases. The initial phase of the RI included the installation of 14 test trenches and 10 test pits in the OCDA in order to characterize the fill material and to delineate the extent of the fill. Twenty-nine soil samples were collected from the fill material and the bottom of the test pits and trenches. In addition, 15 surface soil samples were collected from the OCDA. The second phase of investigation, which was conducted in 2010, included the completion of eight additional test trenches (3,169 linear feet), with the collection of 40 samples from the base of the trenches and 34 samples from the sidewalls of the trenches. These investigations indicated that approximately 183,600 cubic yards of fill material and mine tailings are present within the OCDA.

During performance of these investigations, paint sludge deposits were identified at the northern and southern ends of the OCDA. Twenty-two hundred tons of this paint sludge was excavated and disposed of off-site by Ford during early 2010. In addition, five drums of waste were identified during this RI. Three of these drums were disposed of off-site as hazardous waste while the contents of the remaining two drums were disposed of off-site as Toxic Substances Control Act waste with concentrations of PCBs in excess of 50 ppm.

Arsenic was detected in five of the 15 surface soil samples at concentration ranging from 42.4 ppm to 51.1 ppm, which exceed New Jersey's RDCSRS of 19 ppm. Lead was detected in all of the surface soil samples at concentrations from 11.2 ppm to 155 ppm, which did not exceed its RDCSRS of 400 ppm. PCBs were detected in one of the surface soil samples at a concentration of 0.287 ppm, which exceeds its RDCSRS of 0.2 ppm. VOCs and SVOCs were not detected in any of the surface soil samples at levels which exceed RDCSRSs.

VOCs were not detected above their respective RDCSRSs in any of the samples collected from the test pits or test trenches during the initial phase of investigation. SVOCs were detected at concentrations which exceed RDCSRSs in only one test pit/test trench sample collected during the initial phase of investigation. Specifically, benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene were reported at concentrations of 1.27 ppm, 1.18 ppm and 1.25 ppm, which exceed their respective RDCSRSs of 0.6 ppm, 0.2 ppm and 0.6 ppm. Total PCBs were reported in excess of the 0.2 ppm standard in five samples, at concentrations ranging from 0.2124 ppm to 0.769 ppm. Arsenic was reported at levels in excess of its RDCSRS of 19 ppm in 11 test pit/test trench samples at concentrations ranging from 25.5 ppm to 59.7 ppm. Lead

exceeded its RDCSRS of 400 ppm in only one test pit/test trench sample collected during the initial phase of investigation, where it was detected at a concentration of 430 ppm.

During the second phase of investigation, VOCs were not detected above their respective RDCSRSs in any of the 74 samples collected from the trenches. SVOCs were detected above their respective RDCSRSs in four of the 74 samples collected from the trenches. Specifically, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene were detected at concentrations up to 1.66 ppm, 2.06 ppm, 2.22 ppm, 0.463 ppm and 1.34 ppm, which exceed their respective RDCSRSs of 0.6 ppm, 0.2 ppm, 0.6 ppm, 0.2 ppm and 0.6 ppm. PCBs were reported above the RDCSRS of 0.2 ppm in five samples, at concentrations ranging from 0.2115 ppm to 1.13 ppm. Arsenic exceeded its RDCSRS of 19 ppm in 29 samples collected from the trenches during the second phase of investigation, at concentrations ranging from 22.8 ppm to 126 ppm. Lead only exceeded its RDCSRS of 400 ppm in one trench sample collected during the second phase of investigation, where it was detected at a concentration of 477 ppm.

The RI also included the installation and sampling of overburden groundwater monitoring wells in the OCDA. Methyl Tertiary Butyl Ether (MTBE) is the only VOC which has been detected above its GWQS in the OCDA. MTBE was detected in a sample collected from one well during a July 2009 sampling event at a concentration of 171 ppb, which exceeds its GWQS of 70 ppb. However, MTBE has not been detected in the OCDA during subsequent groundwater sampling events. Bis(2-Ethylhexyl)phthalate is the only SVOC which has been detected above its GWQS in the OCDA. Bis(2-Ethylhexyl)phthalate was detected in samples collected from two wells in the OCDA during an April 2007 groundwater sampling event at concentrations of 6.6 ppb and 3.7 ppb, which exceed the GWQS of 3 ppb. However, bis(2-Ethylhexyl)phthalate has not been detected in the OCDA during subsequent groundwater sampling events. Historically, arsenic has been sporadically detected in groundwater samples collected from the OCDA at concentrations above its GWQS of 3 ppb. However, arsenic was detected above the 3 ppb GWQS in only one well during the 2012 sampling event. Historically, lead has been sporadically detected in groundwater samples collected from the OCDA at concentrations above its GWQS of 5 ppb. However, lead was not detected above its GWQS in groundwater samples collected from the OCDA during the 2012 sampling event.

Biota Study

Given that the Upper Ringwood residents reported that they regularly consume plants and wildlife at the Site and their concern about the potential for contaminants to enter the food chain, biota sampling was conducted by EPA's Environmental Response Team in 2006-2007 and again in 2009. EPA consulted with the local community to ensure that biota collected from the Site included game and plants which the community consumed. This biological monitoring study involved the collection of frogs, crayfish, small mammals (mice, voles and shrews), eastern gray squirrel, rabbits, turkey, eastern white-tail deer, wild carrot, dandelion greens, mushrooms, strawberries and raspberries. The intent of this study was to assess the potential migration of Site-related contaminants into the food chain and to determine whether contaminants are present in biota consumed by the Upper Ringwood community.

The results of plant root samples analyzed for metals indicated that plants in the OCDA, including wild carrot, had higher levels of lead (maximum concentration of 48.4 ppm, dry weight) than other sampling locations, including the reference sampling location. While a limited number of SVOCs were found in the plant tissue, these SVOCs were found at low levels.

The results of frog samples collected as part of the 2006-2007 study indicated the presence of lead in one sample collected from the Peter's Mine Pit Area (4.59 ppm) and one sample collected from the reference sampling location (6.71ppm). Lead was not detected in frog samples collected at the Site in 2009. SVOCs and PCBs were not detected above the reporting limit in any frog samples collected at the Site.

A total of 31 small mammals were collected as part of the 2006-2007 study, including 15 white – footed mice, nine northern short-tailed shrew, five woodland voles, a meadow vole and a southern red-backed vole. The results of small mammal tissue samples analyzed for metals indicated that the highest levels of lead occurred in small mammals collected in the OCDA (maximum concentration of 64.8 ppm). SVOCs and PCBs were not detected above their reporting limit in any small mammal samples collected at the Site.

Nine eastern gray squirrels were also collected from the OCDA as part of this biological monitoring study. Lead was detected in squirrel tissue samples at concentrations up to 0.79 ppm. SVOCs and PCBs were not detected above their reporting limit in any squirrel samples collected at the Site.

A total of five turkeys were collected from the OCDA as part of this study. Elevated concentrations of metals were not noted in turkey tissue samples. However, PCBs were detected in one turkey sample at its reporting limit of 182 ppb dry weight. Given that PCBs were only detected at a low concentration in one of five turkeys, substantial amounts of PCBs do not appear to be entering the food chain at the Site. SVOCs were not detected above the reporting limit in any turkey sample collected from the Site.

Three rabbits were collected from the OCDA as part of the 2006-2007 study. Lead, arsenic and antimony were not detected in any of the rabbit samples. In addition, PCBs and SVOCs were not detected in the rabbit samples collected as part of this study.

Thirteen white-tailed deer were also collected as part of this study. Three of the deer were collected from the Site and 10 deer were collected from an off-site reference location. Lead was detected in one sample collected from a Site deer at a concentration of 0.17 ppm, which is below the reporting limit for lead in the reference deer of approximately 0.2 ppm. Therefore, this data does not support a conclusion that lead is accumulating in deer at the Site. PCBs were not detected in Site and reference deer samples. Several SVOCs were detected at low levels in samples collected from both Site and reference deer.

The results of this study indicated that lead was accumulating in small mammals and plants collected from the Site, particularly those collected from the OCDA. However, lead accumulation was not observed in the larger wildlife which is consumed by the community. Other Site-related metals were not found to be substantively entering the food chain. In addition,

Site-related organic contaminants were not found to be entering the food chain, as it would have been expected that the shrews would have had consistently shown measurable concentrations of organic contaminants if bio-accumulation were occurring.

Comparison of OU1 and Current Remedial Investigations

From 1984 through 1988, a four-phase RI was conducted at the Site in order to characterize the nature and extent of Site-related contamination. Data collected as part of this RI provided the basis for selection of a remedy in the OU1 ROD. The OU1 RI identified the need to conduct investigations in only four areas of the Site, based upon a review of available literature concerning the Site, analysis of historic aerial photographs and a limited Site reconnaissance.

The OU1 RI included the installation of test pits and the collection of soil samples in the Peters Mine Pit/OCDA, St. Georges Pit/Miller Keeler Pit, Cannon Mine Pit, and the inactive Borough Landfill areas of the Site. In addition groundwater, surface water and seep water samples were collected from the above-referenced investigation areas. As part of the OU1 RI, four test pits were installed in the OCDA and three test pits were installed in the Cannon Mine Pit in order to characterize the fill material. Only one test pit was installed in the fill which surrounds the Peters Mine Pit Pond to characterize this fill material. Soil samples were collected as part of the OU1 RI primarily to confirm the removal of surficial paint sludge deposits which were addressed by Ford pursuant to the 1987 UAO.

Subsequent to issuance of the OU1 ROD, additional deposits of paint sludge were identified at the Site in 1989, 1995, 1998 and 2004. Due to the continued discovery of waste, EPA determined that a Supplemental Remedial Investigation should be performed to ensure that wastes which may present an unacceptable risk to human health and the environment were identified and addressed. The first phase of the OU2 RI involved the performance of an expanded Field Reconnaissance Survey (FRS) to search for evidence of waste disposal in non-residential areas of the Site which could have received waste. Various sources of information were used to determine the scope of the FRS, including historic aerial photographs and information obtained from the community. In addition stereo aerial photographs from December 1961 and April 1974 were utilized to develop topographic maps of the Site which denote ground elevation changes which occurred during the period that Ford was using areas of the Site for waste disposal. Areas which appeared to show evidence of filling during this time period were included in the FRS. The FRS also included historically designated disposal areas, former and current paint sludge disposal areas, disturbed areas identified on aerial photographs, areas along historic access roads and trails, surface depressions, ravines along access roads and areas identified by the Upper Ringwood community. The FRS consisted of a visual survey of the above-referenced areas for the presence of paint sludge, drum remnants and other indicators of potential waste disposal. In addition, subsurface observations were made throughout these areas through the visual inspection of soil samples taken with a soil probe.

The results of the FRS were utilized to identify areas that could have potentially been impacted by disposal activities, based upon observations made during the FRS. In 2005 and 2006 a Site-wide Test Pit Investigation was conducted at the Site to further investigate these suspect areas. The Site-wide Test Pit Investigation provided for the installation of test pits in all of these

suspect areas to determine whether paint sludge or drums of waste were disposed of at these locations. Seventy-nine test pits were installed as part of this investigation. Any identified paint sludge disposal areas were subsequently addressed in removal actions conducted by Ford under EPA oversight.

The OU2 RI also identified the need for additional investigations to be conducted in the Peters Mine Pit, Cannon Mine Pit, and O'Connor Disposal Areas of the Site. While the OU1 RI provided for the installation of one test pit in the Peters Mine Pit Area, the OU2 RI included the installation of two test trenches, seven test pits and four directional borings within the Peters Mine Pit to thoroughly characterize the fill material. While three test pits were installed in the Cannon Mine Pit during the OU1 RI, the OU2 RI provided for the installation of 12 test pits and six deep soil borings to ensure thorough characterization of materials in the pit. The OU2 RI also included the installation of over 3169 linear feet of additional test trenches in the OCDA to thoroughly characterize the materials disposed of in this area of the Site.

In addition, a more comprehensive groundwater investigation is being conducted as part of the OU3 RI. Geophysical, environmental tracer, isotope and geochemical studies have been conducted as part of the OU3 RI to better understand groundwater flow pathways and connectivity between bedrock, overburden, the mine shafts and surface water. The results of the OU3 RI will be used as the basis for selection of a remedy for Site-wide groundwater.

Paint sludge and lead-contaminated soil located on residential properties at the Site outside of the above-referenced areas are being addressed by EPA under CERCLA's removal authority.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Portions of the Site are currently used as State of New Jersey parkland (Ringwood State Park), utility corridors (Public Service Electric & Gas and Rockland Electric Company), Borough of Ringwood facilities, including a Recycling Center and a Public Works yard, a power sub-station and open space (Borough of Ringwood property). In addition, 48 residential properties are located throughout the Site.

The land that comprises the Peters Mine Pit Area is currently used for recreational purposes as part of the Ringwood State Park and is expected to remain in use as part of the State park in the future. The Cannon Mine Pit and the O'Connor Disposal Areas are currently undeveloped and are zoned for residential use. EPA does not anticipate that the zoning of the Cannon Mine Pit would change in the future. Representatives of the Borough of Ringwood have informed EPA that they intend to relocate the Borough of Ringwood's recycling center to the OCDA. EPA has also been informed that the proposal to relocate the recycling center has been presented to the Borough of Ringwood's Planning Board.

Groundwater beneath the Site has been designated as Class II groundwater by the State of New Jersey, for the intended use as a potable water supply. However, residents at the Site currently obtain their drinking water from the public water supply, which draws its water from well fields located in a different watershed approximately two miles from the Site. During periods of high

demand, the Borough of Ringwood may also obtain drinking water from the North Jersey District Water Supply Commission.

SUMMARY OF OPERABLE UNIT TWO RISKS

As part of the RI/FSs for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, baseline risk assessments were conducted to estimate the current and future effects of contaminants that currently exist at the Site on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land, groundwater and surface water/sediment uses. The baseline risk assessment includes a human health risk assessment (HHRA) and an ecological risk assessment.

EPA notes that the historic paint sludge removal actions implemented in the non-residential areas of the Site, including the OCDA and the Peters Mine Pit Area, have addressed much of the potential risk originally associated with the Site. Because the HHRA's evaluate current and potential future risks associated with the Site, EPA believes that implementation of the removal actions has reduced the potential risks that would have been identified by the HHRAs had these removal actions not been conducted.

Human Health Risk Assessments

An HHRA is an analysis of the potential adverse human health effects caused by exposure to hazardous substances in the absence of any action to control or mitigate these exposures under current and future land uses. The HHRA provides the basis for taking an action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. Separate HHRAs have been completed for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site. While EPA recognizes that individuals may spend only a portion of their time in a single area of the Site, the HHRAs calculate risk assuming that individuals confine their activities to a single area as it is possible that individuals may occasionally only spend time in a single area. In addition, in order to recognize that it is reasonable to assume people spend time at each area, the HHRAs include a second set of risk calculations which apportion exposures based upon the relative contribution of acreage of each area of concern to the total 22 acres of the three areas of concern at the Site.

A four-step process is utilized for assessing Site-related cancer risks and non-cancer health hazards. The four step process is comprised of:

Hazard Identification - uses the analytical data collected to identify chemicals of potential concern (COPCs) at a site for each medium, based on several factors such as toxicity, frequency of occurrence, and concentration;

Exposure Assessment - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways by which humans are potentially exposed (i.e., ingesting contaminated soil) under both current and reasonably anticipated future

land uses;

Toxicity Assessment - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of effect (response); and

Risk Characterization - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. The risk characterization identifies contaminants with concentrations which exceed acceptable levels, defined by the National Contingency Plan (NCP) as an excess lifetime cancer risk greater than 1×10^{-6} to 1×10^{-4}, for cancer, and a Hazard Index (HI) of greater than 1 for non-cancer health hazards. Chemicals with concentrations that exceed these guidelines are considered chemicals of concern (COCs) for the Site and are typically those that will require remediation. The uncertainties associated with the risk calculations are also evaluated under this step.

Peters Mine Pit Area

Hazard Identification

The identification of COPCs for OU2 was conducted in two phases. First, the frequency of detection of compounds in Site-wide data for soil, sediment, surface water and biota was determined. Any compound in a specific medium with a detection frequency of less than five percent was excluded from further analysis. The remaining compounds were compared with risk-based screening criteria to identify COPCs for OU2. All compounds which have been determined to be known human carcinogens were retained as COPCs regardless of their detection frequency or comparison to risk-based screening criteria.

The maximum detected concentrations in soil and sediment samples were compared to EPA's Regional Screening Levels (RSLs) for Residential Soils. If the maximum detected concentration of any compound exceeded the applicable RSL, it was retained as a COPC. Similarly, maximum detected concentrations in surface water were compared to the lowest value provided by EPA's National Recommended Water Quality Criteria for Freshwater, the New Jersey Water Quality Criteria or EPA's Maximum Contaminant Levels for drinking water. If the maximum detected concentration of a compound exceeded the lowest of these criteria, the chemical was retained as a COPC. For biota samples, any compound that was detected in at least one biota sample was retained as a COPC for that particular plant or animal.

COPCs identified for soil include VOCs, SVOCs and metals, including arsenic and lead. COPCs identified for sediment and biota included SVOCs and metals. VOCs, SVOCs and metals, including lead, were identified as COPCs for surface water. Only those COPCs that were detected in at least one sample for the medium of concern in the Peters Mine Pit Area are evaluated further in the HHRA for this area. A comprehensive list of all Site COPC can be found in the Table 2 series of the March 2012 Baseline Human Health Risk Assessment for Peters Mine Pit Area of Concern.

Exposure Assessment

Consistent with Superfund policy and guidance, the HHRA for the Peters Mine Pit Area assumes no remediation or institutional controls are implemented to address any hazardous substances currently in this area of the Site. Furthermore, cancer risks and non-cancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site. The central tendency estimate (CTE), or the average exposure, was also evaluated.

The exposure assessment identified potential human receptors based upon an evaluation of current and potential future land uses in the Peters Mine Pit Area. EPA consulted with members of the Upper Ringwood community to help determine how this area of the Site is currently being utilized by local residents. Furthermore, it should be noted that the Peters Mine Pit Area is zoned as Conservation land, so it is not eligible for future residential or commercial development. Based upon the zoning and demographic information gathered during the RI, as well as land use information provided by the Upper Ringwood community, the following exposure scenarios were evaluated in the HHRA:

Walker/Hiker /Dog Walker: This exposure scenario assumes that a walker/hiker/dog walker is exposed to surface soil in the Peters Mine Pit Area through ingestion, dermal contact and inhalation of dust while walking through this area of the Site. Potential risks were evaluated for young children (age 1 - 6), older children (age 7 - 16) and adults who may use the Peters Mine Pit Area.

Wader: Under this exposure scenario, a wader is assumed to be exposed to sediment and surface water through ingestion and dermal contact while wading in brooks and ponds in this area of the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may wade in the Peters Mine Pit Area.

Hunter/Gatherer: Upper Ringwood residents informed EPA that community members regularly hunt game and gather wild plants at the Site for consumption. Therefore, the hunter/gatherer scenario evaluates potential risks associated with ingestion of game and plants collected from the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may consume biota collected from the OU2 areas of the Site.

Outdoor Worker: It is assumed that outdoor workers are currently exposed to surface soils via ingestion, dermal contact and inhalation of dust while working in the Peters Mine Pit Area.

Combined Walker/Hiker/Dog Walker, Wader, and Hunter/Gatherer Scenario: This scenario evaluates potential risk associated with cumulative exposure to the walker/hiker/dog walker, wader and hunter/gatherer through ingestion of soil, ingestion and dermal contact of sediment and surface water and ingestion of game and plant tissue. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults.

Typically, exposures are evaluated using a statistical estimate of the exposure point concentration (EPC), which is usually an upper-bound estimate of the average concentration for

each contaminant, but in some cases may be the maximum detected concentration. For soils in the Peters Mine Pit Area, the maximum detected concentration for each COPC was used as the EPC, with the exception of lead. For sediment, surface water, game and plant tissue, the lower of the maximum concentration or the 95 percent upper confidence limit (UCL) of the average concentration was used as the EPC for each COPC, with the exception of lead. For lead, the average concentration was chosen as the EPC for all media, which is consistent with national guidance for evaluating exposure to lead.

Toxicity Assessment

Under current EPA guidelines, the likelihood of carcinogenic risks and non-cancer hazards due to exposure to site-related chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the site-related chemicals would be additive. Thus, cancer risks and non-cancer hazards associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and non-carcinogens, respectively.

Toxicity data for the human health risk assessment were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer-Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA's directive on toxicity values (OSWER Directive 9285.7-53, December 5, 2003). This information is presented in Appendix III, Tables 3-1a and 3-1b (non-cancer toxicity data summary for oral/dermal and inhalation) and Tables 3-1c and 3-1d (cancer toxicity data summary for oral/dermal and inhalation). Additional toxicity information for all COPCs is presented in the HHRA for the Peters Mine Pit Area.

EPA has not published conventional quantitative toxicity values for lead because available data suggests a very low or no threshold for adverse effects, even at background levels. However, the toxicokinetics of lead are well understood and indicate that lead is regulated based on the blood lead concentration. In lieu of evaluating current and future risks using typical intake calculations and toxicity criteria, EPA developed models to evaluate lead exposure. For this HHRA, blood lead concentrations were estimated using the Integrated Exposure Uptake Biokinetic (IEUBK) and the Adult Lead Methodology (ALM) models. Currently, EPA's health-based goal for blood lead levels in children is no more than five percent of the population having greater than 10 micrograms per deciliter (ug/dl).

Risk Characterization

This step combined outputs of the exposure and toxicity assessments to provide a quantitative assessment of risks related to the Peters Mine Pit Area. The potential risk of developing cancer and the potential for non-cancer health hazards were determined.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the

following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the assessment. Again, as stated in the National Contingency Plan, the acceptable risk range for site-related exposure is 10^{-4} to 10^{-6}, which corresponds to a one-in-ten-thousand to a one-in-a-million excess cancer risk.

Non-cancer hazards were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (*e.g.*, the amount of a chemical ingested from contaminated soil) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1 indicates that the potential exists for non-cancer health effects to occur as a result of Site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals which are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for non-cancer health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

A summary of the potential cancer risks and non-cancer health hazards for each exposure pathway is presented in Appendix III, Tables 4-1a and 4-1b.

The HHRA for the Peters Mine Pit Area evaluated Walker/Hiker/Dog Walker, Wader, Hunter/Gatherer and Current Outdoor Worker exposure scenarios, assuming an apportionment factor of 100 percent. This apportionment factor assumes that 100 percent of the receptors' exposure occurs within this area of the Site. The results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the Peters Mine Pit Area falls at the upperbound of EPA's risk management range of 10^{-4} to 10^{-6} for the reasonable maximum exposure expected to occur. The cumulative potential cancer risk for the Hunter/Gatherer scenario for adult, young child and older child is 4×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to ingestion of arsenic in plant and game tissue. Potential risks associated with all other exposure scenarios fell within or below EPA's risk management range. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter/Gatherer scenario, hazard indices were above EPA's target HI of 1 for the circulatory system, skin, kidney and gastrointestinal tract, for the reasonable maximum exposure expected to occur. However, following EPA's process for evaluating non-cancer hazards, when mechanisms of action (i.e. specific functional or anatomical change at the cellular level, resulting from the exposure to a substance) for the COPCs are considered, non-cancer HIs for all critical effects are around the benchmark value of 1.

The HHRA for the Peters Mine Pit Area also evaluated Walker/Hiker/Dog Walker and Hunter/Gatherer exposure scenarios, assuming an apportionment factor of 23 percent, which represents the size of the Peters Mine Pit Area relative to the size of all three source areas. The cumulative potential cancer risk for these exposure scenarios is 1×10^{-4} for the reasonable maximum exposure expected to occur. The apportioned potential non-cancer risk under the Walker/Hiker/Dog Walker scenario was at or below EPA's target HI of 1 for all receptors. For the Hunter/Gatherer scenario, the hazard indices for the adult, youth and young child are all below 1 when assessed by target organ.

Anticipated blood lead levels in Site receptors were also evaluated to determine whether exposure to lead in media at the Site presents an unacceptable risk. Blood lead levels for the young child hunter/gatherer following exposure to lead in game and plant tissue were predicted to exceed 10 ug/dl in 14 percent of the hypothetically exposed population, which exceeds EPA's target threshold of five percent, indicating potential unacceptable risk due to exposure to lead.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation

- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. The sampling locations may not accurately reflect the range, frequency and distribution of compounds at the Site. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the Hazard Identification process were also associated with the screening of sediment concentrations against soil screening data, since sediment screening criteria are not available. In addition, if screening values were not available for a compound, the compound was retained as a COPC and quantitatively evaluated in the HHRA to ensure that potential risks were not underestimated.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the COPCs, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the COPCs at the point of exposure. The HHRA for the Peters Mine Pit Area also assumes that the hypothetical walker/hiker/dog walker confines their activities to the OU2 area (22 acres) of the 500-acre Site, which may result in overestimation of potential risk.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site. Additional uncertainty is associated with the use of the ALM model to determine potential risks associated with lead exposure in adults and older children. The ALM model cannot be used to determine potential risks from lead in game and plant tissue, which may result in underestimation of risks associated with lead exposure to the adult and older child.

Cannon Mine Pit Area

Hazard Identification

The identification and screening of COPCs was conducted as described above in the *Hazard Identification* section for the Peters Mine Pit Area. Only those COPCs that were detected in at least one sample for the medium of concern in the Cannon Mine Pit Area are evaluated further in the HHRA for this area.

Exposure Assessment

For the Cannon Mine Pit Area, cancer risks and non-cancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and

future conditions at the Site. The central tendency estimate (CTE), or the average exposure, was also evaluated.

The exposure assessment identified potential human receptors based upon an evaluation of current and potential future land uses in the Cannon Mine Pit Area. EPA consulted with members of the Upper Ringwood community to help determine how this area of the Site is currently being utilized by local residents. Based upon the zoning and demographic information gathered during the RI, as well as land use information provided by the Upper Ringwood community, the following exposure scenarios were evaluated in the HHRA:

Walker/Hiker /Dog Walker: This exposure scenario assumes that a walker/hiker/dog walker is exposed to surface soil in the Cannon Mine Pit Area through ingestion, dermal contact and inhalation of dust while walking through this area of the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may use the Cannon Mine Pit Area.

Dirt Biker/ATV Rider: Under this exposure scenario, a dirt biker/ATV rider is assumed to be exposed to surface soils through ingestion, dermal contact and inhalation of dust while riding dirt bikes and ATVs through this area of the Site. Potential risks were evaluated for older children (age 7 – 16) and adults.

Hunter/Gatherer: Upper Ringwood residents informed EPA that community members regularly hunt game and gather wild plants at the Site for consumption. Therefore, the hunter/gatherer scenario evaluates potential risks associated with ingestion of game and plants collected from the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may consume biota collected from the OU2 area of the Site.

Current Outdoor Worker: It is assumed that outdoor workers clearing brush are currently exposed to surface soils via ingestion, dermal contact and inhalation of dust while working in the Cannon Mine Pit Area.

Future Resident: A portion of the Cannon Mine Pit Area is zoned for residential use. Therefore, it is assumed that future residents may be exposed to surface soils via ingestion, dermal contact and inhalation of dust while using their yards. Potential risks were evaluated for young children (age 1 - 6), older children (age 7 – 16) and adult residents.

Future Outdoor Worker: A portion of the Cannon Mine Pit Area is zoned for industrial use. Therefore, future industrial development is possible, and future outdoor workers are assumed to be exposed to surface soils via ingestion, dermal contact and inhalation of dust.

Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter/Gatherer: This scenario evaluates potential risk associated with cumulative exposure to the walker/hiker/dog walker, dirt biker/ATV rider and hunter/gatherer through ingestion of and dermal contact with soil, and ingestion of game and plant tissue. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults.

Typically, exposures are evaluated using a statistical estimate of the exposure point concentration (EPC), which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. For soil, game and plant tissue, the lower of the maximum concentration or the 95 percent upper confidence limit (UCL) of the average concentration was used as the EPC for each COPC, with the exception of lead. For lead, the average concentration was chosen as the EPC for all media, which is consistent with national guidance for evaluating exposure to lead.

Toxicity Assessment

Toxicity data for the HHRA for the Cannon Mine Pit Area were identified as discussed in the *Toxicity Assessment* section for the Peters Mine Pit Area. This information is presented in Appendix III, Tables 3-2a and 3-2b (non-cancer toxicity data summary for oral/dermal and inhalation) and Tables 3-2c and 3-2d (cancer toxicity data summary for oral/dermal and inhalation). Additional toxicity information for all COPCs is presented in the HHRA for the Cannon Mine Pit Area.

Risk Characterization

Potential cancer risks and non-cancer hazards related to exposure to the Cannon Mine Pit Area were quantified as discussed in the *Risk Characterization* section for the Peters Mine Pit Area. A summary of the potential cancer risks and non-cancer health hazards for each exposure pathway is presented in Appendix III, Tables 4-2a and 4-2b.

The HHRA for the Cannon Mine Pit Area evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Hunter/Gatherer, Current Outdoor Worker, Future Resident and Future Outdoor Worker exposure scenarios, assuming an apportionment factor of 100 percent. This apportionment factor assumes that 100 percent of the receptors' exposure occurs within this area of the Site. Results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the Cannon Mine Pit Area falls at the upperbound of EPA's risk management range of 10^{-4} to 10^{-6} for the reasonable maximum exposure expected to occur. The cumulative potential cancer risk for the Hunter/Gatherer scenario for adult, young child and older child is 3×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to ingestion of arsenic found in plant and game tissue. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter/Gatherer scenario, hazard indices were above EPA's target HI of 1 for the circulatory system and gastrointestinal tract for the reasonable maximum exposure expected to occur. However, following EPA's process for evaluating non-cancer hazards, when mechanisms of action for the COPCs are considered, non-cancer HIs for all critical effects are around the benchmark value of 1. Potential risks associated with all other exposure scenarios fell within or below EPA's risk management range.

The HHRA for the Cannon Mine Pit Area also evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter/Gatherer exposure scenarios, assuming an apportionment factor of 23 percent, which represents the size of the Cannon Mine Pit Area relative to the size of all three source areas. The cumulative potential cancer risk for these exposure scenarios is 7×10^{-5} for the reasonable maximum exposure expected to occur. The apportioned potential non-cancer risk

under the Walker/Hiker/Dog Walker and Dirt Biker/ATV Rider scenarios was below EPA's target HI of 1 for all receptors. For the Hunter/Gatherer scenario, the hazard indices for the adult, youth and young child are all below one when assessed by target organ.

Anticipated blood lead levels in Site receptors were also evaluated to determine whether exposure to lead in media at the Site present an unacceptable risk. Blood lead levels for the young child hunter following exposure to lead in game and plant tissue were also predicted to exceed 10 ug/dl in 5.6 percent of the hypothetically exposed population, which slightly exceeds EPA's target threshold of 5 percent, indicating potential unacceptable risk due to exposure to lead.

Uncertainties

The uncertainties associated with the procedures and inputs used to assess risks in this HHRA are as discussed in the *Uncertainties* section for the Peters Mine Pit Area.

O'Connor Disposal Area

Hazard Identification

The identification and screening of COPCs was conducted as described above in the *Hazard Identification* section for the Peters Mine Pit Area. Only those COPCs that were detected in at least one sample for the medium of concern in the OCDA are evaluated further in the HHRA for this area.

Exposure Assessment

For the OCDA, cancer risks and non-cancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the Site. The central tendency estimate (CTE), or the average exposure, was also evaluated.

The exposure assessment identified potential human receptors based upon an evaluation of current and potential future land uses in the OCDA. EPA consulted with members of the Upper Ringwood community to help determine how this area of the Site is currently being utilized by local residents. Based upon the zoning and demographic information gathered during the RI, as well as land use information provided by the Upper Ringwood community, the following exposure scenarios were evaluated in the HHRA:

Walker/Hiker /Dog Walker: This exposure scenario assumes that a walker/hiker/dog walker is exposed to surface soil in the OCDA through ingestion, dermal contact and inhalation of dust while walking through this area of the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may use the OCDA.

Dirt Biker/ATV Rider: Under this exposure scenario, a dirt biker/ATV rider is assumed to be exposed to surface soils through ingestion, dermal contact and inhalation of dust while riding dirt

bikes and ATVs through this area of the Site. Potential risks were evaluated for older children (age 7 – 16) and adults.

Wader: Under this exposure scenario, a wader is assumed to be exposed to sediment and surface water through ingestion and dermal contact while wading in the Park Brook which flows adjacent to the OCDA. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may wade in the Park Brook.

Hunter/Gatherer: Upper Ringwood residents informed EPA that community members regularly hunt game and gather wild plants at the Site for consumption. Therefore, the hunter/gatherer scenario evaluates potential risks associated with ingestion of game and plants collected from the Site. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults who may consume biota collected from the OU2 area of the Site.

Current Outdoor Worker: It is assumed that outdoor workers clearing brush along the utility right of way in the OCDA are currently exposed to surface soils via ingestion, dermal contact and inhalation of dust.

Future Resident: A portion of the OCDA is zoned for residential use. Therefore, it is assumed that future residents may be exposed to surface soils via ingestion, dermal contact and inhalation of dust while using their yards. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adult residents.

Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter/Gatherer: This scenario evaluates potential risk associated with cumulative exposure to the walker/hiker/dog walker, dirt biker/ATV rider, wader and hunter/gatherer through ingestion, dermal contact and inhalation of soil, ingestion and dermal contact of sediment and surface water, and ingestion of game and plant tissue. Potential risks were evaluated for young children (age 1 – 6), older children (age 7 – 16) and adults.

Typically, exposures are evaluated using a statistical estimate of the exposure point concentration (EPC), which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. For soil, surface water, and game and plant tissue, the lower of the maximum concentration or the 95 percent upper confidence limit (UCL) of the average concentration was used as the EPC for each COPC, with the exception of lead. For sediment, the maximum detected concentration for each COPC was used as the EPC, with the exception of lead. For lead, the average concentration was chosen as the EPC for all media, which is consistent with national guidance for evaluating exposure to lead.

Toxicity Assessment

Toxicity data for the HHRA for the OCDA were identified as discussed in the *Toxicity Assessment* section for the Peters Mine Pit Area. This information is presented in Appendix III, Tables 3-3a and 3-3b (non-cancer toxicity data summary for oral/dermal and inhalation) and Tables 3-3c and 3-3d (cancer toxicity data summary for oral/dermal and inhalation). Additional

toxicity information for all COPCs is presented in the HHRA for the OCDA.

Risk Characterization

Potential cancer risks and non-cancer hazards related to exposure to the OCDA were quantified as discussed in the *Risk Characterization* section for the Peters Mine Pit Area. A summary of the potential cancer risks and non-cancer health hazards for each exposure pathway is presented in Appendix III, Tables 4-3a and 4-3b.

The HHRA for the OCDA evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, Hunter/Gatherer, Current Outdoor Worker and Future Resident exposure scenarios, assuming an apportionment factor of 100 percent. This apportionment factor assumes that 100 percent of the receptors' exposure occurs within this area of the Site. Results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the OCDA falls at the upperbound of EPA's risk management range of 10^{-4} to 10^{-6} for the reasonable maximum exposure expected to occur. The cumulative potential cancer risk for the Hunter/Gatherer scenario for adult, young child and older child is 3×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to arsenic in plant and game tissue. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter/Gatherer scenario, hazard indices were above EPA's target HI of 1 for the circulatory system, skin, kidney and gastrointestinal tract. Under the Resident scenario, hazard indices were above EPA's target HI of 1 for the circulatory system and skin of the young child, for the reasonable maximum exposure expected to occur. However, following EPA's process for evaluating non-cancer hazards, when mechanisms of action for the COPCs are considered, non-cancer HIs for all critical effects are around the benchmark value of 1. Potential risks associated with all other exposure scenarios fell within or below EPA's risk management range.

The HHRA for the OCDA also evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader and Hunter exposure scenarios, assuming an apportionment factor of 54 percent, which represents the size of the OCDA relative to the size of all three source areas. The cumulative potential cancer risk for these exposure scenarios is 3×10^{-4} for the reasonable maximum exposure expected to occur, which indicates that there would be an unacceptable risk to these receptors, due primarily to arsenic in plant and game tissue. The apportioned potential non-cancer risk under the Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider and Wader scenarios was at or below EPA's target HI of 1 for all receptors. For the Hunter/Gatherer scenario, the HI for the adult, youth and young child for the gastrointestinal tract is 2, which is slightly above EPA's target HI of 1. However, when mechanisms of action for the COPCs are considered, non-cancer HIs for all critical effects are around the benchmark value of 1.

Blood lead levels for the young child hunter following exposure to lead in game and plant tissue were also predicted to exceed 10 ug/dl in 5.6 percent of the hypothetically exposed population, which slightly exceeds EPA's target threshold of five percent, indicating potential unacceptable risk due to exposure to lead.

Potential human health risk associated with exposure of a future recycling center worker to waste in the OCDA was also qualitatively assessed, given the Borough of Ringwood's expressed intent

to construct a recycling center in this area. The cancer risk to a future recycling center worker was estimated to be $2x10^{-5}$, which is within EPA's risk management range. In addition, evaluation of the potential non-cancer risk to a future recycling center worker resulted in an HI of 0.2, which is below EPA's benchmark value of 1.

Uncertainties

The uncertainties associated with the procedures and inputs used to assess risks in this HHRA are as discussed in the *Uncertainties* section for the Peters Mine Pit Area.

Ecological Risk Assessments

The potential impacts of Site-related contaminants on the ecological receptors that inhabit the Site were evaluated in the ecological risk assessments that were conducted for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas. The ecological risk assessment for each of the referenced areas consisted of two documents: a Screening Level Ecological Risk Assessment (SLERA) and a Baseline Ecological Risk Assessment (BERA).

The initial SLERAs followed a two-step approach consisting of a problem formulation and ecological effects evaluation step and an exposure estimate and risk calculation step. Chemicals of potential ecological concern (COPECs) were identified by comparing chemical data from each area to ecologically based screening levels (EBSLs). Chemicals were retained as COPEC if they were detected in at least one sample and if the maximum detected concentration was greater than the applicable EBSL. Pathways by which ecological receptors could be exposed to Site contaminants and ecologically relevant receptor groups were also identified. Completed exposure pathways included both direct exposure of primary and secondary trophic level receptors (i.e., lower-level food chain receptors) to COPECs, and food chain transfer to upper tropic level receptors. Exposure point concentrations (EPCs), which are estimates of COPEC concentrations at points of potential exposure, were then calculated for Site media. The average daily dose (ADD) of COPECs that upper trophic level receptors would be expected to receive through ingestion of food, surface water and incidental ingestion of soil/and or sediment was also determined.

Potential risk was then evaluated by calculating the ratio of an exposure estimate (EPC or ADD) to an ecological effects concentration. The resulting ratio is referred to as a hazard quotient (HQ). A HQ greater than 1 indicates that the potential exists for adverse ecological effects to occur as a result of Site-related exposures. Risks to lower trophic level receptors were evaluated by comparing EPCs to EBSLs. Risks to upper trophic level receptors were determined by comparing ADDs to toxicity reference values, which are laboratory determined doses above which ecological effects may be expected to occur and below which ecological effects should not occur. If the results of a SLERA indicate that risk to ecological receptors may exist, a BERA is then performed to further evaluate these potential risks using more realistic exposure assumptions.

The results of the SLERA for the Peters Mine Pit Area indicate that there are contaminants in soil and sediment that are present at concentrations greater than EBSLs, which indicates a

potential risk to terrestrial invertebrates, plants and aquatic invertebrates. The results of the SLERA prompted the performance of a BERA which incorporated dose modeling for aquatic exposure pathways and refinements to dose modeling for soil. The results of dose modeling for soil indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole and the American robin) are low with no HQ for any receptor exceeding 1. The results of dose modeling for sediment indicated that all Lowest Observed Adverse Effect Level (LOAEL) HQs are below 1, with the exception of copper in the tree swallow, which had a HQ of 2. These results indicate that risks associated with potential exposure of ecological receptors are low.

The SLERA for the Cannon Mine Pit Area indicates that there is a potential for adverse ecological impacts due to the presence of metals in soil at levels which exceed EBSLs. Furthermore, the results of food-chain modeling indicated that potential ecological risks within the Cannon Mine Pit Area were associated with exposures of metals in soil to the American robin, meadow vole and short-tailed shrew. The results of the SLERA prompted the performance of a BERA to provide an analysis of potential risks using more realistic exposure assumptions. The results of refined dose modeling for soil conducted as part of the BERA indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole and the American robin) are low, with no LOAEL HQ exceeding 1.

The SLERA for the OCDA concludes that there are potential risks to meadow vole, short-tailed shrew, American robin and the tree swallow associated with exposure to soil and sediment in the OCDA. These potential risks are primarily associated with exposure to antimony, lead and nickel. In addition, this SLERA concludes that low levels of bis (2- ethylhexyl)phthalate and cadmium in surface water, and metals in surface soil and sediment may pose a potential risk to plants and invertebrates in the OCDA. The results of the SLERA prompted the performance of a BERA to provide an analysis of potential risks using more realistic exposure assumptions. The results of refined dose modeling for soil and sediment conducted as part of the BERA indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole, American robin, red-tailed hawk and tree swallow) are low, with no LOAEL HQ exceeding 1.

Basis for Remedial Action

The HHRA's for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas demonstrate that unacceptable excess lifetime cancer risks may be associated with the consumption of game and plants collected from these areas of the Site due to arsenic. Furthermore, blood lead levels for the hypothetical young child hunter exposed to lead in plants and game collected from these areas were also predicted to exceed EPA's target threshold, indicating potential unacceptable risk due to exposure to lead.

The response action selected in this ROD is necessary to protect public health, welfare or the environment from actual or threatened releases of hazardous substances, pollutants or contaminants from the Site.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) were developed for waste and soil contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas based upon the findings of the respective RIs. The RAOs serve to address the human health risks presented by the potential exposure to waste and soil in these areas of the Site. The RAOs for these areas of the Site are as follows:

- Limit direct exposure to soil or fill materials containing hazardous substances at levels exceeding those set forth in the New Jersey State Residential Direct Contact Soil Remediation Standards (RDCSRSs);

- Limit or reduce exposures by residents, recreators, hunters, and/or hikers to an additional lifetime cancer risk range of between 1×10^{-4} and 1×10^{-6}, and lifetime non-carcinogenic HI less than 1.0 associated with impacted fill in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas; and

- Reduce the potential for contaminants in soil or fill materials to migrate into groundwater and surface water.

NJDEP has promulgated residential and commercial direct-contact remediation standards for a list of chemicals, including arsenic and lead. There are a number of detections throughout the Peters Mine Pit Area, Cannon Mine Pit Area and the OCDA that exceed these standards. While the expected future land uses do not include unrestricted (residential) exposure scenarios for all the areas addressed by this remedy, EPA and NJDEP have concluded that NJDEP's RDCSRSs would be protective for the expected future land uses for ecological receptors and for human exposures, and has identified these standards as the cleanup levels to satisfy the RAOs. Table 6 identifies the cleanup levels for the Site.

Given the Peters Mine Pit Area's location within the Ringwood State Park, EPA's expectation is that the fulfillment of the RAO's for the Site would allow this area to be used for recreational use.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1) requires that each remedial alternative be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery technologies to the maximum extent practicable. In addition, Section 121(b)(1) establishes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility or volume of hazardous substances. CERCLA §121(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants which at least attains Applicable or Relevant and Appropriate Requirements (ARARs) under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4).

Potential applicable technologies and process options were identified and screened using effectiveness, implementability and cost as the criteria, with the most emphasis on the effectiveness of the remedial technology. Those technologies and process options which passed the initial screening were assembled into remedial alternatives for waste and soil contained in the Peter Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas.

The construction time for each of the alternatives for the Peter Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas only reflects the time necessary to construct the alternative and does not include the time required to conduct pre-design investigations, design the remedy, negotiate the performance of the remedy with the potentially responsible parties or procure contracts for the design and construction of the remedy. EPA expects that the RAOs will be achieved upon completion of construction for those alternatives which are determined to be protective of human health and the environment.

All of the alternatives, with the exception of Alternative 7 for the Peters Mine Pit Area, Alternative 5 for the Cannon Mine Pit Area and Alternatives 5A and 5B for the OCDA would result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, and would require that a statutory review be conducted within five years after initiation of the remedial action to ensure that the remedies are, or will be protective of human health and the environment.

Peters Mine Pit Area

Alternative 1 – No Action

Section 300.430(e)(6) of the NCP (40 CFR §300.430(e)(6)), requires that the No Action alternative be considered as a baseline for comparison with other alternatives. Under this alternative, no corrective action of any kind would be implemented to address contaminated soil and waste contained in the Peters Mine Pit Area.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)[1]
Total Present Net Worth	$0
Construction Duration	0 months

[1] Value represents total present net worth of Operation and Maintenance costs.

Alternative 2 – Institutional and Engineering Controls

Under this alternative, institutional controls, such as a Deed Notice, would be implemented to prevent use of the property in a manner that could damage or undermine the effectiveness of the remedy thereby creating potential exposure to contaminants in the fill material. In addition, engineering controls, such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to confirm that land use in the vicinity of the Peters Mine Pit Area is consistent with the selected remedy and to ensure that zoning and deed restrictions are complied with. In addition, long-term

groundwater monitoring would also be implemented as a component of this alternative. The scope of a groundwater remedy for the OU3 ROD is expected to address long-term groundwater monitoring that is needed for the entire Site, including the Peters Mine Pit Area. In the interim, for costing purposes, quarterly groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented, EPA anticipates that the sampling frequency or number of wells sampled will be revised based on review of the groundwater analytical data.

Total Capital Cost	$17,800
Operation and Maintenance	$708,900 (Total)
Total Present Net Worth	$726,700
Construction Duration	1-2 months

Alternative 3 – Engineered Permeable Cap of Peters Mine Pit Area with Institutional Controls, Peters Mine Pit Pond would Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, a two-foot thick clean soil cover would be placed over the Peters Mine Pit and the surrounding fill area. The pit would not be filled in prior to placement of the soil cover, leaving the pit topographically lower than the surrounding area and enabling the restoration of the pond.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations. A permeable geotextile liner would be placed over the compacted base, followed by eighteen inches of clean soil and six inches of topsoil. The geotextile fabric is intended to minimize the possibility of cap failure that could result from soil erosion and subsidence. Appropriate vegetation would then be established. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$2,560,800
Operation and Maintenance	$683,300 (Total)
Total Present Net Worth	$3,244,100
Construction Duration	5-6 months

Alternative 4A - Fill Peters Mine Pit, Permeable Engineered Cap of Peters Mine Pit Area and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, clean imported fill would be placed within the Peters Mine Pit to

raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. Fill from areas surrounding the pit would then be consolidated within the pit. A geotextile fabric would be installed over the consolidated fill materials and a sufficient amount of clean fill and topsoil will be placed on top of the fabric to elevate the center of the cap to a level which is approximately three feet above that of the perimeter area and, thereby, create positive drainage away from the center of the cap onto the perimeter area and then away from this area onto surrounding terrain. As a result, this alternative removes the pond from the Peters Mine Pit Area. The need for a passive gas management system would be evaluated during design of this alternative.

Restoration of this area would also include vegetation with trees naturally present in Ringwood. The use of a permeable cap would permit the establishment of trees, including those with deep tap roots.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,345,500
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$5,111,000
Construction Duration	8-9 months

Alternative 4B - Fill Peters Mine Pit, Impermeable Engineered Cap of Peters Mine Area and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. Fill from areas surrounding the pit would then be consolidated within the pit. The area surrounding the pit would be backfilled with clean soil, and a geosynthetic clay liner (GCL) would be installed over the filled pit. A vegetative and protective soil cap consisting of 18 inches of clean fill and six inches of topsoil would then be installed to protect the GCL. Because the GCL is impermeable, a passive methane gas management system would need to be installed. This alternative also removes the pond from the Peters Mine Pit Area.

Prior to placement of the cap, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted

to verify that the base for the cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,476,800
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$5,242,300
Construction Duration	9-10 months

Alternative 4C - Fill Peters Mine Pit, Impermeable Engineered Cap of Peters Mine Area, Barrier Wall and Institutional Controls, Peters Mine Pit Pond would not Remain

This alternative is the same as Alternative 4B except that it would include the installation of a bentonite slurry wall or similar subsurface barrier wall surrounding the pit beginning at the ground surface and extending into the underlying competent bedrock to minimize the potential for overburden groundwater flow through the pit area. Groundwater within the bedrock would not be altered by the barrier wall as it would only extend 1 to 2 feet into the bedrock.

Total Capital Cost	$6,508,600
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$7,274,100
Construction Duration	10-11 months

Alternative 5 - In-Situ Stabilization for Entire Peters Mine Pit Area with Institutional Controls, Peters Mine Pit Pond would Remain

Under this alternative, the institutional controls described in Alternative 2 would be implemented. All soil and fill materials within and surrounding the Peters Mine Pit would be stabilized in place by mixing the soil/fill material with an admixture, such as Portland cement, fly ash and/or bentonite. Conventional construction equipment, specialized injection systems, and/or specialized power augers would be utilized to achieve adequate mixing of the soil/fill material and the admixture.

After the stabilized material has solidified, at least one foot of soil would be placed over the area and seeded to reestablish vegetation. The pit would be left topographically lower than the surrounding area, which would allow restoration of the pond.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$25,792,200
Operation and Maintenance	$704,600 (Total)

Total Present Net Worth	$26,496,800
Construction Duration	22-23 months

Alternative 6A - Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative institutional controls, such as a Deed Notice, would be applied to this area to prevent uses other than for conservation land/recreational activities. In addition, the need for engineering controls, such as the installation of warning signs and the placement of boulders, to restrict access to this area by ATVs and other vehicles would be considered during the remedial design and included if necessary. Soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to native soil, bedrock or to the water table, whichever is encountered first. If drums of waste or paint sludge are encountered, the excavation would continue until these materials are removed. While this alternative assumes that all excavated soil and fill would be disposed of off-site at an appropriately permitted facility, the segregation and reuse of suitable non-hazardous soil and fill as fill for the pit could be considered during design of this alternative. Clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. Debris-free mine tailings from the OCDA may be used in lieu of imported fill to raise the elevation of the pit. The area surrounding the pit would be filled with clean soil. A geotextile fabric would be installed over the fill materials and a sufficient amount of clean fill and topsoil will be placed on top of the fabric to elevate the center of the cap to a level which is approximately three feet above that of the perimeter area and, thereby, create positive drainage away from the center of the cap onto the perimeter area and then away from this area onto surrounding terrain. The need for a passive gas management system would be evaluated during the design of this alternative.

Restoration of this area would also include vegetation with trees naturally present in Ringwood. The use of a permeable cap would permit the establishment of trees, including those with deep tap roots.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$9,457,000
Operation and Maintenance	$1,463,600 (Total)
Total Present Net Worth	$10,920,600
Construction Duration	8-9 months

Alternative 6B - Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit, Barrier Wall and Impermeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls would be implemented as described in Alternative 6A. Soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to native soil, bedrock or to the water table, whichever is encountered first. If drums of waste or paint sludge are encountered, the excavation would continue until these materials are removed. While this alternative assumes that all excavated soil and fill would be disposed of off-site at an appropriately permitted facility, the segregation and reuse of suitable non-hazardous soil and fill as fill for the pit could be considered during design of this alternative. Clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. A bentonite slurry wall, or similar subsurface barrier wall, would be installed surrounding the pit beginning at the ground surface and extending into the underlying competent bedrock to minimize the potential for overburden groundwater flow through the pit area. The area surrounding the pit would then be backfilled with clean soil, and an impermeable GCL would then be installed over the filled pit. A vegetative and protective soil cap consisting if eighteen inches of clean fill and six inches of topsoil would then be installed to protect the GCL. The use of a GCL would preclude the restoration of the area with trees, as tree roots could compromise the GCL.

Because the GCL is impermeable, a passive methane gas management system would need to be installed. This alternative also removes the pond from the Peters Mine Pit Area.

Prior to placement of the cap, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$11,327,500
Operation and Maintenance	$1,463,600 (Total)
Total Present Net Worth	$12,791,100
Construction Duration	14-15 months

Alternative 7 - Removal and Off-Site Disposal of All Fill Material, Peters Mine Pit Pond would Remain

Under this alternative, soil/fill material within the Peters Mine Pit and surrounding fill area would be excavated to bedrock or clean overburden and transported off-site for disposal or recycling at an appropriately permitted facility. Post excavation soil sampling would be

conducted in the base and sidewalls of the soil excavations to confirm that all contamination has been addressed. The area would then be backfilled with clean fill to a level which would permit the establishment of a pond. Long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$41,305,600
Operation and Maintenance	$445,800 (Total)
Total Present Net Worth	$41,751,400
Construction Duration	25-26 months

Cannon Mine Pit Area

Alternative 1 – No Action

No corrective action of any kind would be implemented under this alternative. The No Action Alternative was retained, as required by the NCP, and provides a baseline for comparison with other alternatives.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)
Total Present Net Worth	$0
Timeframe	0 months

Alternative 2 – Institutional and Engineering Controls

Under this alternative, institutional controls would be implemented to prevent use of the property in a manner that could damage or undermine the effectiveness of the remedy thereby creating potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to confirm that land use in the vicinity of the Cannon Mine Pit Area is consistent with the selected remedy and to ensure that zoning and deed restrictions are complied with. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD will address long-term groundwater monitoring that is needed for the for the entire site including the Cannon Mine Pit Area. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$42,800
Operation and Maintenance	$384,300 (Total)
Total Present Net Worth	$427,100
Construction Duration	1-2 months

Alternative 3A – Permeable Engineered Cap of the Cannon Mine Pit Area

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Shallow fill materials located around the Cannon Mine Pit would be consolidated into the pit. Pit fill material would then be compacted and clean fill material would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A two-foot thick engineered soil cap, consisting of a geotextile fabric and a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit. The geotextile fabric is intended to minimize the possibility of cap failure that could result from soil erosion and subsidence. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations. The need for a passive gas management system would also be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$974,600
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$1,349,500
Construction Duration	5-6 months

Alternative 3B – Impermeable Engineered Cap of the Cannon Mine Pit Area

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Shallow fill materials located around the Cannon Mine Pit would be consolidated into the pit. Pit fill material would then be compacted and clean fill material would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A GCL would then be placed over the pit, followed by the placement of a soil cover to protect the liner and to allow vegetation to be established. Because the GCL is impermeable, a passive methane gas management system would need to be installed. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$1,214,900
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$1,589,800
Construction Duration	5-6 months

Alternative 4 – In-Situ Stabilization of the Entire Cannon Mine Pit Area

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Fill materials within and surrounding the Cannon Mine Pit would be stabilized in place by mixing the soil/fill material with an admixture, such as Portland cement, fly ash and/or bentonite. Conventional construction equipment, specialized injection systems, and/or specialized power augers would be utilized to achieve adequate mixing of the soil/fill material and the admixture. After the stabilized material has solidified, clean soil would be placed in low-lying areas to ensure drainage of surface water runoff. A soil cover consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit to allow vegetation to be established.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$5,926,300
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$6,301,200
Construction Duration	7-8 months

Alternative 5 – Removal and Off-Site Disposal of All Industrial and Municipal Fill Material within the Cannon Mine Pit Area

Under this alternative, all of the fill/waste material within the Cannon Mine Pit Area would be excavated and disposed of off-site at an appropriately permitted facility. The mine tailings and blast rock at the bottom of the pit would not be removed. The pit would then be backfilled with clean fill material and graded to achieve a relatively flat topography. A minimum of six inches of top soil would be placed over this area and vegetation will be established. Long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the Cannon Mine Pit Area. In the interim, for costing purposes, annual groundwater monitoring of a subset of existing wells surrounding the Cannon Mine Pit Area for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$10,844,200
Operation and Maintenance	$168,500 (Total)
Total Present Net Worth	$11,012,700
Construction Duration	14-15 months

Alternative 6 – Relocation of Mine Tailings from the O'Connor Disposal Area and Placement of a Permeable Engineered Cap

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Existing pit fill material would be compacted and mine tailings from the OCDA would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A two-foot thick engineered soil cap, consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. In addition, the potential for subsidence would be considered during design evaluations. It is expected that a passive methane gas management system would need to be installed as part of this alternative because the mine tailings would become relatively impermeable once compacted.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$1,065,800
Operation and Maintenance	$347,500 (Total)
Total Present Net Worth	$1,413,300
Construction Duration	5-6 months

O'Connor Disposal Area

Alternative 1 – No Action

No remedial action of any kind would be implemented under this alternative. The No Action Alternative was retained, as required by the NCP, and provides a baseline for comparison with other alternatives.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)
Total Present Net Worth	$0
Timeframe	0 months

Alternative 2 – Institutional and Engineering Controls

Under this alternative, institutional controls would be implemented to prevent use of the property in a manner that could damage or undermine the effectiveness of the remedy thereby creating potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to ensure that the implemented engineering controls remain protective and to confirm that land use in the vicinity of the OCDA is consistent with the selected remedy. In addition, long-term groundwater monitoring would

also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD will address long-term groundwater monitoring that is needed for the for the entire site including the OCDA. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$111,500
Operation and Maintenance	$320,500 (total)
Total Present Net Worth	$432,000
Construction Duration	1-2 months

Alternative 3 – Permeable Engineered Cap – Minimal Grading

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Minimal grading of fill materials would be conducted to ensure drainage from this area, fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The soil cap would consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil. The geotextile fabric is intended to minimize the possibility of cap failure that could result from soil erosion and subsidence. Vegetation would also be restored in this area. Because there are wetlands within the area to be capped, these wetlands would be restored within the OCDA. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,947,500
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$5,432,400
Construction Duration	13-14 months

Alternative 4A – Site Grading and Permeable Engineered Cap

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Fill from the fringe areas of this area would be consolidated to the center of this area to minimize the size of the required cap and to permit the potential reuse of this area**.** During consolidation of the fill material from the fringe areas, the soil/fill material will be visually inspected to verify the findings of the RI. Should anything be encountered in the fill that is not suitable for reuse as sub-grade fill underneath the engineered cap, it will be segregated and transported for off-site disposal as the work progresses. After consolidation, fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The soil cap would consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil. Vegetation would also be restored in this area. The excavated areas beyond the engineered cap where soil/fill would be removed for consolidation under the cap would be backfilled with six

inches of certified clean fill and rough graded to ensure proper drainage prior to revegetation. The cleaned up fringe areas would encompass approximately four acres. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the OCDA. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,865,100
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$5,350,000
Construction Duration	13-14 months

Alternative 4B – Site Grading and Impermeable Engineered Cap

This alternative is the same as Alternative 4A, except that a GCL would be placed over the fill materials instead of a two-foot thick soil cap. Soil cover would be placed over the liner to protect the liner and to allow vegetation to be established. Because the GCL is impermeable, a passive methane gas management system would need to be installed. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the cap achieves design specifications prior to placing the cover.

Total Capital Cost	$5,950,200
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$6,435,100
Construction Duration	15-16 months

Alternative 5A – Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings

This alternative provides for the excavation of all soil/fill material from the OCDA down to the top of the underlying mine tailings and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities. The undisturbed mine tailings at the bottom of the OCDA which are not comingled with wastes and fill materials could be removed and potentially reused onsite within the Peters Mine Pit Area in place of clean fill that would otherwise need to be transported through the community.

Following the excavation and disposition of fill and tailings, six inches of topsoil would be placed throughout the excavated area to enable revegetation of the OCDA. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the OCDA. The selection of a groundwater remedy for the operable unit 3 ROD will address long-term groundwater monitoring that is needed for the for the entire site including the OCDA. In the interim, for costing purposes, annual groundwater monitoring of a subset of existing wells surrounding the OCDA would be performed for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling

frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$32,437,200
Operation and Maintenance	$168,700 (total)
Total Present Net Worth	$32,605,900
Construction Duration	23-24 months

Alternative 5B – Removal of Fill for Off-Site Disposal

This alternative is the same as Alternative 5A except that instead of reusing a portion of the mine tailings as fill for the Peters Mine Pit, all undisturbed mine tailings located beneath the fill material would be left in place in the OCDA.

Total Capital Cost	$26,023,100
Operation and Maintenance	$168,700 (total)
Total Present Net Worth	$26,191,800
Construction Duration	18-20 months

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting remedies for Sites, EPA considers the factors set out in CERCLA § 121, 42 U.S.C. § 9621, by conducting a detailed analysis of the viable remedial alternatives pursuant to the NCP, 40 CFR § 300.430(e)(9), EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies*, and OSWER Directive 9355.3-01. The detailed analysis consisted of an assessment of the individual alternatives against each of nine evaluation criteria at 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis focusing upon the relative performance of each alternative against the criteria.

Threshold Criteria - The following two criteria are known as "threshold criteria" because they are the minimum requirements that each alternative must meet in order to be eligible for selection as a remedy:

1. *Overall Protection of Human Health and the Environment:* Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or institutional controls.

2. *Compliance with applicable or relevant and appropriate requirements (ARARs):* Section 121 (d) of CERCLA and NCP § 300.430(f) (1) (ii) (B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectively

referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those State standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified in a timely manner and are more stringent than Federal requirements may be relevant and appropriate.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes or provides a basis for invoking a waiver.

Primary Balancing Criteria - The next five criteria, criteria 3 through 7, are known as "primary balancing criteria". These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given site-specific data and conditions:

3. *Long-term effectiveness and permanence:* A similar degree of long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. This criterion includes the consideration of residual risk that will remain on-site following remediation and the adequacy and reliability of controls.

4. *Reduction of toxicity, mobility, or volume through treatment:* Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

5. *Short-Term Effectiveness:* Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community and the environment during construction and operation of the remedy until cleanup levels are achieved.

6. *Implementability:* Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability

of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

7. Cost: *Includes estimated capital and O&M costs, and net present worth value of capital and O&M costs.*

Modifying Criteria - The final two evaluation criteria, criteria 8 and 9, are called "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may modify the preferred alternative or cause another response measure to be considered.

8. *State acceptance:* Indicates whether based on its review of the RI/FS reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected remedies.

9. *Community acceptance:* Summarizes the public's general response to the remedial alternatives described in the Proposed Plan and the FS reports. This assessment includes determining which of the remedial alternatives the community supports, opposes, and/or has reservations about.

A comparative analysis of the remedial alternatives considered for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, based upon the above evaluation criteria, follows.

Peters Mine Pit Area

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to contaminated fill material. While Alternative 2 would rely on institutional and engineering controls to reduce the likelihood of exposure to contaminated fill material, the potential for exposure to waste material would remain. Therefore, Alternative 2, while protective, would not be as protective of human health and the environment as other alternatives.

Alternatives 3 through 7 eliminate exposure pathways to the waste material by either containing the fill under an engineered cap, solidifying the fill material and/or through excavation and off-site disposal of the fill material, and are protective.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternatives 1 would not address fill material which contains contaminants at levels in excess of promulgated soil standards and would not comply with ARARs.

Alternatives 2 through 7 address the contaminated fill material by either containing the fill behind boulders or under an engineered cap, solidifying the fill material and/or through

excavation and off-site disposal of the fill material. Therefore, Alternatives 2 through 7 will comply with chemical specific ARARs, including the State of New Jersey's RDCSRSs by mitigating the potential for exposure to contaminated fill. In addition, Alternatives 2 through 7 are expected to comply with location-specific and action-specific ARARs, including the mitigation and restoration of wetlands disturbed during the implementation of these remedial alternatives. Therefore, Alternatives 2 through 7 are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no actions would be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use and can provide some effectiveness in the long-term as long as these institutional controls are maintained. However, its overall effectiveness is limited in comparison to Alternatives 3 through 7.

Alternatives 3, 4A, 4B and 4C employ engineered caps to protect against direct contact with contaminated fill material. In addition, for Alternatives 4A, 4B and 4C, the installation of these caps will also result in positive drainage away from the Peters Mine Pit, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater and to reduce the migration of contaminants to groundwater. Therefore, these alternatives and are considered to be effective. However, these engineered caps would need to be monitored and maintained to remain effective in the long term. Alternative 6A and Alternative 6B provides for the permanent removal of approximately 22,000 tons of relatively shallow fill material, in addition to the installation of a cover to prevent direct contact with the remaining fill material. Therefore, Alternative 6A and Alternative 6B are considered to be more effective in the long term than Alternatives 3, 4A, 4B and 4C. However, maintenance of the engineered cap will still be required in the long term.

Alternative 5 would permanently stabilize the contaminated fill material, which would serve to minimize the potential for exposure to contaminants. In addition, stabilization of the fill material would also reduce or eliminate the mobility of contaminants in the fill. Alternative 7 would permanently remove all of the contaminated fill material from the Peters Mine Pit Area of the Site. Therefore, Alternatives 5 and 7 are the most effective at achieving long-term effectiveness and permanence at the Site.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants in the fill material and would not include any actions that would reduce their toxicity, mobility, or volume.

Alternatives 3 and 4A do not employ any treatment that would reduce the toxicity, mobility or volume of contaminants. However, these alternatives would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation by capping the fill. Installation of an engineered cap would not reduce the toxicity or volume of contaminated fill. Alternatives 4B would further reduce the mobility of contaminants through installation of an

impermeable liner, which would minimize the leaching of contaminants by precipitation. Alternative 4C would further reduce the mobility of contaminants through installation of a subsurface barrier wall in addition to an impermeable liner. The subsurface barrier wall would restrict the movement of overburden groundwater through the fill material and minimize associated leaching of contaminants. Alternative 6A and Alternative 6B provide for the permanent removal of approximately 22,000 tons of fill in addition to the installation of a cover, and would reduce the volume of contaminated fill at the Site as well as the mobility of contaminants.

Alternative 5 would reduce both the toxicity and mobility of contaminants through stabilization of the contaminated fill. However, the volume of contaminated fill material would not be reduced through implementation of this alternative. Alternative 7 would provide for the greatest reduction in the volume of contaminants in the Peters Mine Pit Area, as all of the fill material in the pit would be permanently removed from the Site.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts on the community.

Alternative 3, which consists of capping of the fill material in place, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. However, workers and the community could be impacted by dust and truck traffic associated with the transport and placement of clean soil during installation of the cap. Alternatives 4A, 4B and 4C are expected to have greater potential impacts on the community and workers due to the additional handling and transportation of impacted fill material. During implementation of these alternatives, workers would have the potential to come into contact with contaminated fill material while consolidating fill materials and installing the cap.

Alternative 5 leaves the impacted fill material in place, but there is a higher potential for worker exposure to impacted fill material as a result of the mixing process. Workers and the surrounding community may also have some additional potential for exposure to contaminants through dust and air emissions from the mixing process, though plans would be developed to mitigate dust and air emissions.

Alternative 6A and Alternative 6B pose a greater risk of exposure to contaminated fill material than the previously discussed alternatives due to the excavation of fill material. Workers and the community could potentially be exposed to fill material during the excavation, segregation, loading and off-site disposal of the contaminated fill. Furthermore, the Ringwood community would be subjected to the additional truck traffic associated with off-site disposal of the fill material.

Alternative 7 presents the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with this alternative presents the greatest potential for community and worker

exposure to contaminated material. It is estimated that more than 28,700 truck trips through the Ringwood community would be required to transport all of the waste material off site as part of this alternative. In addition, voids, large concrete structures and other barriers may be encountered during excavation of fill from the Peters Mine Pit, which could pose an additional hazard to Site workers.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves implementation of limited engineering controls. Alternatives 3, 4A, 6A, 4B, 4C and 6B would involve additional time to construct associated with construction of engineered caps. Alternatives 5 and 7 would involve the greatest construction time as they would involve either processing or excavation of all of the fill in the Peters Mine Pit.

Implementability

Alternative 1 is the most readily implementable as no action would be required. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternative 3 is expected to be the next easiest alternative to implement as the soil cap would be installed without the need to move fill materials to prepare the base for the cap. However, this alternative would require additional effort to dewater the pit and to handle the extracted groundwater. Alternatives 4A and 4B, while implementable, would require additional work to consolidate the fill material prior to installation of the cap. Alternative 6A, while also implementable, will require additional work to excavate the impacted fill material down to the water table prior to placement of clean fill material and installation of a soil cover.

Alternatives 4C and 6B would require more extensive excavation work with specialized equipment to install an impermeable barrier wall into the bedrock. Equipment, such as continuous excavation trenchers with ripping teeth or percussive chisels, may be required to remove the top one to two feet of bedrock prior to installation of the barrier wall. Therefore, Alternatives 4C and 6B are expected to be more difficult to implement than Alternatives 1, 2, 3, 4A, 4B and 6A.

Alternatives 5 and 7 are expected to be the most difficult of the alternatives to implement. Alternative 5 would likely require specialized equipment to mix admixture into the fill material at depth. Alternative 7 may also require the use of specialized equipment to excavate fill material to a depth of 90 feet below ground surface. In addition, the heterogeneity of the fill material, including the potential presence of concrete structures and metal, and the potential structural instability of the pit would complicate implementation of these alternatives.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 3 ($3,244,100), Alternative 4A ($5,111,000), Alternative 4B ($5,242,300), Alternative 4C ($7,274,100), Alternative 6A ($10,920,600), Alternative 6B ($12,791,100), Alternative 5 ($26,496,800) and Alternative 7 ($41,751,400). Alternatives 5 and 7 are significantly more costly than the other alternatives due to the need to effectively treat or remove all of the fill material contained within the Peters Mine Pit to an approximate depth of 90 feet below ground surface. Alternative 6A and Alternative 6B are more costly than Alternatives 3, 4A, 4B and 4C due to the added cost of excavation and off-site disposal of fill material down to the water table.

The cost estimates included in this ROD are expected to be accurate within a range of +50 percent to -30 percent. Total present worth costs were calculated assuming a discount rate of seven percent.

State/Support Agency Acceptance

The State of New Jersey concurs with the selected remedy. A letter of concurrence is attached as Appendix V.

Community Acceptance

Community acceptance of the selected remedy for the Peters Mine Pit Area was evaluated based upon the comments received during the public comment period. The majority of the comments received from the public at the November 7, 2013 public meeting, and in writing subsequent to this meeting, did not fully support the selected remedy for the Peters Mine Pit Area. The public generally opposes any remedy which does not provide for the complete excavation and off-site disposal of all of the fill material contained within the Peters Mine Pit.

The Borough of Ringwood supports capping of the Peters Mine Pit Area but does not support the excavation of fill material located above the water table. The Borough of Ringwood believes that the excavation of this fill material creates undue risks while providing no additional protection of human health and the environment.

Cannon Mine Pit

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to fill material. While Alternative 2 would rely on institutional and engineering controls to reduce the likelihood of exposure to fill material, the potential for exposure to waste material would remain. Therefore, Alternative 2, while protective, would not be as protective of human health and the environment as other alternatives.

Alternatives 3A, 3B and 6 would be protective of human health and the environment by

eliminating exposure pathways to the waste material by containing the contaminated fill under an engineered cap. Alternative 4 provides for protection of human health and the environment by stabilizing the fill material and covering it with soil, thereby eliminating the potential for exposure to any contaminants in the fill material. Alternative 5 would eliminate the potential for exposure to contaminants in the fill material in the Cannon Mine Pit by providing for the complete excavation and off-site disposal of the fill material. Therefore, Alternative 5 would also provide for protection of human health and the environment.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Under Alternative 1, no action would be taken address fill material which contains contaminants at levels in excess of promulgated soil standards. Therefore, Alternative 1 would not comply with chemical-specific ARARs.

Alternative 2 would address fill material which contains contaminants at levels in excess of New Jersey's RDCSRSs by restricting access to the fill by installing a fence. Therefore, Alternative 2 would be expected to comply with chemical-specific ARARs. Alternatives 3A, 3B, and 6 would address the contaminated fill material by containing the fill material under an engineered cap, thereby removing the potential for exposure to the fill. These alternatives would, therefore, comply with chemical-specific ARARs. Alternatives 4 and 6 would comply with chemical-specific ARARs by either solidifying the fill material which exceeds RDCSRSs or through excavation and off-site disposal of the fill material. In addition, all of the alternatives are expected to comply with location-specific and action-specific ARARs. Therefore, Alternatives 2 through 6 are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no action would be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use. However, the potential for human and ecological exposure would remain. Therefore, its overall effectiveness is limited in comparison to other alternatives.

Alternatives 3A, 3B and 6 employ covers to protect against exposure with contaminated fill material. In addition, the installation of these caps will also result in positive drainage away from the Cannon Mine Pit, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater and to limit the migration of contaminants to groundwater. Therefore, these alternatives are considered to be effective in the long term. However, these covers would need to be routinely inspected and maintained to remain effective in the long term.

Alternative 4 would provide for permanent stabilization of the contaminated fill material, followed by the installation of a soil cover which would minimize the potential for direct contact with contaminants and the potential migration of contaminants to groundwater. Furthermore, Alternative 5 would remove all of the fill material above the blast rock from the Site, permanently eliminating the potential for exposure to this fill material at the Site. Therefore, Alternatives 4 and 5 are the most effective in the long term.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants and would not reduce their toxicity, mobility, or volume.

Alternatives 3A, 3B and 6 would not employ any treatment that would reduce the toxicity or volume of contaminants. However, these alternatives would provide for the installation of an engineered cap, which would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation through the fill.

Alternative 4 would reduce both the toxicity and mobility of contaminants through stabilization of the contaminated fill. However, the volume of contaminated fill material would not be reduced through implementation of this alternative. Alternative 5 would provide for the greatest reduction in the toxicity, mobility and volume of contamination in the Cannon Mine Pit Area by completely removing all of the fill located above the blast rock from the Site.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts on the community.

Alternative 3A and 3B, which consist of capping fill material in place, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. However, workers and the community could be impacted by dust and truck traffic associated with the transport and placement of clean soil during installation of the cap. Alternative 6 is expected to have greater potential impacts on workers and the community than Alternatives 3A and 3B, due to the need to transport and handle mine tailings from the OCDA.

Alternative 4 leaves the impacted fill material in place, but there is a higher potential for worker exposure to impacted fill material as a result of the mixing process. In addition, machinery associated with the mixing process may present additional physical hazards and safety concerns. Workers and the surrounding community may also have some additional potential for exposure to contaminants through dust and air emissions from the mixing process.

Alternative 5 presents the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with this alternative presents the greatest potential for community and worker exposure to contaminated material. It is estimated that more than 7,800 truck trips through the Ringwood community would be required to transport all of the waste material off site as part of this alternative. The impacts associated with these activities would need to be addressed through the development of transportation control plans, air monitoring and dust mitigation control plans.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves

implementation of limited engineering controls. Alternatives 3A, 3B, 6 and 4 would involve additional time to construct associated with construction of engineered caps or stabilization of the fill. Alternative 5 would involve the greatest construction time as it would require excavation of all of the fill above the blast rock in the Cannon Mine Pit.

Implementability

Alternative 1 is the most readily implementable as no action would be required. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternative 3A and 3B are expected to be the next easiest alternatives to implement as construction of the engineered caps can be conducted with minimal disruption of the existing fill materials in the pit and with minimal consolidation of materials surrounding the pit. In addition, standard construction techniques and equipment would be utilized. Alternative 6, which also provides for the construction of an engineered cap, is expected to be more difficult to implement than Alternatives 3A and 3B, due to the need to excavate and transport mine tailings from the OCDA to the Cannon Mine Pit Area.

Alternatives 4 and 5 are expected to be the most difficult of the alternatives to implement. Alternative 4 would likely require specialized equipment to mix admixture into the fill material at depth. A treatability study would also need to be conducted to ensure that the selected stabilizing agent can effectively stabilize all contaminants of concern. In addition, if large items or items that may entangle the mixing equipment are present in the fill, these items could cause equipment damage and breakdowns. Alternative 5 will require the use of sloping and shoring systems to allow for excavation of fill to the depth of blast rock. In addition, the heterogeneity of the fill material and the potential presence of voids in the pit would complicate implementation of these alternatives.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 3A ($1,349,500), Alternative 6 ($1,413,300), Alternative 3B ($1,589,800), Alternative 4 ($6,301,200), and Alternative 5 ($11,012,700). Alternatives 4 and 5 are significantly more costly than the other alternatives due to the need to effectively treat or remove all of the fill material contained within the Cannon Mine Pit to the depth of blast rock.

State/Support Agency Acceptance

The State of New Jersey concurs with the selected remedy. A letter of concurrence is attached as Appendix V.

Community Acceptance

Community acceptance of the selected remedy for the Cannon Mine Pit Area was evaluated based upon the comments received during the public comment period. The majority of the comments received from the public at the November 7, 2013 public meeting, and in writing subsequent to this meeting, did not support the selected remedy for the Cannon Mine Pit Area. The public generally opposes any remedy which does not provide for the complete excavation and off-site disposal of all of the fill material contained within the Cannon Mine Pit. The Borough of Ringwood supports capping of the Cannon Mine Pit Area.

O'Connor Disposal Area

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to fill material. While Alternative 2 would rely on institutional and engineering controls to reduce the likelihood of exposure to fill material, the potential for exposure to waste material would remain. Therefore, Alternative 2, while protective, would not be as protective of human health and the environment as Alternatives 3 through 5B.

Alternatives 3, 4A and 4B would protect human health and the environment by limiting potential exposure to fill materials by containing them with a cap; the caps would also reduce infiltration of precipitation through the fill materials and the potential for migration of contaminants from the fill into the groundwater and surface water. Because this disposal area is located directly adjacent to Peters Mine Road and is therefore readily accessible, it may be attractive to trespassers (potentially including ATV users) and, therefore, these capping alternatives would require diligent monitoring and maintenance to ensure the integrity of the caps over time. If the area was reused as the site of a Borough recycling center, concerns regarding damage to the cap and trespassing would be reduced. Alternatives 5A and 5B provide the greatest level of protection of human health and the environment at the OCDA as they provide for complete excavation and off-site disposal and/or reuse of the fill material, thereby removing all potential exposure pathways to these materials.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Under Alternative 1, no action would be taken address fill material which contains contaminants at levels in excess of promulgated soil standards. Therefore, Alternative 1 would not comply with chemical-specific ARARs.

Alternative 2 would address fill material which contains contaminants at levels in excess of New Jersey's RDCSRSs by restricting access to the fill by installing a fence. Therefore, Alternative 2 would be expected to comply with chemical-specific ARARs. Alternatives 3, 4A, and 4B would address the contaminated fill material by containing the fill material under an engineered cap, thereby removing the potential for exposure to the fill. These alternatives would, therefore, comply with chemical-specific ARARs. Alternatives 5A and 5B would comply with chemical-

specific ARARs through excavation and off-site disposal of the impacted fill material. In addition, all of the alternatives are expected to comply with location-specific and action-specific ARARs, including the mitigation and restoration of wetlands disturbed during the implementation of these remedial alternatives. Therefore, Alternatives 2 through 5B are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no actions would be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use. However, the potential for human and ecological exposure would remain. Therefore, its overall effectiveness is limited in comparison to other alternatives.

Alternatives 3, 4A and 4B employ engineered caps to protect against exposure with contaminated fill material. In addition, the installation of these caps will also result in positive drainage away from the OCDA, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater and to limit the migration of contaminants to groundwater. Therefore, these alternatives are considered to be effective. However, these engineered caps would need to be maintained over the long term to remain effective. These alternatives would also leave waste within the State of New Jersey Category 1 stream buffer zone/floodplain of Park Brook which would potentially subject these engineering controls to additional maintenance issues associated with flooding and erosion. As noted above, because this disposal area is located directly adjacent to Peters Mine Road and is therefore readily accessible, it may be attractive to trespassers (potentially including ATV users) whose use could present some further maintenance challenges. If the area was reused as the site of a Borough recycling center, concerns regarding damage to the cap and trespassing would be reduced because the center would be in active use.

Alternatives 5A and 5B would provide for the removal of all of the contaminated fill material from the OCDA, permanently eliminating the potential for exposure to this fill material at the Site. Therefore, Alternatives 5A and 5B are the most effective in the long term. Additionally, Alternatives 5A and 5B would allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be required under the other alternatives.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants and would not reduce their toxicity, mobility, or volume.

Alternatives 3, 4A and 4B would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation by capping the fill. In addition, installation of an engineered cover would reduce the potential of contaminated fill washing into the Park Brook during rain events. However, these alternatives would not reduce the toxicity or volume of contaminated fill.

Alternative 5A and 5B would provide for the greatest reduction in the toxicity, mobility and volume of contamination in the OCDA by permanently removing all of the contaminated fill from this area of the Site.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts.

Alternative 3, which consist of capping fill material in place without consolidation of fill, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. However, the community and workers could be affected by dust generated by trucks hauling clean soil to the Site for the cap, or during placement of soil during cap construction. Alternatives 4A and 4B are expected to have greater short term impacts on workers and the community than Alternative 3, due to the need for additional handling and consolidation of the contaminated fill. The potential exists for workers to come into contact with contaminated fill materials during the grading of materials necessary for implementation of these alternatives.

Alternative 5A and 5B present the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with these alternatives presents the greatest potential for community and worker exposure to contaminated material. It is estimated that 12,519 truck trips through the Ringwood community would be required to transport all of the waste material off site under these alternatives. The impacts associated with these activities would need to be addressed through the development of transportation control plans, air monitoring and dust mitigation control plans.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves implementation of limited engineering controls. Alternatives 3, 4A and 4B would involve additional time to construct associated with construction of engineered caps. Alternatives 5A and 5B would involve the greatest construction time as they would involve excavation of all of the fill material from the OCDA.

Implementability

Alternative 1 is the most readily implementable as there are no activities associated with this alternative. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternatives 3, 4A and 4B are expected to be the next easiest alternatives to implement as they involve the construction of engineered caps over contaminated fill materials, which will be left in place beneath the caps. EPA anticipates that these alternatives can be implemented with standard construction techniques and equipment. While Alternative 3 provides for minimal

grading of fill before placement of a soil cap, the existing steep slope in this area raises concerns regarding slope stability during construction and the minimization of erosion of the cap and fill after construction. Alternatives 4A and 4B will require additional work during construction to consolidate fill material from the fringe areas of the OCDA to the center of this area prior to the installation of an engineered cap. However, these caps would have a more stable top and side slope than the cap that would be installed under Alternative 3. Furthermore, as discussed in more detail below, the Borough has informed EPA that it wishes to construct a new recycling center on the OCDA, and that it has also taken steps towards achieving that goal. If the area was reused as the site of a Borough recycling center, additional paving, grading and landscaping would add to the cap's stability.

Alternatives 5A and 5B, which involve excavation and off-site disposal of contaminated fill from the OCDA, are also considered to be implementable. It is expected that conventional construction equipment would be utilized to remove fill from this area, given that the depth of fill does not exceed 20 feet. However, dewatering of groundwater and/or diversion of a portion of the Park Brook may be required to remove fill located in some portions of this area.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 4A ($5,350,000), Alternative 3 ($5,432,400), Alternative 4B ($6,435,100), Alternative 5B ($26,191,800), and Alternative 5A ($32,605,900). Alternatives 5A and 5B are significantly more costly than the other alternatives as they provide for the complete removal and off-site disposal of contaminated fill material from the OCDA. Alternative 5A may achieve significant cost savings over Alternative 5B by providing for the reuse of mine tailings as fill for the Peters Mine Pit Area in lieu of off-site disposal.

State/Support Agency Acceptance

The State of New Jersey concurs with the selected remedy. A letter of concurrence is attached as Appendix V.

Community Acceptance

Community acceptance of the selected remedy for the OCDA was evaluated based upon the comments received during the public comment period. The majority of the comments received from the public at the November 7, 2013, public meeting, and in writing subsequent to this meeting support Alternative 5A, which is EPA's selected remedy for the OCDA. The public generally opposes any remedy which does not provide for the complete excavation and off-site disposal of all of the fill material contained within the OCDA, including Alternative 4A, which EPA has identified as a contingency remedy for this area of the Site.

The Borough of Ringwood disagrees with EPA's selection of Alternative 5A as the remedy for the OCDA. The Borough cites concerns that this area would not be backfilled to grade if Alternative 5A were implemented, leaving a sloped area that would limit reuse of the OCDA and potentially impact the stability of Peters Mine Road. However, the Borough supports selection of Alternative 4A, as it believes that this is the only alternative which would be protective of human health and the environment and leave this area in a state that would allow for it to be productively reused.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). Principal threat wastes are source materials that include or contain hazardous substances, pollutants or contaminants that act as a reservoir of contaminants that can migrate to groundwater, surface water or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in groundwater may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. Non-principal threat wastes are those wastes that generally can be reliably contained and present only a low risk in the event of exposure.

The remedial alternatives that have been evaluated for the Peters Mine Pit, Cannon Mine Pit, and the OCDA would address paint sludge and drummed industrial waste which likely remain in these areas of the Site. However, principal threat wastes have not been identified at the Site.

SELECTED REMEDY

Peters Mine Pit Area

Based upon an evaluation of the results of Site investigations, input from the National Remedy Review Board (NRRB), the detailed analysis of the various remedial alternatives, and public comments, EPA has selected Alternative 6A (Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain) as the remedy for the Peters Mine Pit Area of the Site. This alternative includes the following components:

- Dewatering of the Peters Mine Pit pond with proper disposal of removed water;

- Excavation of soil and fill material from the fill area surrounding the Peters Mine Pit down to native soil, bedrock or the water table, whichever is encountered first. If drums of waste or paint sludge are encountered, the excavation would continue until these materials are removed. Segregated non-hazardous soil or fill from this excavation, if suitable, may be reused as fill for the excavated area and/or the Peters Mine Pit; all other excavated material will be disposed of off-site at an appropriately permitted facility;

- Placement and compaction of a sufficient amount of clean fill in the Peters Mine Pit to raise the elevation to a level at least two feet above the average surface water elevation of the removed pond. Debris-free and non-hazardous mine tailings from the OCDA may also be used as fill for this purpose in lieu of importing clean fill from an off–site source;

- Placement and compaction of clean fill, as needed, to fill in and/or level off the excavated area surrounding the Peters Mine Pit;

- Recontour and take other measures, as needed, to prepare the surface of the Peters Mine Pit area to ensure that it provides an adequate base for a geotextile fabric and subsequent cap;

- Installation of a geotextile fabric over the fill materials in the Peters Mine Pit Area. This will be followed by the placement of a sufficient amount of clean fill and topsoil on top of the fabric to cap the Peters Mine Pit and elevate the center of the cap to a level which is at least three feet above that of the perimeter area and, thereby, create positive drainage away from the center of the cap onto the perimeter area and then away from this area onto surrounding terrain;

- Restoration of the Peters Mine Pit Area with a variety of trees and other vegetation which are indigenous to the Ringwood area, with the intent of making this an area that can be used for recreational purposes as part of Ringwood State Park;

- Implementation of institutional control(s), such as deed notice(s), to prevent use of the capped area for any purposes other than conservation land/recreational activities;

- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and

- Monitoring of groundwater quality in the Peter's Mine Pit Area until a groundwater remedy is selected for the Site.

As part of this remedy, it is estimated that 22,700 tons of fill material will be excavated from the fill area surrounding the Peters Mine Pit. Any drums of waste or paint sludge identified during the removal of this material will be characterized and disposed of off-site at an appropriately permitted facility. Furthermore, the potential segregation of non-hazardous soil from the contaminated fill will be considered during the design of this remedy. If the segregation of the clean soil from the fill is determined to be practical and cost effective, the segregated soil could then be used as backfill for the Peters Mine Pit. Prior to placement of a soil cover over the Peters Mine Pit Area, the pit will be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing will also be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. Furthermore, water generated during the dewatering operations will be sampled, treated as necessary, and discharged at the Site.

The need for a passive gas management system would also be evaluated during design of this remedy.

As noted above, restoration of the Peters Mine Pit Area will also include vegetation with native trees endemic to the Ringwood State Park. The use of a thick, permeable soil cap will permit the establishment of trees, including those with deep tap roots. Restoration of the Peters Mine Pit Area in this manner will allow this area to return to a state similar to that of surrounding areas of the Ringwood State Park and allow for recreational use of this area.

The selected remedy also provides for the monitoring of groundwater quality in the Peters Mine Pit Area until long-term groundwater monitoring is addressed pursuant to the groundwater remedy for the OU3 ROD. For costing purposes, quarterly groundwater monitoring for a period of five years is assumed as a component of the selected remedy. However, as the program is implemented, EPA anticipates that the sampling frequency or number of wells sampled will be revised based on review of the groundwater analytical data.

The environmental benefits of the selected remedy may be enhanced by consideration of technologies and practices during the design of the remedy that are sustainable in accordance with EPA Region 2's Clean and Green policy. This will include consideration of green remediation technologies and practices.

Summary of the Rationale for the Selected Remedy

The selection of a remedy for a Superfund site is accomplished through evaluation of each of the developed remedial alternatives against the above-referenced nine criteria, as specified in the NCP. Based upon an evaluation of the results of Site investigations, input from the NRRB, the detailed analysis of the various remedial alternatives, and public comments, EPA has determined that Alternative 6A satisfies the requirements of CERCLA Section 121, 42 U.S.C. §9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the nine evaluation criteria, set forth in 40 CFR §300.430(e)(9). The selected remedy is expected to be protective of human health and the environment, once implemented, and will comply with ARARs. Potential risks will be addressed through the removal of an estimated 22,700 tons of impacted fill, and the installation of a thick permeable soil cap over the remaining fill material. It is likely that the contaminated fill contains some paint sludge. While Alternatives 3, 4A, 4B and 4C would also be protective of human health and the environment and be less costly than Alternative 6A, the selected remedy would provide an extra degree of protection by permanently removing from the Site shallow fill materials and wastes that would present the greatest potential for exposure to human and ecological receptors. The removal of this fill material will also result in Alternative 6A providing for a greater reduction in the volume of contaminated fill at the Peters Mine Pit than Alternatives 3, 4A, 4B and 4C, which would provide no reduction in the volume of contaminants. Given that most of the Peters Mine Pit Area is in the Ringwood State Park, removal of shallow fill under Alternative 6A will allow for the installation of a very thick soil cap, thereby allowing for the establishment of trees and allow this area to return to a state similar to that of the surrounding area of the Ringwood State Park. Therefore, implementation of Alternative 6A will allow for the recreational use of the Peters Mine Pit Area by Ringwood State Park visitors. The installation of this soil cap will also greatly reduce the likelihood of exposure

to contaminated fill remaining in the Peters Mine Pit Area.

EPA has determined that Alternative 6A is preferable to Alternative 5 due to concerns regarding the implementability of Alternative 5. The heterogeneous nature of the fill material within the Peters Mine Pit, which may include concrete structures and metal debris, may impede effective stabilization of the impacted fill material. Furthermore, treatability testing would need to be conducted to determine whether the admixture could effectively stabilize organic constituents in the fill. The stabilization of the fill, followed by installation of a limited soil cap could also limit the reuse of this area by Ringwood State Park visitors. It should also be noted that Alternative 6A can be implemented in a more cost-effective manner than Alternative 5.

While Alternative 6A is readily implementable, implementation of Alternative 6B would be challenging as it would require specialized equipment and more extensive excavation work to install a barrier wall into the bedrock. The installation of an impermeable liner as part of Alternative 6B would also limit the vegetation that could be established on the cap, as deep tree roots could puncture the liner. Therefore, this area would not be restored to a state similar to that of the surrounding area of the Ringwood State Park, which could limit the use of this area by Ringwood State Park visitors.

While Alternative 7 would provide for a greater reduction in the volume of contaminated fill than Alternative 6A, it would also have the greatest impacts on workers and the community during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with Alternative 7 would present the greatest potential for community and worker exposure to contaminated material. It is estimated that 28,700 truck trips through the Ringwood community would be required to transport all of the excavated material off site as part of Alternative 7, with a commensurate number of truck trips to deliver clean fill. In addition, the depth of excavation required to remove all of the fill from the Peters Mine Pit would require specialized equipment, and would make Alternative 7 substantially more difficult to implement than Alternative 6A. It should also be noted that Alternative 6A can be implemented in a more cost-effective manner than Alternative 7.

Alternative 1 was not selected as it is not protective of human health and the environment. In addition, while Alternative 2 would provide some protection through implementation of institutional and engineering controls, the potential for exposure to impacted fill materials would remain.

Summary of the Estimated Cost of the Selected Remedy

The estimated capital, O&M and present worth costs for the selected remedy are detailed in the FS Report for the Peters Mine Pit Area. The cost estimates, which are based upon estimates developed for similar projects, engineering judgment and construction bids, are order of magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost for implementation of the remedy. The estimated capital, O&M and total present worth costs, as well as construction time are detailed below and in Appendix II, Table 5a:

Total Capital Cost: $9,456,600

Present Worth of O&M Cost:	$1,463,600
Total Present Worth Cost:	$10,920,200
Construction Duration:	8-9 months

Expected Outcomes of the Selected Remedy

The selected remedy, Alternative 6A, addresses the potential for exposure to contaminated fill material located in the Peters Mine Pit Area of the Site. Potential risks to humans and ecological receptors due to direct contact and ingestion of contaminants in the fill material will be mitigated through the installation of a thick permeable soil cap over this area of the Site. The risk of exposure to these materials will be further reduced through the removal of contaminated fill material located above the water table, which presents the greatest risk of exposure to humans and ecological receptors. The installation of a soil cap will also result in positive drainage away from the Peters Mine Pit, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater. Therefore, EPA expects that the selected remedy for the Peters Mine Pit Area will be consistent with any remedy selected for OU3 (groundwater) of the Site.

The Peters Mine Pit Area is currently located in the Ringwood State Park, which is used for recreational purposes. The installation of a thick soil cap over the Peters Mine Pit will allow for this area to be restored with vegetation, including trees, that is naturally present in the Ringwood State Park. Restoration of the Peters Mine Pit Area in this manner will allow this area to return to a state similar to that of the surrounding areas of the Ringwood State Park, and allow for recreational use of this area. Institutional controls, such as Deed Notices, will be implemented in the Peters Mine Pit Area to prevent uses other than for conservation land/recreational activities.

Long-term monitoring and maintenance of the permeable cap will be conducted to ensure the integrity of the cap and the protectiveness of this remedy. Any identified deficiencies in the cap will be addressed in an expeditious fashion per the requirements of an O&M plan, to be developed to ensure the continued protectiveness of the selected remedy.

Cannon Mine Pit Area

Based upon an evaluation of the results of Site investigations, input from the NRRB, the detailed analysis of the various remedial alternatives, and public comments, EPA has selected Alternative 3A (Permeable Engineered Cap of Cannon Mine Pit Area) as the remedy for the Cannon Mine Pit Area of the Site. This alternative includes the following components:

- Consolidation of shallow fill materials located around the Cannon Mine Pit into the pit;
- Placement and compaction of clean fill material in the Cannon Mine Pit, as necessary to raise the grade to promote drainage away from the pit;
- Excavation and off-site disposal of any drums of waste that may be encountered during consolidation and grading of fill material;

- Installation of a permeable engineered soil cap, consisting of a geotextile fabric and a minimum of 18 inches of clean soil and six inches of topsoil, over the Cannon Mine Pit;

- Restoration of the Cannon Mine Pit Area with vegetation in order to stabilize the surface of the soil cap;

- Implementation of engineering controls, such as the installation of fencing and the placement of boulders, to restrict access to the capped area;

- Implementation of institutional controls, such as deed notices, to protect the integrity of the permeable cap;

- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and

- Monitoring of groundwater quality in the Canon Mine Pit Area until a groundwater remedy is selected for the Site.

As part of the selected remedy, shallow fill materials, which are present to an approximate depth of five feet (estimated to be less than 1,900 cubic yards) around the Cannon Mine Pit will be removed and placed within the pit. The fill material contained within the pit will then be compacted using construction equipment. Soil testing, such as geotechnical, agronomic, chemical and compaction testing, will be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. Furthermore, the need for a passive gas management system would be evaluated during design of this remedy.

Due to the discovery of drums of waste within the pit during performance of the RI, the possibility exists that additional drums of waste will be encountered during preparation of the pit for installation of the permeable cap. Any drums of waste encountered during implementation of the selected remedy would be excavated, characterized and disposed of off Site at an appropriately permitted disposal facility.

The selected remedy also provides for the performance of groundwater monitoring in the Cannon Mine Pit Area to ensure that the fill materials continue to have a minimal impact on groundwater quality until long-term groundwater monitoring is addressed pursuant to the OU3 ROD. For costing purposes, it is assumed that annual groundwater monitoring will be performed for a period of five years. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

The environmental benefits of the selected remedy may be enhanced by consideration of technologies and practices during the design of the remedy that are sustainable in accordance with EPA Region 2's Clean and Green policy. This will include consideration of green remediation technologies and practices.

Summary of the Rationale for the Selected Remedy

Based upon an evaluation of the results of Site investigations, input from the NRRB, the detailed analysis of the various remedial alternatives, and public comments, EPA has determined that Alternative 3A satisfies the requirements of CERCLA Section 121, 42 U.S.C. §9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the nine evaluation criteria, set forth in 40 CFR §300.430(e)(9). The selected remedy is expected to be protective of human health and the environment, once implemented, and will comply with ARARs. Potential risks will be addressed through the installation of a permeable soil cap over the fill material in the Cannon Mine Pit Area of the Site.

While Alternatives 3A and 6 both provide for the installation of a permeable cover over the Cannon Mine Pit Area and are expected to provide the same degree of protection, Alternative 6 is anticipated to have greater impact on the community during the construction of the remedy, due to the need to transport mine tailings from the OCDA to the Cannon Mine Pit. EPA also believes that Alternatives 3A and 3B would provide for a similar degree of protection, as both would provide for the installation of a cover which would minimize the potential for contact with the fill material. However, Alternative 3A can provide as much protection to human and ecological receptors as Alternatives 3B and 6, but in a more cost-effective manner.

EPA has determined that Alternative 3A is preferable to Alternative 4 due to concerns regarding the implementability and short-term impacts of Alternative 4. The heterogeneous nature of the fill material within the Cannon Mine Pit, which may include concrete and metal debris, may impede effective stabilization of the impacted fill material. Furthermore, treatability testing would need to be conducted to determine whether the admixture could effectively stabilize organic constituents in the fill. In addition, the potential would exist for workers or the community to be exposed to contaminants during implementation of Alternative 4, due to the need to mix stabilizing agents into the fill and the potential for dust generation.

While Alternative 5 would provide for a reduction in the volume of contaminated fill, it would also have the greatest impacts on workers and the community during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with Alternative 5 would present the greatest potential for community and worker exposure to contaminated material. However, unlike the fill in the Peters Mine Pit and O'Connor Disposal Areas, paint sludge was not detected in fill in the Cannon Mine Pit Area during performance of the RI. It is estimated that more than 7,800 truck trips through the Ringwood community would be required to transport all of the impacted fill off site as part of Alternative 5. It should also be noted that Alternative 3A can be implemented in a more cost-effective manner than Alternative 5. Therefore, EPA has determined that Alternative 3A is preferable to Alternative 5.

Alternative 1 was not selected as it is not protective of human health and the environment. In addition, while Alternative 2 would provide some protection through implementation of institutional and engineering controls, the potential for exposure to impacted fill materials would remain.

Summary of the Estimated Cost of the Selected Remedy

The estimated capital, O&M and present worth costs for the selected remedy are detailed in the

FS Report for the Cannon Mine Pit Area. The cost estimates, which are based upon estimates developed for similar projects, engineering judgment and construction bids, are order of magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost for implementation of the remedy. The estimated capital, O&M and total present worth costs, as well as construction time are detailed below:

Total Capital Cost	$974,600
Present Worth of O&M Costs	$374,900
Total Present Net Worth	$1,349,500
Construction Duration	5-6 months

Expected Outcomes of the Selected Remedy

The selected remedy, Alternative 3A, addresses the potential for exposure to contaminated fill material located in the Cannon Mine Pit Area of the Site. Potential risks to humans and ecological receptors due to direct contact and ingestion of contaminants in the fill material will be mitigated through consolidation of fill into the Cannon Mine Pit and installation of a permeable soil cap over this area of the Site. The installation of a soil cap will also result in positive drainage away from the Cannon Mine Pit, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater. Therefore, EPA expects that the selected remedy will be consistent with any remedy selected for OU3 (groundwater) of the Site. The installation of a soil cap over the impacted fill also minimizes the potential for runoff of contaminated fill to the Mine Brook.

The Cannon Mine Pit Area is currently undeveloped but portions of this area are zoned for residential or industrial use. Therefore, institutional controls, such as Deed Notices, will be implemented in the Cannon Mine Pit Area as part of the selected remedy to prevent future uses that could impact the integrity of the cap. Engineering controls, such as installation of a fence, will also be implemented to help protect the cap from damage.

Long-term monitoring and maintenance of the permeable cap will be conducted to ensure the integrity of the cap and the protectiveness of this remedy. Any identified deficiencies in the cap will be addressed in an expeditious fashion per the requirements of an O&M plan, to be developed to ensure the continued protectiveness of the selected remedy.

O'Connor Disposal Area

Based upon an evaluation of the results of Site investigations, input from the NRRB, the detailed analysis of the various remedial alternatives, and public comments, EPA has selected Alternative 5A (Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings) as the remedy for the OCDA of the Site. This alternative includes the following components:

- Excavation of all soil/fill material in the OCDA down to the top of the underlying mine tailings with disposal and/or recycling of all of the excavated material at off-site permitted disposal facilities. Debris-free and non-hazardous mine tailings underlying the

fill material may be used as fill material for the Peters Mine Pit;

- Placement of at least six inches of topsoil throughout the excavated area to enable revegetation of the OCDA;

- Restoration of any wetlands in the OCDA that are disturbed during implementation of the remedy, in coordination with the NJDEP's Land Use Program;

- Monitoring of groundwater quality in the OCDA until a groundwater remedy is selected for the Site.

The selected remedy will provide for the excavation and off-site disposal of approximately 71,000 cubic yards of fill material from the OCDA. In addition, a portion of the approximately 112,700 cubic yards of debris-free mine tailings located below this fill material could be excavated from the OCDA and used as fill in the Peters Mine Pit Area. Undisturbed mine tailings at the base of this area which are not used as fill for the Peters Mine Pit would remain in place. Due to the depth to groundwater in the OCDA and the area's proximity to the Park Brook, dewatering of groundwater and/or diversion of a portion of the Park Brook may be required to remove fill in portions of this area.

Following the excavation and disposition of fill and tailings, six inches of topsoil would be placed throughout the excavated area to enable revegetation of the OCDA. Restoration activities would focus on restoring the OCDA to a pre-disposal condition. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the OCDA. The restoration of these wetlands will be coordinated with NJDEP's Land Use Program.

In addition, the selected remedy also provides for groundwater monitoring in the OCDA until long-term groundwater monitoring is addressed pursuant to the OU 3 ROD. For costing purposes, it is assumed that annual groundwater monitoring of a subset of existing wells surrounding the OCDA will be performed for a period of five years. However, as the program is implemented the sampling frequency or number of wells sampled could be revised based on review of the groundwater analytical data.

The environmental benefits of the selected remedy may be enhanced by consideration of technologies and practices during the design of the remedy that are sustainable in accordance with EPA Region 2's Clean and Green policy. This will include consideration of green remediation technologies and practices.

Summary of the Rationale for the Selected Remedy

Based upon an evaluation of the results of Site investigations, input from the NRRB, the detailed analysis of the various remedial alternatives, and public comments, EPA has determined that Alternative 5A satisfies the requirements of CERCLA Section 121, 42 U.S.C. §9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the nine evaluation criteria, set forth in 40 CFR §300.430(e)(9). The selected remedy is expected to be

protective of human health and the environment, once implemented, and will comply with ARARs. Potential risks will be addressed through the excavation and off-site disposal and/or recycling of all of the impacted fill material at appropriately permitted facilities.

While EPA believes that Alternatives 3, 4A and 4B, which provide for the installation of an engineered cap over the OCDA, can be implemented in a manner that would provide for the protection of human health and the environment, EPA anticipates that extensive maintenance activities would be required to ensure that these alternatives remain protective. While access to the OCDA would be restricted under all of these alternatives through the use of engineering controls, such as a fence, EPA believes and past evidence indicates, that it is highly likely that unauthorized access to this area would continue to occur. All-terrain vehicles (ATVs) are routinely used in the surrounding area, and fencing currently installed at the Site has not proven effective in restricting ATV traffic from investigation areas. Therefore, EPA believes that the likely use of ATVs across the capped area would harm the cap, requiring repeated maintenance efforts in perpetuity.

EPA also notes that in the years since disposal of wastes on this portion of the Site ended, this area has become wooded. Until sampling activities were recently carried out in furtherance of the RI, this portion of the Site looked much like, and was used by the local community in the same manner as, the immediately adjacent Ringwood State Park. Members of the local community have long been accustomed to enter this area and have used it for recreation and, among other purposes, for game hunting and gathering plants that have cultural and traditional significance and nutritional value. Alternatives 3, 4A and 4B would allow wastes to remain on this portion of the Site, and include engineering and institutional controls which would thus inhibit or restrict use by the local community for these culturally and traditionally significant activities.

Alternative 1 was not selected as it simply serves as a baseline for comparison with other alternatives and is not protective of human health and the environment. No action would be taken under this alternative to restrict exposure to contaminated fill in the OCDA. In addition, while Alternative 2 may provide some protection through implementation of institutional and engineering controls, the potential for exposure to impacted fill materials would remain.

Therefore, EPA has selected Alternative 5A as the remedy for the OCDA because it is expected to achieve substantial and long-term risk reduction through the permanent removal of contaminated fill from the Site, and will not require extensive maintenance activities to remain protective. Furthermore, unlike most of the other alternatives evaluated, this alternative would allow the portion of the Site that is most readily accessible to the residents to be used without restriction. Removal of the contaminated fill will allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be present if a cap or cover were selected.

Summary of the Estimated Cost of the Selected Remedy

The estimated capital, O&M and present worth costs for the selected remedy are detailed in the FS Report for the OCDA. The cost estimates, which are based upon estimates developed for

similar projects, engineering judgment and construction bids, are order of magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost for implementation of the remedy. The estimated capital, O&M and total present worth costs, as well as construction time are detailed below:

Total Capital Cost	$32,437,200
Present Worth of O&M Costs	$168,700
Total Present Net Worth	$32,605,900
Construction Duration	23-24 months

Expected Outcomes of the Selected Remedy

The selected remedy, Alternative 5A, addresses the potential for exposure to contaminated fill material located in the OCDA of the Site. Potential risks to humans and ecological receptors due to direct contact and ingestion of contaminants in the fill material will be eliminated through the excavation and off-site disposal and/or recycling of all of the contaminated fill in the OCDA. The removal of all contaminated fill material will also remove all contaminants which could potentially leach to groundwater. Therefore, EPA expects that the selected remedy will be consistent with any remedy selected for OU3 (groundwater) of the Site. The removal of the fill material also eliminates the potential for runoff of contaminated fill to the Park Brook.

EPA anticipates that implementation of the selected remedy will allow the OCDA to be restored to pre-disposal conditions. Therefore, the portion of the Site that is most readily accessible to the residents will be accessible for use without restriction. Removal of the contaminated fill will allow the community to continue to hunt game and gather plants in this area of the Site according to their cultural and traditional practices.

Contingency Remedy

The Borough of Ringwood, which owns the land which comprises the OCDA, has informed EPA that it wishes to construct a new Borough recycling center in the OCDA and that it has taken steps towards achieving that goal. The Borough has indicated that Alternative 4A, Site Grading and Permeable Engineered Cap, would be the alternative that is most compatible with this intended use. The Borough has also noted that the capping called for in Alternative 4A would create a level area near the center of the OCDA, facilitating construction of the proposed recycling facility. The Borough has indicated that the new recycling facility would replace the existing recycling facility and that the existing recycling facility property would be converted to greenspace for use by the surrounding community.

If a portion of the OCDA were to be reused as the Borough's recycling center, many of EPA's concerns that inform selection of Alternative 5A would be addressed with respect to that reused portion. Among the primary reasons for EPA's selection of Alternative 5A are concerns regarding the potential for unauthorized access to the area and associated damage to the cap which may result if a containment alternative was selected. However, under the Borough's recent proposal, the portion of the OCDA that would be used for the recycling facility would be capped with asphalt, which would mitigate concerns regarding damage to the cap. Furthermore,

the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property. The Borough has communicated its view that the existing recycling facility property would be a better greenspace asset than the sloped property that would remain at the OCDA if Alternative 5A were to be implemented.

Consideration of the future use of a site is an integral component of the remedy selection process. While it is not EPA's role to specify how a municipality or other property owner may reuse a remediated site, EPA endeavors to work with communities and property owners to ensure that implemented remedies do not create barriers for safe, viable reuse of site properties. If the property is reused as proposed by the Borough, EPA believes that, with respect to the portion of the OCDA on which the recycling facility would be located, Alternative 4A would best satisfy the nine evaluation criteria and EPA's objective to advance environmental protection while facilitating reuse of sites as valuable community assets. Therefore, EPA has concluded that Alternative 4A should be the contingency remedy for the OCDA. If actions taken by the Borough allow for implementation of the contingency remedy, EPA will appropriately document the change from the selected remedy to the contingency remedy. EPA will select the contingency remedy, Alternative 4A, if the following occurs:

(A) The Borough provides EPA with the following within six months of the date of this ROD: (1) detailed engineering plans for the new recycling center; (2) financial assurance(s) indicating that sufficient funds will be available for construction of the recycling center; and (3) assurances and supporting documentation indicating that the construction of the contingency remedy, including the recycling center, can and will be completed within either a shorter or, at least within a comparable timeframe than it would take to implement the selected remedy, described above; and

(B) EPA determines that the information and assurance(s) that the Borough has submitted to EPA, as described above, are sufficient to allow the contingency remedy to be implemented.

The contingency remedy, Alternative 4A, includes the following components:

- Consolidation of fill from the fringe areas of the OCDA to the center of this area to provide level land which would permit reuse of this area;

- Installation of a minimum two-foot thick engineered permeable soil cap over the consolidated fill materials, which will consist of a geotextile fabric, 18 inches of clean soil and six inches of top soil;

- Placement of six inches of clean fill in excavated areas beyond the engineered cap where soil/fill was removed for consolidation under the cap to ensure proper drainage and a suitable substrate for planting;

- Revegetation of the engineered soil cap and the surrounding fill areas;

- Restoration of wetlands in the OCDA which were disturbed during implementation of the selected remedy, in coordination with the NJDEP's Land Use Program;

- Implementation of engineering controls, such as the installation of fencing and the placement of boulders, to restrict access to the capped area;

- Implementation of institutional control(s), such as deed notice(s), to maintain the integrity of the cap;

- Long-term monitoring and maintenance of the capped area to ensure the integrity of the permeable cap; and

- Monitoring of groundwater quality in the OCDA until a groundwater remedy is selected for the Site.

Under this alternative, fill from the fringe areas of the OCDA would be consolidated to the center of this area to minimize the size of the required cap and to permit the reuse of this area. After consolidation, the fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The excavated areas beyond the engineered cap where soil/fill would be removed for consolidation under the cap would be backfilled with six inches of clean fill and rough graded to ensure proper drainage prior to revegetation. EPA anticipates that the cleaned up fringe areas would encompass approximately four acres, which would be restored to pre-disposal conditions. The capped area would encompass approximately seven acres of the OCDA. Any materials encountered in the fill that is not suitable for use as sub-grade material under the cap would be segregated and transported for off-site disposal. Furthermore, the need for a passive gas management system would be evaluated during design of this remedy.

In addition, the contingency remedy also provides for groundwater monitoring in the OCDA until long-term groundwater monitoring is addressed pursuant to the OU3 ROD. For costing purposes, it is assumed that annual groundwater monitoring of a subset of existing wells surrounding the OCDA will be performed for a period of five years. However, as the program is implemented the sampling frequency or number of wells sampled could be revised based on review of the groundwater analytical data. The installation of a soil cap and the asphalt/concrete surface associated with the recycling center will result in positive drainage away from the OCDA, which is expected to reduce the amount of precipitation that percolates through the fill material, thereby reducing the potential for contaminants to leach from the fill to groundwater. Therefore, EPA expects that the contingency remedy will be consistent with any remedy selected for OU3 (groundwater) of the Site. The installation of a cap over the impacted fill also minimizes the potential for runoff of contaminated fill to the Park Brook.

STATUTORY DETERMINATIONS

As was previously noted, CERCLA § 121(b)(1) mandates that a remedial action must be protective of human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA § 121(d) further specifies

that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA § 121(d)(4).

Protection of Human Health and the Environment

The selected remedy for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas will be protective of human health and the environment, once implemented. The selected remedy for the Peters Mine Pit Area, Alternative 6A, will prevent direct contact and ingestion risks to humans and ecological receptors associated with contaminated fill by containing this fill material under a permeable soil cap. The thick soil cap will also prevent the possible uptake of contaminants by plants. Further risk reduction will be realized through the excavation and off-site disposal and/or recycling of contaminated fill located above the water table, that humans and ecological receptors have the greatest chance of being exposed to.

The selected remedy for the Cannon Mine Pit Area, Alternative 3A, will prevent direct contact and ingestion risks to humans and ecological receptors associated with contaminated fill by containing this fill material under a permeable soil cap. In addition, institutional and engineering controls, such as a Deed Notice and installation of a fence, will be implemented to help ensure the integrity of the cap so that the remedy remains protective in the future.

The selected remedy for the OCDA, Alternative 5A, will prevent human and ecological receptor exposure to the contaminated fill material by permanently removing the fill material to an appropriately permitted off-site disposal/recycling facility. The extensive excavation and off-site transportation of fill material associated with this remedy has the potential for significant impacts on the community and workers during implementation of the remedy. However, the impacts associated with these activities will be mitigated through the development and implementation of transportation control plans, air monitoring and dust mitigation control plans.

The selected remedies for the Peters Mine Pit Area, Cannon Mine Pit Area and the OCDA will reduce the potential for human exposure to Site-related lead by either removing contaminated fill material from the Site or by containing this fill material under an engineered cap. These remedies are also expected to mitigate the exposure of biota to contaminated fill material and any associated uptake of Site-related lead.

Compliance with ARARs

Section 121 (d) of CERCLA and NCP § 300.430(f) (1) (ii) (B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d) (4). Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting

laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site.

The selected remedies for the Peters Mine Pit and Cannon Mine Pit Areas will comply with New Jersey's Residential Direct Contact Soil Remediation Standards (RDCSRSs) by containing fill materials which exceed these standards under an engineered cap. Furthermore, the selected remedy for the OCDA will comply with New Jersey's RDCSRSs through the permanent removal and off-site disposal of fill material that exceeds these standards. EPA expects that these remedies, once implemented, will comply with all ARARs. A complete list of the ARARs, and TBCs associated with the selected remedies are presented in Tables 2, 3 and 4.

Cost Effectiveness

EPA has determined that the Selected Remedies for the Peters Mine Pit (PMP), Cannon Mine Pit and OCDA are cost-effective and represent reasonable values for the money to be spent. In making this determination, the following definition was used: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (40 CFR §300.430(f)(1)(ii)(D)). EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, or volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness of a remedy. The relationship of the overall effectiveness of the selected remedy for each of these areas was determined to be proportional to costs and hence, these alternatives represent a reasonable value for the money to be spent.

The estimated present worth cost of the remedy for the Peters Mine Pit Area is $10,920,200. While other alternatives would contain the contaminated fill material for less cost, the selected remedy will permanently remove from the Site those fill materials which present the greatest risk of exposure to human and ecological receptors. The Selected Remedy is cost-effective as it has been determined to provide the greatest overall protectiveness for its present-worth cost.

Alternatives 3, 4A, 4B and 4C employ engineered caps which are not as effectual in providing long-term effectiveness and permanence as the Selected Remedy because contamination will remain relatively close to the surface under a cap, subject to failure, breach or damage from the elements. Although these capping remedies would provide a level of protection of human health and the environment, the containment of the contamination comes with the need for close and continued management in perpetuity to ensure the cap's integrity. The Selected Remedy provides a higher level of long-term effectiveness and permanence than the other containment alternatives. Removal of contaminated soil and fill from the area surrounding the PMP and replacement with clean fill, ensures a thick layer of clean soil which will support indigenous growth with virtually no risk to recreational users of exposure to contaminants that may exist in the depths of the PMP. EPA believes that the Selected Remedy's additional cost for removal of fill material and any identified paint sludge or drums from the fill area surrounding the Peters

Mine Pit provides protection of human health and the environment and is cost-effective. The additional cost of the Selected Remedy is outweighed by the higher degree of long term effectiveness and permanence it provides over the other alternatives, thereby satisfying the cost effectiveness criteria of Section 121 of CERCLA.

Alternative 5 would permanently stabilize the contaminated fill material, which would serve to minimize the potential for exposure to contaminants. In addition, stabilization of the fill material would also reduce or eliminate the mobility of contaminants in the fill. Alternative 7 would permanently remove all of the contaminated fill material from the Peters Mine Pit Area of the Site. Therefore, Alternatives 5 and 7 are the most effective at achieving long-term effectiveness and permanence at the Site. However, the benefits derived from these two alternatives do not outweigh the substantial additional costs of implementing those remedies over the benefits obtained from the Selected Remedy for PMP.

The estimated present worth cost of the remedy for the Cannon Mine Pit Area is $1,349,500. EPA believes that the selected remedy, Alternative 3A, will provide a similar degree of protection as more costly alternatives, with less short term impacts on the community and workers.

The selected remedy for the OCDA has an estimated present worth cost of $32,605,900. While it is true that less expensive containment alternatives can be implemented in a protective manner, EPA is convinced that the recreational and other uses (both authorized and unauthorized) of the vicinity, make impractical the continued protectiveness of these capping remedies. In the absence of a regular and continued presence on the Site, extensive operation and maintenance (O&M) activities, due to unauthorized ATV traffic, would need to be implemented in perpetuity in order to ensure that these containment alternatives remain protective. Improper O&M would result in failure of protectiveness of a capping remedy. The impacts of O&M to protectiveness at this Site are even more significant since the OCDA is located adjacent to the roadway and easily accessible from nearby residential neighborhoods. OCDA has, in the past, been frequented by hunters, gatherers and ATV recreational riders and EPA has no expectations that future use of the OCDA would change if the area was capped and left without a significant presence on-Site. Containment may be considered suitable in other areas of the Ringwood Mines Superfund Site but at this area of the Site, where risks of failure in protectiveness are very high due to the continued use of the OCDA, such a remedy is not recommended.

Although engineering measures may somewhat limit entry onto the capped area of the OCDA, they cannot completely eliminate the significant risks to protectiveness associated with failures caused by the detrimental impact of recreational use. However, if the Borough of Ringwood were to utilize the OCDA for its recycling facility, the area would be capped with asphalt, which would mitigate concerns regarding damage to a cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property.

The additional cost of the Selected Remedy for the OCDA is outweighed by the higher degree of long term effectiveness and permanence it provides over the other alternatives, thereby satisfying the cost effectiveness criteria of Section 121 of CERCLA.

Utilization of Permanent Solutions and Alternative Treatment Technologies

EPA has determined that the selected remedy utilizes permanent solutions and treatment technologies to the maximum extent that is practicable. The selected remedy for the Peters Mine Pit Area will permanently remove from the Site contaminated fill material located above the water table, as well as any paint sludge or drums of waste which may be discovered during remedy implementation. Furthermore, the selected remedy for the OCDA will permanently remove from the Site all contaminated fill material contained in this area. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA has determined that the selected remedy for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas provides the best balance of tradeoffs in terms of the balancing criteria, while also considering state and community acceptance.

Preference for Treatment as a Principal Element

The statutory preference for the use of remedies that involve treatment as a principal element is not satisfied by the selected remedy. In-situ stabilization of the contaminated fill material in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas is the only treatment technology determined to be potentially viable for treatment of the fill. However, EPA has determined that implementation of this technology is not practicable, due to the depth of disposal and the heterogeneous nature of the fill.

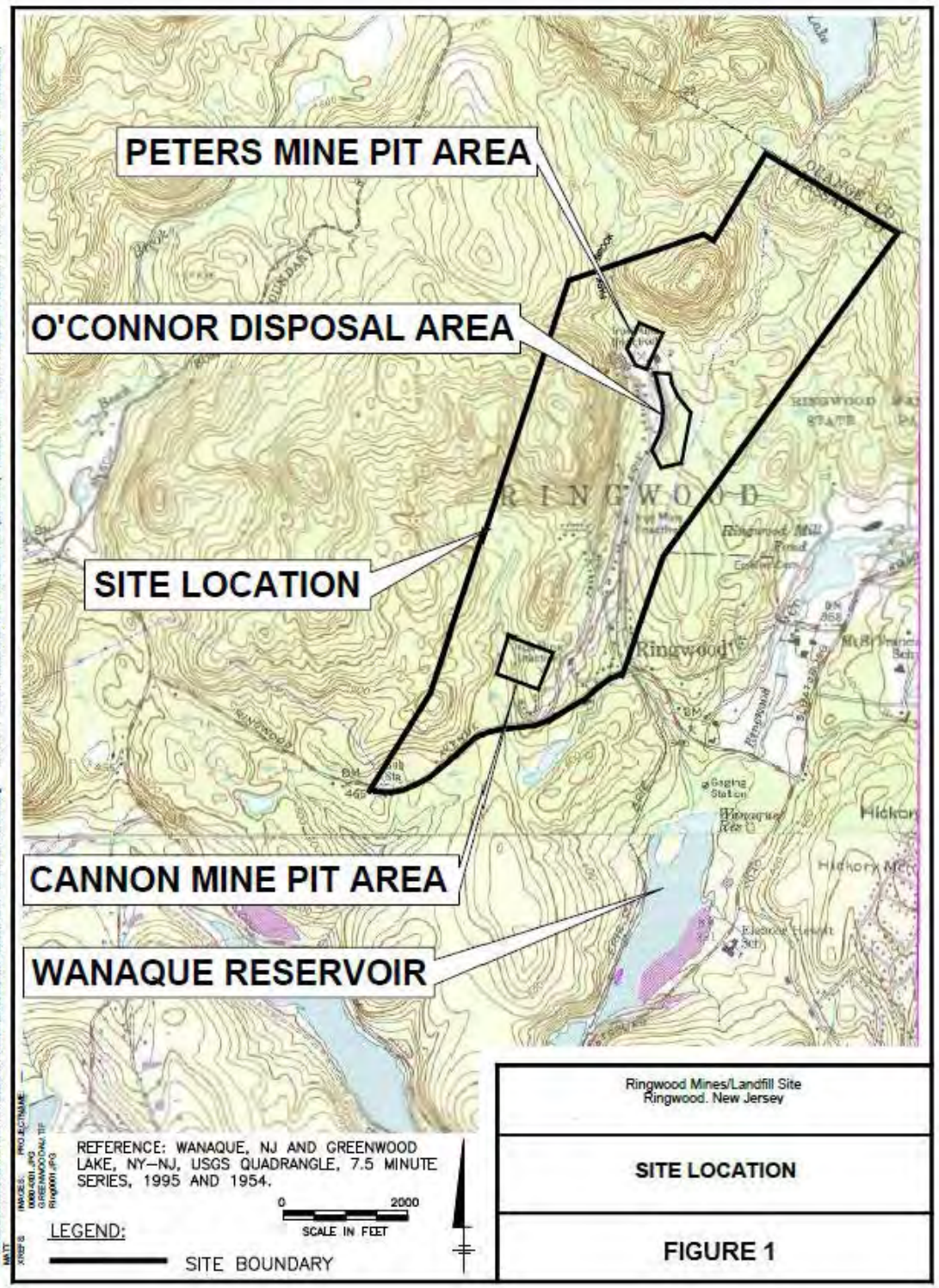
Five-Year Review Requirements

Because the selected remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

DOCUMENTATION OF SIGNIFICANT CHANGES

Upon review of all comments submitted, EPA has determined that no significant changes to the selected remedy, as presented in the Proposed Plan, are warranted.

APPENDIX I - Figures


PETERS MINE PIT AREA
O'CONNOR DISPOSAL AREA
SITE LOCATION
CANNON MINE PIT AREA
WANAQUE RESERVOIR
RINGWOOD
Ringwood
REFERENCE: WANAQUE, NJ AND GREENWOOD LAKE, NY–NJ, USGS QUADRANGLE, 7.5 MINUTE SERIES, 1995 AND 1954.
0
2000
SCALE IN FEET
LEGEND:
SITE BOUNDARY
Ringwood Mines/Landfill Site
Ringwood. New Jersey
SITE LOCATION
FIGURE 1

R2-0007936

FIGURE 2

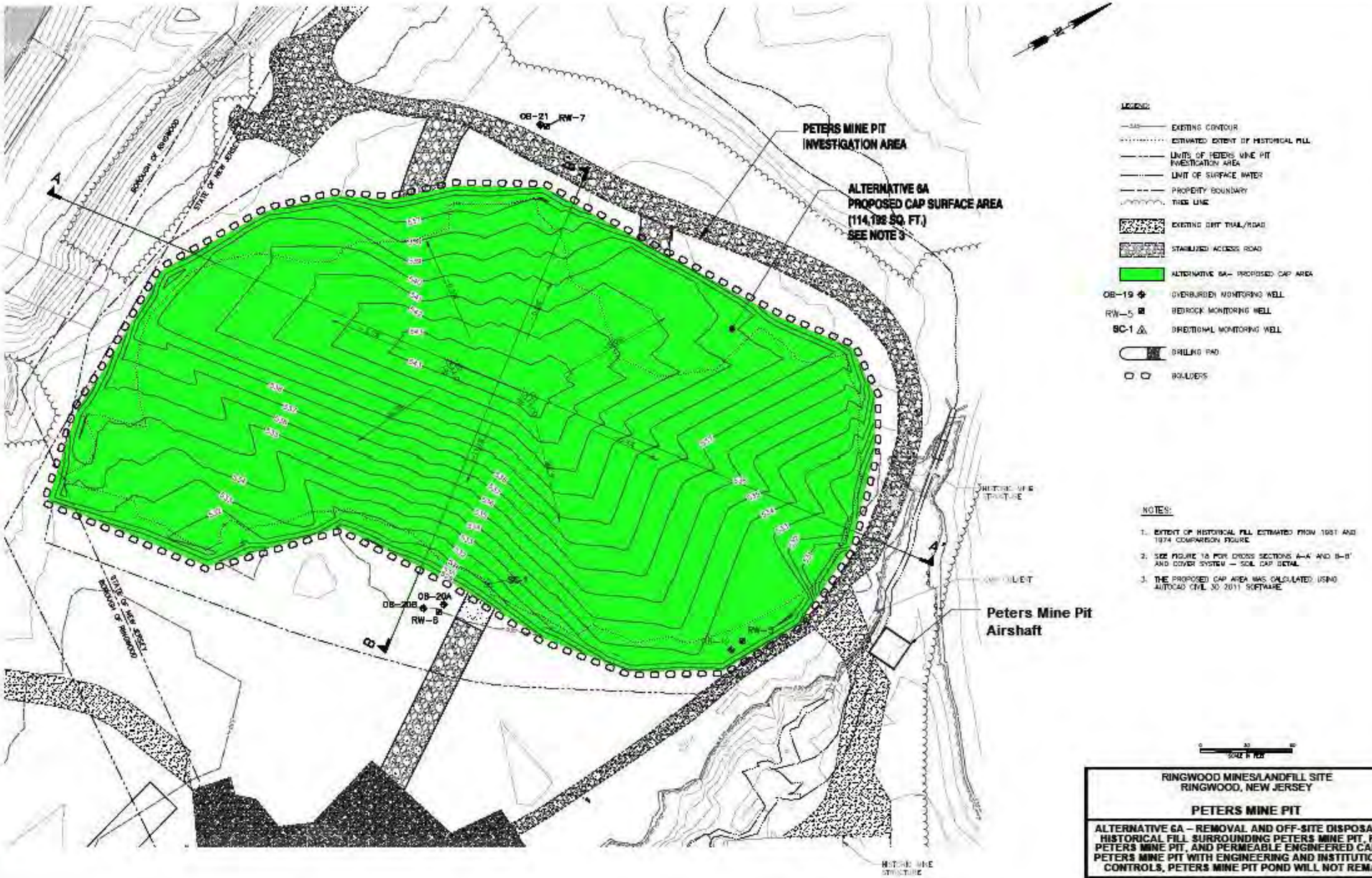
R2-0007937

FIGURE 3

R2-0007938

FIGURE 4

R2-0007939

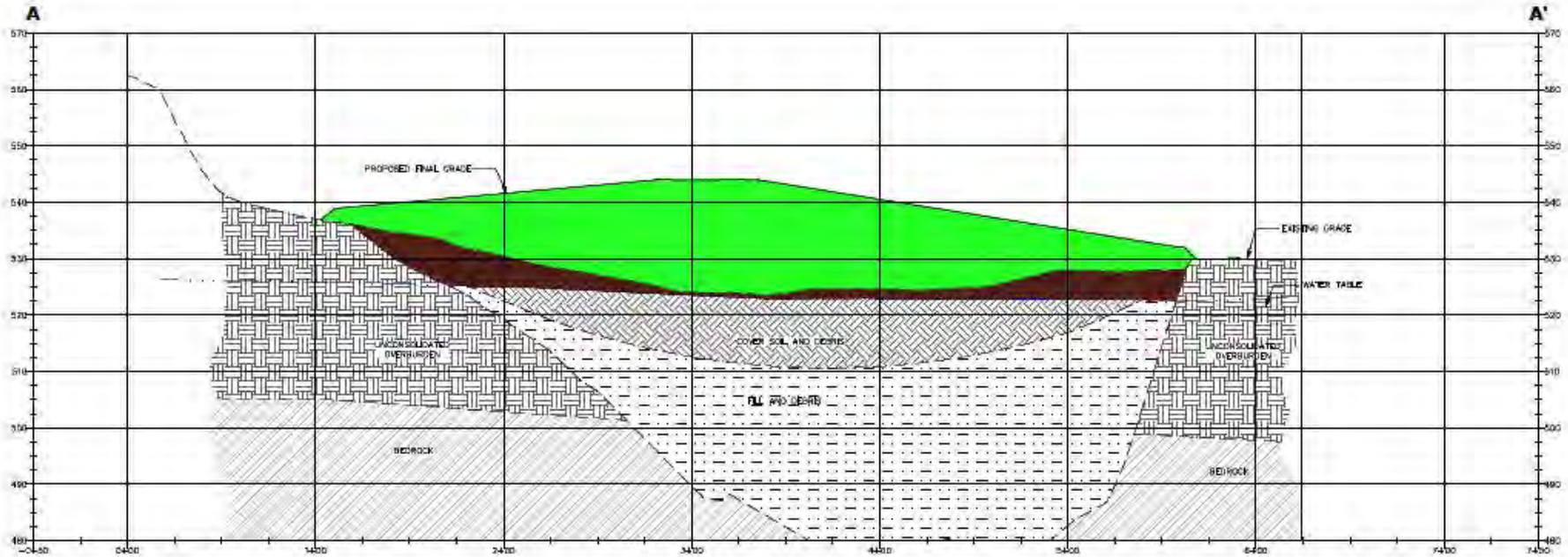


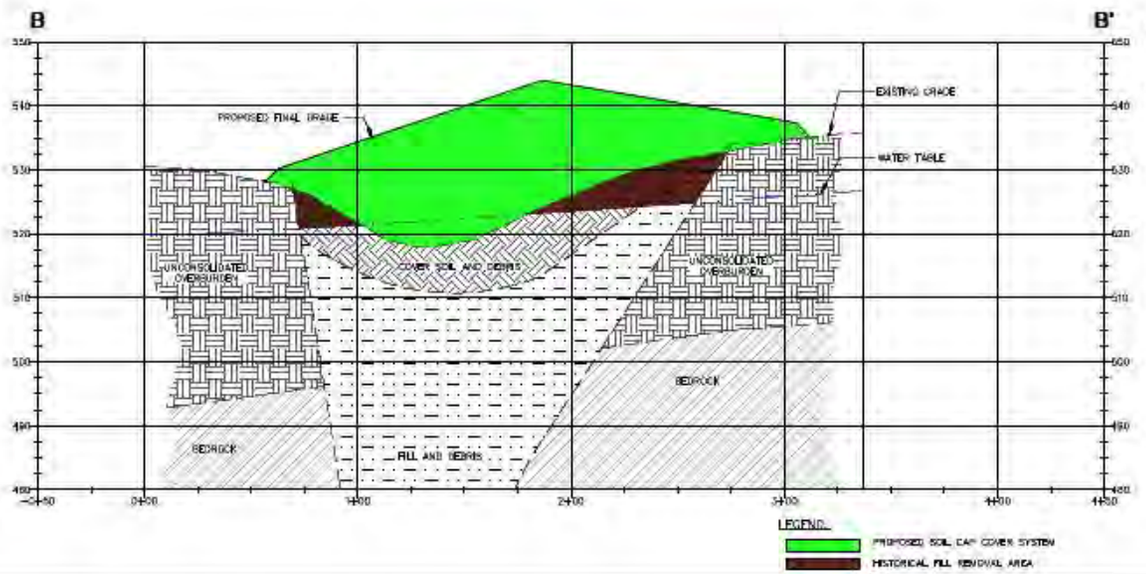
RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

PETERS MINE PIT

ALTERNATIVE 6A – REMOVAL AND OFF-SITE DISPOSAL OF HISTORICAL FILL SURROUNDING PETERS MINE PIT, FILL PETERS MINE PIT, AND PERMEABLE ENGINEERED CAP OF PETERS MINE PIT WITH ENGINEERING AND INSTITUTIONAL CONTROLS, PETERS MINE PIT POND WILL NOT REMAIN

FIGURE 5

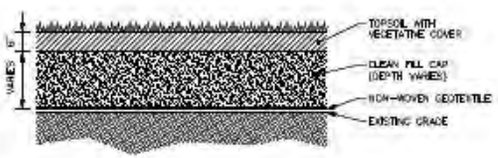




NOTES:

1. WATER LEVEL WITHIN THE PETERS MINE PIT POND FLUCTUATES SEASONALLY AND WITH PRECIPITATION EVENTS.
2. HISTORICAL FILL REMOVAL AREA SHALL BE BACKFILLED TO APPROPRIATE GRADE WITH CLEAN FILL MATERIAL PRIOR TO PLACEMENT OF THE SOIL CAP COVER SYSTEM.
3. APPROXIMATE QUANTITIES HAVE BEEN ESTIMATED AS SHOWN BELOW TO CONSTRUCT THE SOIL CAP COVER SYSTEM. VOLUMES WERE DETERMINED USING AUTOCAD CIVIL 3D 2011 SOFTWARE.

TOPSOIL	1,575 CUBIC YARDS
CLEAN FILL	50,023 CUBIC YARDS
GEOTEXTILE	114,192 SQUARE FEET
HISTORICAL FILL REMOVAL	15,078 CUBIC YARDS



COVER SYSTEM - SOIL CAP

NOT TO SCALE

PROFILE SCALES

HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=10'

RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

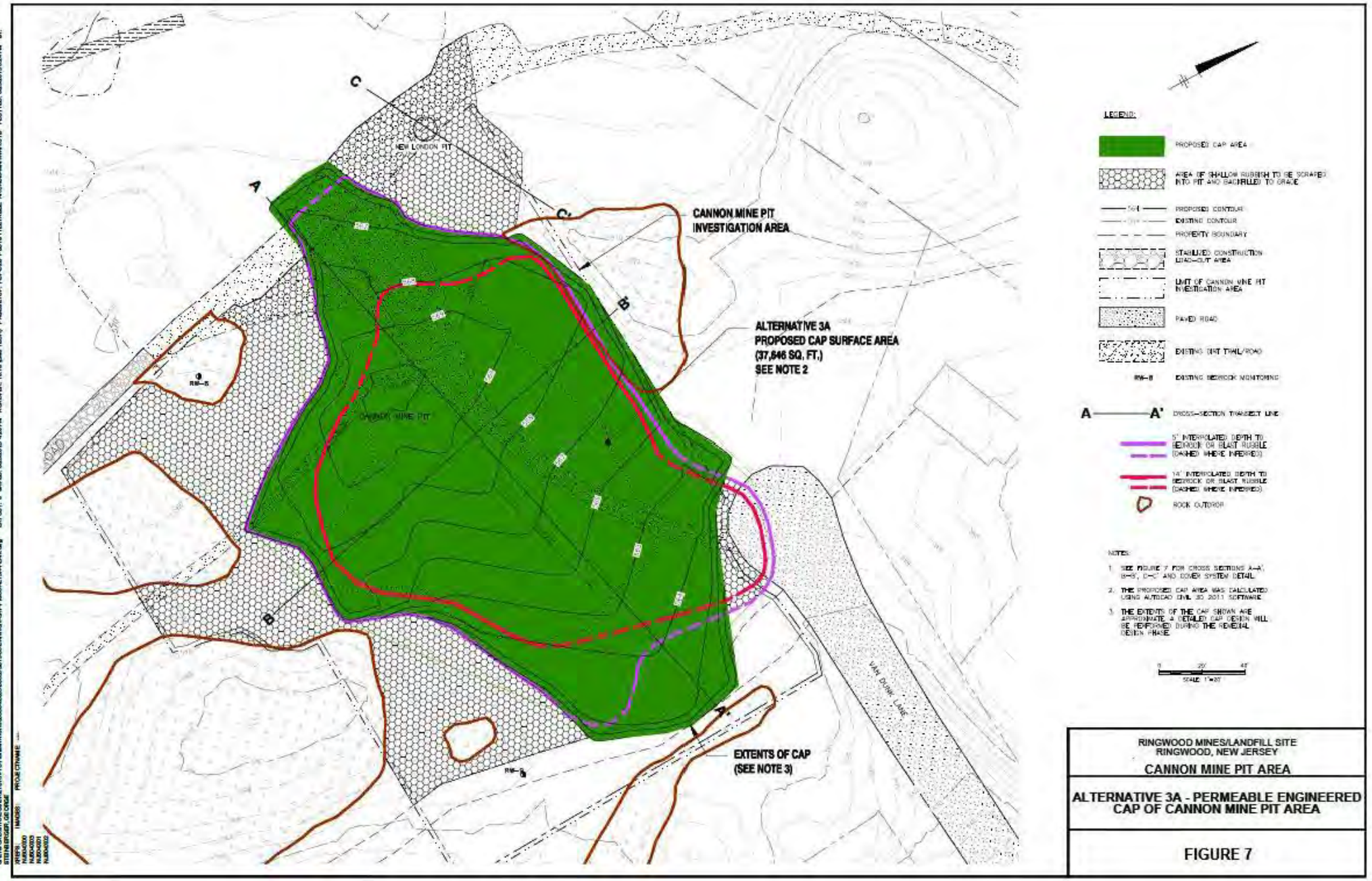
PETERS MINE PIT

ALTERNATIVE 6A – REMOVAL AND OFF-SITE DISPOSAL OF HISTORICAL FILL SURROUNDING PETERS MINE PIT, FILL PETERS MINE PIT, AND PERMEABLE ENGINEERED CAP OF PETERS MINE PIT WITH ENGINEERING AND INSTITUTIONAL CONTROLS, PETERS MINE PIT POND WILL NOT REMAIN

CROSS SECTION AND DETAILS

FIGURE 6

R2-0007941

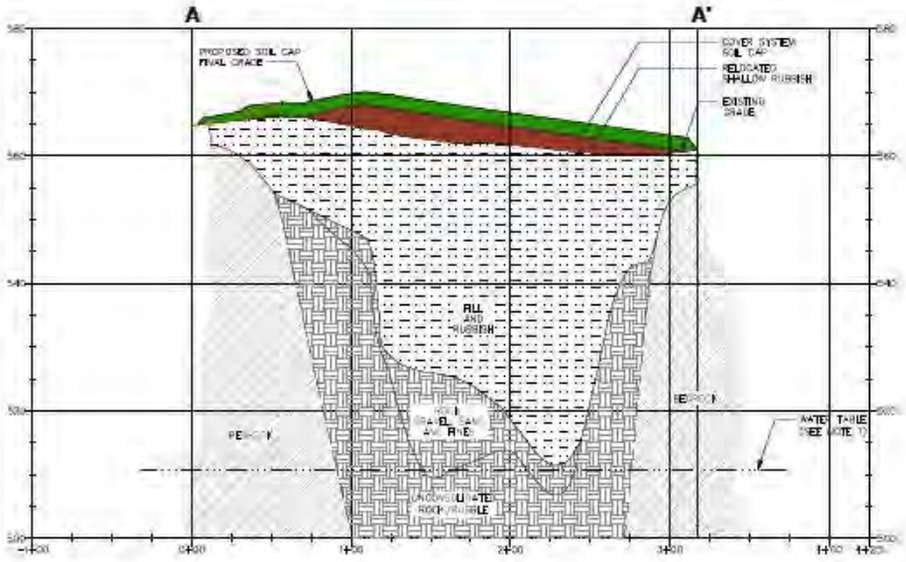


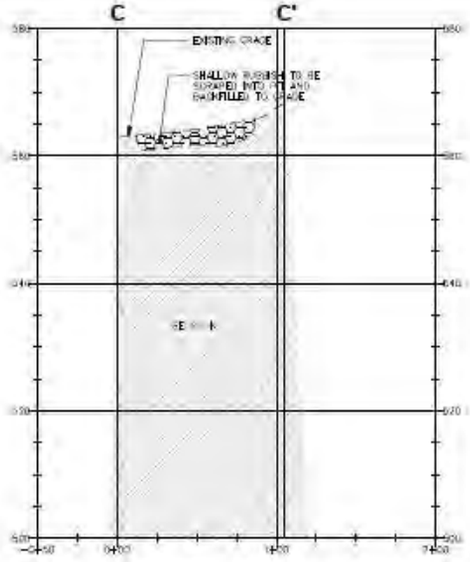
RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

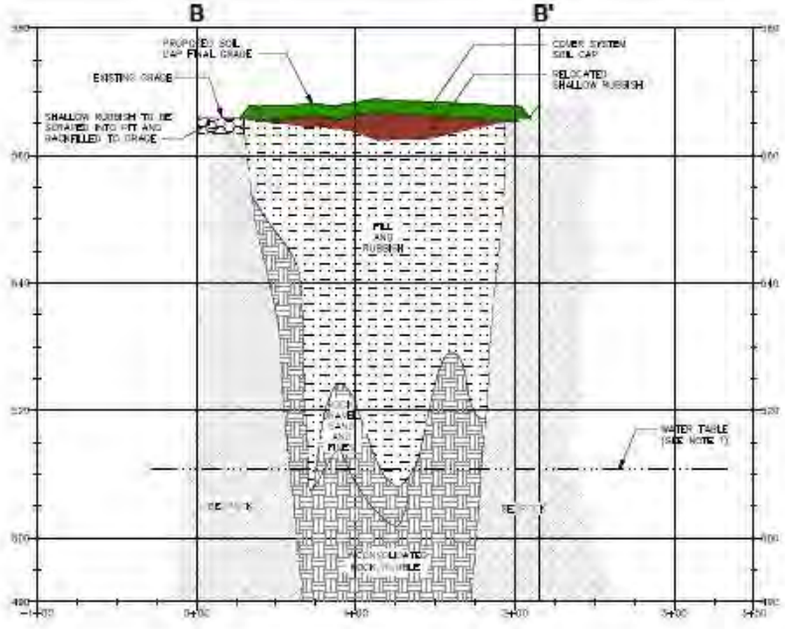
CANNON MINE PIT AREA

ALTERNATIVE 3A - PERMEABLE ENGINEERED CAP OF CANNON MINE PIT AREA

FIGURE 7





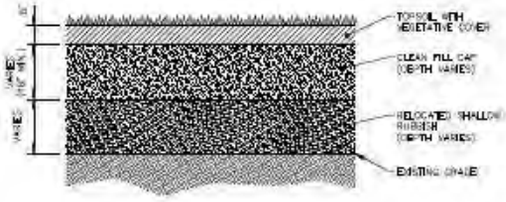


NOTES:

1. THE WATER TABLE SHOWN IS BASED ON THE DEPTH TO WATER MEASUREMENT COLLECTED AT MONITORING WELL MC-2, ON APRIL 15, 2008.
2. APPROXIMATE QUANTITIES HAVE BEEN ESTIMATED AS SHOWN BELOW TO CONSTRUCT THE ENGINEERED PERMEABLE CAP ALTERNATIVE. VOLUMES WERE DETERMINED USING AUTOCAD CIVIL 3D 2011 SOFTWARE.

TOPSOIL	700 CUBIC YARDS
CLEAN FILL	3,885 CUBIC YARDS
RELOCATED SHALLOW RUBBISH	1,815 CUBIC YARDS

PROFILE SCALES



COVER SYSTEM - SOIL CAP

NOT TO SCALE

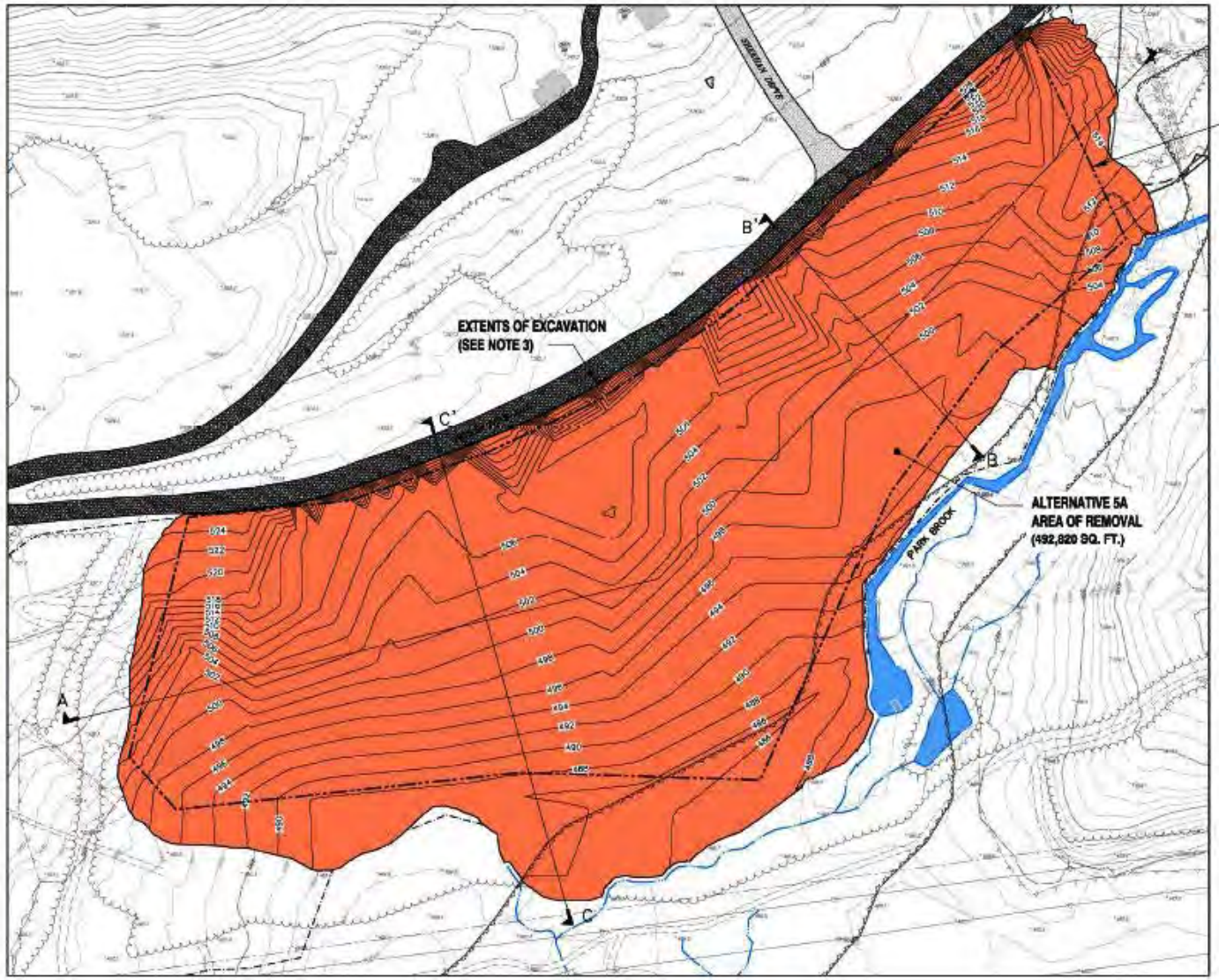
RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

CANNON MINE PIT AREA

ALTERNATIVE 3A - PERMEABLE ENGINEERED CAP OF CANNON MINE PIT AREA CROSS SECTIONS AND DETAIL

FIGURE 8

R2-0007943



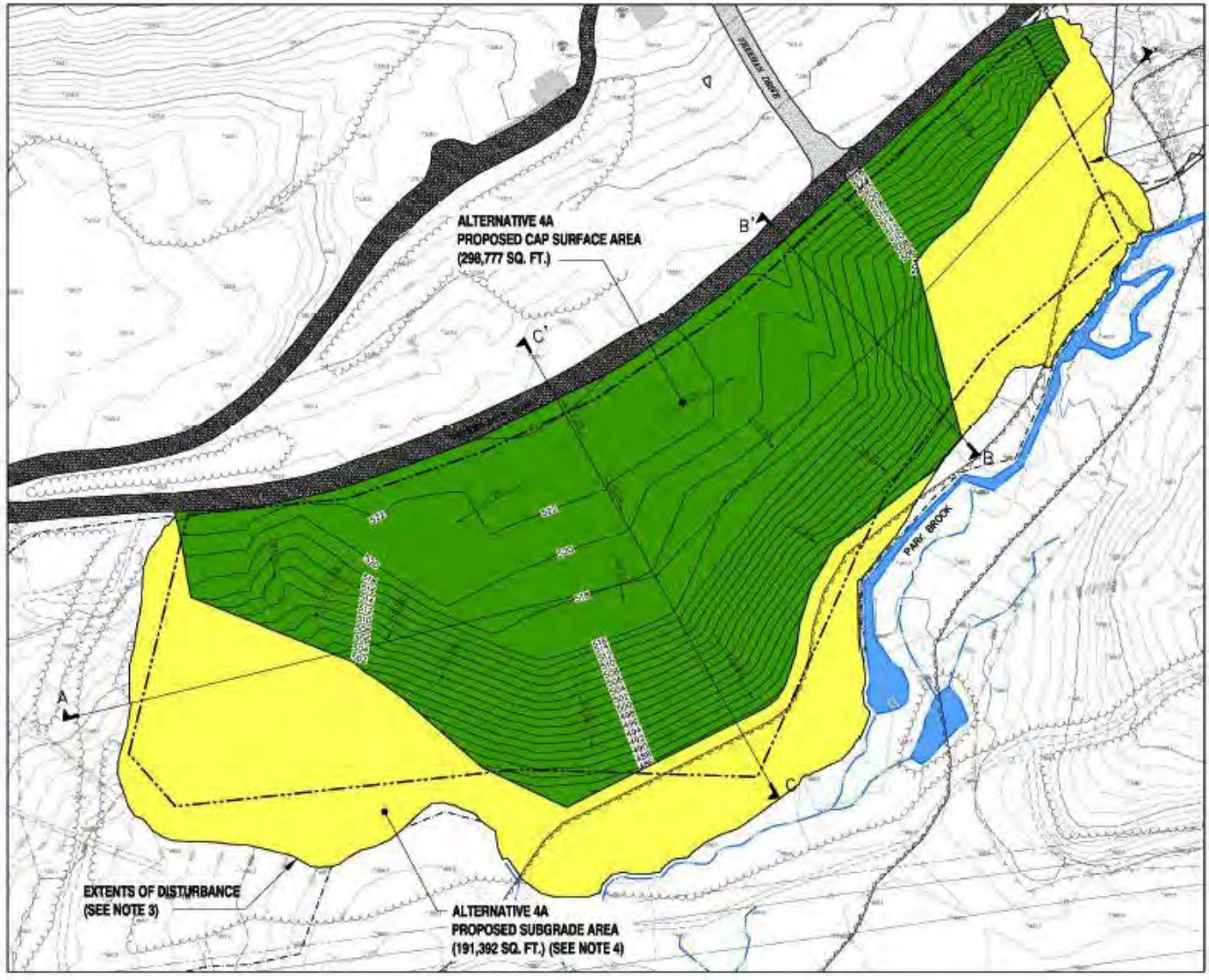
RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

O'CONNOR DISPOSAL AREA

ALTERNATIVE 5A - REMOVAL OF FILL FOR OFF-SITE DISPOSAL EXCEPT MINE TAILINGS

FIGURE 9

R2-0007944



O'CONNOR DISPOSAL AREA BOUNDARY

LEGEND:

- PROPOSED CAP AREA
- PROPOSED SUBGRADE AREA/MATERIAL TO BE RELOCATED UNDER CAP
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- EXISTING ELEVATION CONTOUR
- OVERHEAD UTILITY LINES
- TRAIL
- WETLAND BOUNDARY (TRIDENT)
- O'CONNOR INVESTIGATION AREA
- PROPERTY BOUNDARY
- RIGHT OF WAY/EASEMENT
- BUILDING
- SURFACE WATER
- PAVED ROAD
- EXISTING DIRT TRAIL/ROAD
- WETLAND
- TREE LINE
- A A' CROSS-SECTION TRANSECT LINE
- LIMITS OF 500-YEAR FLOOD PLAIN

NOTE:

1. SEE FIGURES 15 AND 16 FOR CROSS-SECTIONS.
2. PROPOSED RELOCATION AND PERMEABLE CAP AREA WAS CALCULATED USING AUTOCAD CIVIL 3D 2011 SOFTWARE.
3. THE EXTENTS OF DISTURBANCE AND PERMEABLE CAP AREA SHOWN ARE APPROXIMATE. A DETAILED PERMEABLE CAP DESIGN WILL BE PERFORMED DURING THE REMEDIAL DESIGN PHASE.
4. RELOCATED MATERIAL/SUBGRADE AREA TO BE COVERED WITH 6 INCHES OF TOPSOIL AFTER EXISTING MATERIAL IS RELOCATED TO CAP.
5. PROPOSED SUBGRADE AREA SHALL BE REESTABLISHED AS WETLANDS.

0 90 180 360
SCALE IN FEET

RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

O'CONNOR DISPOSAL AREA

ALTERNATIVE 4A - SITE GRADING AND PERMEABLE ENGINEERED CAP

FIGURE 10

R2-0007945

APPENDIX II - Tables

TABLE 1a
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SOIL

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Soil	71556	1,1,1-Trichloroethane	0.0017 J	0.0041 J	mg/kg	F-T1-1+50	2 / 277	0.0001 to 0.2	0.0041	870	n	N	FOD, BSL
	75343	1,1-Dichloroethane	0.00066 J	0.00089 J	mg/kg	F-T8-1+50	3 / 277	0.00011 to 0.19	0.00089	3.3	c	N	FOD, BSL
	95501	1,2-Dichlorobenzene	0.00091 J	0.158 J	mg/kg	DM-01-032906	5 / 266	0.00017 to 0.41	0.158	190	n	N	FOD, BSL
	541731	1,3-Dichlorobenzene	0.0014 J	0.0068 J	mg/kg	CMI-S4(14-14.5)	2 / 266	0.00022 to 0.41	0.0068	NA		N	FOD, NTX
	106467	1,4-Dichlorobenzene	0.0032 J	0.234	mg/kg	CMI-S4(14-14.5)	10 / 350	0.00018 to 0.47	0.234	2.4	c	N	FOD, BSL
	473552	2,6,6-Trimethylbicyclo(3.1.1)Heptane	0.05	0.05	mg/kg	TP-4(071984)	1 / 1	NA	0.05	NA		N	NTX
	78933	2-Butanone (MEK)	0.006	0.271 J	mg/kg	CMI-S4(35-35.5)	17 / 309	0.0016 to 2.7	0.271	2800	n	N	BSL
	591786	2-Hexanone	0.008	0.025	mg/kg	TP-9(072084)Dup	2 / 266	0.00076 to 1.3	0.025	21	n	N	FOD, BSL
	589344	3-Methylhexane	0.17	0.17	mg/kg	TP-3(071984)	1 / 1	NA	0.17	NA		N	NTX
	96140	3-Methylpentane	0.059	0.059	mg/kg	TP-3(071984)	1 / 1	NA	0.059	NA		N	NTX
	108101	4-methyl-2-pentanone (MIBK)	0.0058 J	2.36	mg/kg	SOIL-5-COMPOSITE-8/25	19 / 264	0.00064 to 1.1	2.36	530	n	N	BSL
	67641	Acetone	0.0038 J	1200	mg/kg	DM-01-032906	119 / 269	0.0018 to 61	1200	6100	n	N	BSL
	71432	Benzene	0.00044 J	1.11	mg/kg	SC-1(93-95)	38 / 321	0.00027 to 0.48	1.11	1.1	c	Y	ASL
	53282476	7-(1 -Methylethylidene)-Bicyclo(4.1.0) Heptane	0.017	0.017	mg/kg	TP-4(071984)	1 / 1	NA	0.017	NA		N	NTX
	75150	Carbon disulfide	0.00047 J	0.0647 J	mg/kg	SC-2 (116-118)	49 / 264	0.00018 to 0.42	0.0647	82	n	N	BSL
	108907	Chlorobenzene	0.00099 J	62.9 D	mg/kg	CMI-S4(14-14.5)	16 / 320	0.00027 to 0.47	62.9	29	n	Y	ASL
	67663	Chloroform	0.00035 J	0.161	mg/kg	PMM-S1-070515	22 / 323	0.00024 to 0.44	0.161	0.29	c	N	BSL
	156592	cis-1,2-Dichloroethene	0.00054 J	0.00061 J	mg/kg	CMI-S2(17.5-18)	2 / 245	0.00012 to 0.33	0.00061	78	n	N	FOD, BSL
	110827	Cyclohexane	0.0012 J	2.09	mg/kg	SC-1(88-90)	20 / 244	0.00012 to 0.43	2.09	700	n	N	BSL
	100414	Ethylbenzene	0.00048 J	333 D	mg/kg	CMI-S4(14-14.5)	62 / 280	0.00029 to 1.3	333	5.4	c	Y	ASL
	76131	Freon 113	0.0014 J	0.0055	mg/kg	OC-ITT-14B	13 / 245	0.00023 to 0.78	0.0055	4300	n	N	BSL
	110543	Hexane	0.21	0.21	mg/kg	TP-3(071984)	1 / 1	NA	0.21	57	n	N	BSL
	98828	Isopropylbenzene	0.00053 J	14.2 J	mg/kg	F-T2-4+88	52 / 245	0.00018 to 0.72	14.2	210	n	N	BSL
	79209	Methyl acetate	0.0874	6.62	mg/kg	DOH-4-26-05-3	11 / 245	0.00065 to 1.1	6.62	7800	n	N	FOD, BSL
	110430	Methyl n-amyl ketone	0.078	0.22	mg/kg	TP-9(072084)Dup	2 / 2	NA	0.22	NA		N	NTX
	1634044	Methyl tert butyl ether	0.00086 J	0.0035	mg/kg	CMI-S4(14-14.5)	3 / 245	0.00022 to 0.39	0.0035	43	c	N	FOD, BSL
	108872	Methylcyclohexane	0.00091 J	3.73 JD	mg/kg	CMI-S4(35-35.5)	32 / 245	0.00027 to 0.91	3.73	NA		N	NTX
	96377	Methylcyclopentane	0.17	0.17	mg/kg	TP-3(071984)	1 / 1	NA	0.17	NA		N	NTX
	75092	Methylene chloride	0.00096 J	0.0698	mg/kg	DM-03-032906	46 / 279	0.00018 to 0.31	0.0698	11	c	N	BSL
	95476	o-Xylene	0.00044 J	207	mg/kg	SOIL-5-COMPOSITE-8/25	60 / 245	0.00016 to 0.84	207	380	n	N	BSL
	100425	Styrene	0.29	0.29	mg/kg	SC-2 (116-118)	1 / 264	0.000085 to 0.15	0.29	630	n	N	FOD, BSL
	127184	Tetrachloroethene	0.0017 J	0.026	mg/kg	TP-3(071984)	9 / 320	0.00011 to 0.27	0.026	0.55	c	N	FOD, BSL
	108883	Toluene	0.00024 J	120	mg/kg	OC-PS-1	67 / 278	0.00023 to 0.61	120	500	n	N	BSL
	79016	Trichloroethene	0.0026 J	0.606	mg/kg	ROAD-2	7 / 320	0.0002 to 0.73	0.606	2.8	c	N	FOD, BSL
	508327	1,7,7-Trimethyl-Tricyclo(2.2.1.02,6)Heptane	0.014	0.014	mg/kg	TP-4(071984)	1 / 1	NA	0.014	NA		N	NTX

TABLE 1a
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SOIL

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Soil	75014	Vinyl Chloride	0.0044 J	0.0078 J	mg/kg	CMA-DM3-WC-110607	2 / 320	0.00014 to 0.25	0.0078	0.06	c	N	FOD, BSL
	106-42-3,108-38-3	Xylene, -m,p	0.00039 J	557	mg/kg	SOIL-5-COMPOSITE-8/25	65 / 245	0.0003 to 1.6	557	340	n	Y	ASL
	1330207	Xylenes	0.00049 J	764	mg/kg	SOIL-5-COMPOSITE-8/25	79 / 269	0.00016 to 0.94	764	63	n	Y	ASL
	92524	1,1'-Biphenyl	0.0121 J	3.98	mg/kg	SC-1(70-80)	21 / 237	0.0035 to 1.1	3.98	390	n	N	BSL
	3779611	3,7-Dimethyl-1,3,6-Octatriene(E)	0.013	0.013	mg/kg	TP-16 6ft FD	1 / 1	NA	0.013	NA		N	NTX
	91576	2-Methylnaphthalene	0.0223 J	17.3	mg/kg	OC-PS-1	38 / 255	0.0044 to 1.4	17.3	31	n	N	BSL
	95487	2-Methylphenol	3.56 J	3.56 J	mg/kg	DM-01-032306	1 / 293	0.0072 to 2.1	3.56	310	n	N	FOD, BSL
	83329	Acenaphthene	0.0122 J	36.1	mg/kg	SC-1(70-80)	28 / 258	0.0039 to 1.3	36.1	340	n	N	BSL
	208968	Acenaphthylene	0.0428 J	2.6	mg/kg	SC-1(70-80)	11 / 258	0.007 to 0.88	2.6	NA		N	FOD, NTX
	98862	Acetophenone	0.0304 J	0.0755 J	mg/kg	OC-SS-10	2 / 237	0.0052 to 1.4	0.0755	780	n	N	FOD, BSL
	120127	Anthracene	0.0149 J	66.6	mg/kg	SC-1(70-80)	45 / 258	0.0056 to 1	66.6	1700	n	N	BSL
	56553	Benzo(a)anthracene	0.0178 J	69.1	mg/kg	SC-1(70-80)	87 / 258	0.0038 to 1.3	69.1	0.15	c	Y	ASL
	50328	Benzo(a)pyrene	0.0155 J	65.2	mg/kg	SC-1(70-80)	81 / 258	0.0065 to 0.91	65.2	0.015	c	Y	ASL
	205992	Benzo(b)fluoranthene	0.0155 J	53	mg/kg	SC-1(70-80)	75 / 258	0.0052 to 1.2	53	0.15	c	Y	ASL
	191242	Benzo(g,h,i)perylene	0.0145 J	37.7	mg/kg	SC-1(70-80)	65 / 258	0.0063 to 1.4	37.7	NA		N	NTX
	207089	Benzo(k)fluoranthene	0.0159 J	49.9	mg/kg	SC-1(70-80)	63 / 258	0.0058 to 2	49.9	1.5	c	Y	ASL
	85687	Benzyl butyl phthalate	0.002 J	6.92	mg/kg	SC-1(93-95)	21 / 258	0.0074 to 1.6	6.92	260	c	N	BSL
	111444	bis(2-Chloroethyl)ether	0.0152 J	0.119	mg/kg	F-T7-0+94	4 / 258	0.009 to 1.1	0.119	0.21	c	N	FOD, BSL
	117817	bis(2-Ethylhexyl)phthalate	0.006 J	4260	mg/kg	SC-2 (82-84)	130 / 258	0.0058 to 120	4260	35	c	Y	ASL
	86748	Carbazole	0.0213 J	20.5	mg/kg	SC-1(70-80)	19 / 237	0.0051 to 0.88	20.5	NA		N	NTX
	218019	Chrysene	0.0141 J	65.3	mg/kg	SC-1(70-80)	96 / 259	0.005 to 0.97	65.3	15	c	Y	ASL
	4413212	1,1'Ethylidenebis-Cyclopentane	0.021	0.021	mg/kg	TP-16 6ft FD	1 / 1	NA	0.021	NA		N	NTX
	53703	Dibenzo(a,h)anthracene	0.0205 J	10.5	mg/kg	SC-1(70-80)	24 / 258	0.0088 to 1.1	10.5	0.015	c	Y	ASL
	132649	Dibenzofuran	0.0137 J	22.3	mg/kg	SC-1(70-80)	26 / 255	0.0046 to 1	22.3	7.8	n	Y	ASL
	84662	Diethyl phthalate	0.143	6.17 D	mg/kg	CMI-S4(14-14.5)	6 / 258	0.0053 to 0.93	6.17	4900	n	N	FOD, BSL
	131113	Dimethyl phthalate	0.0498 J	0.0553 J	mg/kg	T7-0+0(10.0-11.0)	2 / 258	0.004 to 0.93	0.0553	NA		N	FOD, NTX
	84742	di-n-butyl phthalate	0.003 J	16	mg/kg	CMI-S2(14.5-15)	33 / 258	0.0053 to 1.4	16	610	n	N	BSL
	117840	di-n-octylphthalate	0.15	12.5	mg/kg	SC-2 (38-40)	11 / 258	0.0065 to 1.9	12.5	NA		N	FOD, NTX
	206440	Fluoranthene	0.0133 J	188	mg/kg	SC-1(70-80)	114 / 258	0.0041 to 0.93	188	230	n	N	BSL
	86737	Fluorene	0.0122 J	40.8	mg/kg	SC-1(70-80)	40 / 258	0.0061 to 1.1	40.8	230	n	N	BSL
	193395	Indeno(1,2,3-cd)pyrene	0.0163 J	36.3	mg/kg	SC-1(70-80)	50 / 258	0.01 to 1.7	36.3	0.15	c	Y	ASL
	91203	Naphthalene	0.0116 J	43.8	mg/kg	OC-PS-1	48 / 258	0.0047 to 1.5	43.8	3.6	c	Y	ASL
	86306	N-Nitrosodiphenylamine	0.142 J	0.879	mg/kg	SC-1(88-90)	14 / 258	0.0045 to 0.9	0.879	99	c	N	BSL
	87865	Pentachlorophenol	1.68	8.15	mg/kg	SC-1(93-95)	2 / 296	0.0075 to 2.4	8.15	3	c	N	FOD
	32273771	Octahydro-1-Methyl-Pentalene	0.042	0.042	mg/kg	TP-16 6ft FD	1 / 1	NA	0.042	NA		N	NTX

TABLE 1a

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SOIL

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Soil	85018	Phenanthrene	0.0178 J	200	mg/kg	SC-1(70-80)	85 / 258	0.0049 to 2.8	200	NA		N	NTX
	108952	Phenol	0.0719 J	0.453 J	mg/kg	SC-2 (38-40)	5 / 258	0.01 to 2.7	0.453	1800	n	N	FOD, BSL
	129000	Pyrene	0.0133 J	146	mg/kg	SC-1(70-80)	114 / 258	0.0046 to 0.9	146	170	n	N	BSL
	110861	Pyridine	0.0119 J	0.0119 J	mg/kg	62305-1	1 / 41	0.0027 to 0.0064	0.0119	7.8	n	N	FOD, BSL
	281232	Tricyclo[3.3.1.13,7]Decane	0.02	0.02	mg/kg	TP-16 6ft FD	1 / 1	NA	0.02	NA		N	NTX
	108-39-4, 106-44-5	3&4-Methylphenol	0.0183 J	21.5	mg/kg	SC-1(93-95)	10 / 278	0.007 to 3.1	21.5	31	n	N	FOD, BSL
	59507	4-Chloro-3-Methylphenol	0.01 J	0.01 J	mg/kg	D-BG1-U(111687)	1 / 255	0.01 to 2.8	0.01	610	n	N	FOD, BSL
	88186	2-(1,1-Dimethylethyl)-Phenol	0.035	0.035	mg/kg	TP-16 6ft FD	1 / 1	NA	0.035	NA		N	NTX
	72548	4,4-DDD	0.0015 J	1.36	mg/kg	SC-1(93-95)	17 / 94	0.00022 to 0.01	1.36	2	c	N	BSL
	72559	4,4-DDE	0.0017	0.276	mg/kg	SC-1(93-95)	24 / 94	0.00027 to 0.011	0.276	1.4	c	N	BSL
	50293	4,4-DDT	0.0016	0.197	mg/kg	SC-1(93-95)	21 / 94	0.00019 to 0.011	0.197	1.7	c	N	BSL
	309002	Aldrin	0.0465	0.127 J	mg/kg	CMA-TP1-110207	2 / 94	0.0003 to 0.021	0.127	0.029	c	N	FOD
	5103719	alpha-Chlordane	0.0039	0.0568 J	mg/kg	COMPOST-2	9 / 83	0.00019 to 0.019	0.0568	1.6	c	N	BSL
	319857	beta-BHC	0.0049	0.0202	mg/kg	TOPSOIL-1	4 / 94	0.0003 to 0.026	0.0202	0.27	c	N	FOD, BSL
	60571	Dieldrin	0.0023	2.98	mg/kg	SC-1(93-95)	17 / 94	0.00015 to 0.02	2.98	0.03	c	Y	ASL
	33213659	Endosulfan II (beta)	0.0123	0.0123	mg/kg	SC-1(104-106)	1 / 94	0.00025 to 0.016	0.0123	37	n	N	FOD, BSL
	72208	Endrin	0.098	0.098	mg/kg	SC-1(93-95)	1 / 122	0.00003 to 0.0066	0.098	1.8	n	N	FOD, BSL
	5103742	gamma-Chlordane	0.0029 JN	0.0476 J	mg/kg	COMPOST-2	9 / 83	0.00018 to 0.0072	0.0476	1.6	c	N	BSL
	1024573	Heptachlor epoxide	0.0022	0.0057 J	mg/kg	COMPOST-2	2 / 122	0.000015 to 0.0087	0.0057	0.053	c	N	FOD, BSL
	53469219	PCB 1242	0.0645	5.44	mg/kg	SC-1(93-95)	18 / 269	0.0012 to 0.14	5.44	0.22	c	Y	ASL
	12672296	PCB 1248	0.0589	13 J	mg/kg	CMA-DM11-WC-020108	14 / 269	0.0013 to 0.31	13	0.22	c	Y	ASL
	11097691	PCB 1254	0.044	398	mg/kg	OC-DR-2	43 / 269	0.0018 to 2.5	398	0.22	c	Y	ASL
	11096825	PCB 1260	0.0497	3.88	mg/kg	SC-2 (38-40)	28 / 269	0.00078 to 0.18	3.88	0.22	c	Y	ASL
	57125	Cyanide	0.56	1.4	mg/kg	SOIL-4-26-05-3	5 / 20	0.23 to 0.65	1.4	160	n	N	BSL
	7429905	Aluminum	0.38	68000	mg/kg	MTI-BG-NS-13-2-12-18-C	265 / 265	0.01 to 720	68000	7700	n	Y	ASL
	7440360	Antimony	0.00162 J	9800 J	mg/kg	SC-1(88-90)	75 / 306	0.00002 to 72	9800	3.1	n	Y	ASL
	7440382	Arsenic	0.0007	126	mg/kg	T2-5+00(9.0-10.0)	308 / 384	0.0002 to 72	126	0.39	c	Y	ASL
	7440393	Barium	0.085 B	46300	mg/kg	DRUM032905	297 / 353	0.00001 to 720	46300	1500	n	Y	ASL
	7440417	Beryllium	0.1 B	1.7	mg/kg	SC-1(104-106)	169 / 289	0.01 to 18	1.7	16	n	N	BSL
	7440439	Cadmium	0.00057 B	60.6	mg/kg	CMI-S4(14-14.5)	155 / 343	0.00052 to 18	60.6	7	n	Y	ASL
	7440702	Calcium	54	154000	mg/kg	CMI-S4(43.5-44)	255 / 256	0.7 to 18000	154000	NA		N	NUT
	7440473	Chromium	0.001 B	1720	mg/kg	SC-1(88-90)	285 / 354	0.0005 to 36	1720	0.29	c	Y	ASL
	7440484	Cobalt	2.4 B	75	mg/kg	DRUM032905	190 / 235	0.029 to 180	75	2.3	n	Y	ASL
	7440508	Copper	0.319	1460 J	mg/kg	OC-ITP-03B	244 / 276	0.077 to 90	1460	310	n	Y	ASL
	7439896	Iron	0.33	155000 J	mg/kg	SC-2 (144-145)	265 / 266	0.01 to 450	155000	5500	n	Y	ASL

TABLE 1a

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SOIL

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Soil	7439921	Lead	0.0005	9030	mg/kg	CMI-S6(36.5-37)	314 / 381	0.00002 to 72	9030	40	n	Y	ASL
	7439954	Magnesium	0.39	41000	mg/kg	SC-2 (104-106)	243 / 265	0.003 to 18000	41000	NA		N	NUT
	7439965	Manganese	0.006	2610	mg/kg	DOH-4-26-05-1	265 / 265	0.00001 to 54	2610	180	n	Y	ASL
	7439976	Mercury	0.000046 B	5.9	mg/kg	CMI-S2(14.5-15)	218 / 345	0.000037 to 0.37	5.9	0.56	n	Y	ASL
	7440020	Nickel	0.267	157	mg/kg	T3-1+00(5.5-6.5)	224 / 276	0.058 to 140	157	150	n	Y	ASL
	7440097	Potassium	1.3	17000	mg/kg	MTI-BG-NS-13-2-12-18-C	220 / 265	0.01 to 18000	17000	NA		N	NUT
	7782492	Selenium	0.0065 B	16.4	mg/kg	CMI-S4(14-14.5)	66 / 346	0.0062 to 72	16.4	39	n	N	BSL
	7440224	Silver	0.00062 B	18.9	mg/kg	SOIL-4-26-05-3	37 / 343	0.00052 to 36	18.9	39	n	N	BSL
	7440235	Sodium	2.97 J	288000 J	mg/kg	DRUM032905	126 / 242	0.01 to 18000	288000	NA		N	NUT
	7440246	Strontium	0.0161 J	190	mg/kg	MTI-BG-NS-14-2-12-18-C	30 / 30	0.0001 to 0.1	190	4700	n	N	BSL
	7440280	Thallium	0.11 B	3.4 B	mg/kg	CMI-S5(45.5-46)	16 / 315	0.1 to 52	3.4	NA		Y	NSL
	7440622	Vanadium	0.00056	350	mg/kg	F-T4-1+30	238 / 265	0.00003 to 180	350	0.55	n	Y	ASL
	7440666	Zinc	0.019 J	17100	mg/kg	CMI-S5(26.5-27)	293 / 306	0.001 to 72	17100	2300	n	Y	ASL

Notes:

Concentrations in milligrams per kilogram (mg/kg).

(1) Qualifier codes:

J - concentration estimated below the detection limit.

JD - concentration estimated below the detection limit with a sample dilution.

JN - concentration estimated below the detection limit and the compound is tentatively identified.

D - sample diluted.

B - contamination detected in blank.

(2) Maximum detected concentration used for screening.

(3) Regional Screening Levels for Residential Soil used for Screening Toxicity Value.

RSLs based on a non-cancer endpoint have been divided by 10 per USEPA, 2011a.

Chromium(VI) toxcity data used as for chromium.

(4) Codes used for the "Rationale for Selection or Deletion":

ASL - above screening level

BSL - below screening level

NTX - no toxicity data; compound will be discussed qualitatively

NUT - essential nutrient

FOD - frequency of detection below 5%

All site data used for COPC screening.

c - based on potential carcinogenic effects

n - based on potential noncarcinogenic effects

COPC - constituent of potential concern

NA - not available

EPC - exposure point concentration

TABLE 1b

OCCURRENCE, DISTRIBUTION AND SELECTION OF CONTAMINANTS OF POTENTIAL CONCERN - SEDIMENT

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Sediment	78933	2-Butanone (MEK)	0.127 J	0.127 J	mg/kg	SD-PMB-01	1 / 26	0.0019 to 0.048	0.127	2800	n	N	FOD, BSL
	67641	Acetone	0.01 JB	0.278 J	mg/kg	SD-PMB-01	12 / 26	0.0022 to 0.028	0.278	6100	n	N	BSL
	75150	Carbon disulfide	0.0011 J	0.0011 J	mg/kg	PMP-SED-1	1 / 6	0.00029 to 0.001	0.0011	82	n	N	BSL
	76131	Freon 113	0.0322 J	0.0322 J	mg/kg	SR-4-POND/SED	1 / 20	0.00043 to 0.032	0.0322	4300	n	N	BSL
	79209	Methyl acetate	0.008	0.279	mg/kg	SR-4-POND/SED	11 / 20	0.0008 to 0.021	0.279	7800	n	N	BSL
	75092	Methylene chloride	0.01	0.094	mg/kg	3181S(071384),SD-7(070184)	15 / 44	0.00022 to 0.01	0.094	11	c	N	BSL
	108883	Toluene	0.0112	0.0112	mg/kg	SR-4-POND/SED	1 / 42	0.00026 to 0.011	0.0112	500	n	N	FOD, BSL
	1330207	Xylenes	0.0013 J	0.0013 J	mg/kg	SD-MRB-03	1 / 14	0.0003 to 0.0055	0.0013	63	n	N	BSL
	106445	4-methylphenol	0.16 J	0.16 J	mg/kg	SD1(031588)	1 / 6	0.4 to 0.87	0.16	31	n	N	BSL
	208968	Acenaphthylene	0.0558 J	0.0558 J	mg/kg	SD-MRB-02	1 / 42	0.00044 to 0.87	0.0558	NA		N	FOD, NTX
	120127	Anthracene	0.0532 J	0.0532 J	mg/kg	SD-MRB-02	1 / 42	0.00044 to 1.2	0.0532	1700	n	N	FOD, BSL
	100527	Benzaldehyde	0.0883 J	0.0883 J	mg/kg	PMP-SED-5	1 / 6	0.0085 to 0.014	0.0883	780	n	N	BSL
	56553	Benzo(a)anthracene	0.00453	0.35	mg/kg	3181R(071284);SD-6(070184)	10 / 42	0.0012 to 0.87	0.35	0.15	c	Y	ASL
	50328	Benzo(a)pyrene	0.00426	0.61 J	mg/kg	SD6(031588)	7 / 42	0.00064 to 0.62	0.61	0.015	c	Y	ASL
	205992	Benzo(b)fluoranthene	0.0108 J	0.157 J	mg/kg	SD-MRB-02	9 / 42	0.00058 to 0.48	0.157	0.15	c	Y	ASL
	191242	Benzo(g,h,i)perylene	0.00561 J	0.119 J	mg/kg	SD-MRB-02	6 / 42	0.00055 to 0.87	0.119	NA		N	NTX
	207089	Benzo(k)fluoranthene	0.0177	0.42	mg/kg	3181R(071284),SD-6(070184)	6 / 42	0.00059 to 0.69	0.42	1.5	c	N	BSL
	117817	bis(2-Ethylhexyl)phthalate	0.0668 J	0.371	mg/kg	PMP-SED-3	7 / 42	0.0065 to 1.1	0.371	35	c	N	BSL
	218019	Chrysene	0.00364 J	0.41	mg/kg	3181R(071284),SD-6(070184)	13 / 42	0.00064 to 0.51	0.41	15	c	N	BSL
	53703	Dibenz(a,h)anthracene	0.00626	0.00662	mg/kg	PMP-SED-1	2 / 6	0.00088 to 0.0014	0.00662	0.015	c	N	BSL
	131113	Dimethyl phthalate	0.0839 J	0.0839 J	mg/kg	PMP-SED-2	1 / 6	0.013 to 0.021	0.0839	NA		N	NTX
	117840	di-n-octylphthalate	0.22	0.22	mg/kg	SD-4(070184)	1 / 42	0.0073 to 0.87	0.22	NA		N	FOD, NTX
	206440	Fluoranthene	0.00491	0.633 J	mg/kg	SR-4-POND/SED	13 / 42	0.00037 to 0.48	0.633	230	n	N	BSL
	193395	Indeno(1,2,3-cd)pyrene	0.00583	0.0976 J	mg/kg	SD-MRB-02	6 / 42	0.00062 to 1.2	0.0976	0.15	c	N	BSL
	91203	Naphthalene	0.00703 J	0.00703 J	mg/kg	PMP-SED-1	1 / 6	0.00042 to 0.00067	0.00703	3.6	c	N	BSL
	85018	Phenanthrene	0.00448	0.267	mg/kg	SD-MRB-02	9 / 42	0.00043 to 0.87	0.267	NA		N	NTX
	129000	Pyrene	0.00753	0.526	mg/kg	SD-MRB-02	14 / 42	0.00033 to 0.94	0.526	170	n	N	BSL
	64743039	Phenolics	0.13	0.13	mg/kg	SW6(071084)	1 / 11	0.1 to 0.1	0.13	1800	n	N	BSL
	7429905	Aluminum	3400	30000 J	mg/kg	SD-PMB-01	26 / 26	2.8 to 150	30000	7700	n	Y	ASL
	7440360	Antimony	1	6.1	mg/kg	SR-4-POND/SED	6 / 45	0.25 to 15	6.1	3.1	n	Y	ASL
	7440382	Arsenic	0.72	71.6	mg/kg	PMP-SED-6	41 / 44	0.039 to 7.4	71.6	0.39	c	Y	ASL
	7440393	Barium	21	410	mg/kg	SW-1(SE)(071084)	39 / 43	0.34 to 150	410	1500	n	N	BSL
	7440417	Beryllium	0.2	2	mg/kg	SW-1(SE)(071084)	17 / 45	0.025 to 3.7	2	16	n	N	BSL
	7440439	Cadmium	0.06	4.9	mg/kg	SD-PMB-01	16 / 45	0.17 to 3.7	4.9	7	n	N	BSL

TABLE 1b

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SEDIMENT

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C) (3)		COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Sediment	7440702	Calcium	200	50900	mg/kg	PMP-SED-3	23 / 23	13 to 3700	50900	NA		N	NUT
	7440473	Chromium	4.1	51.7 J	mg/kg	SD-PMB-01	44 / 47	0.21 to 7.4	51.7	0.29	c	Y	ASL
	7440484	Cobalt	3.7	43.2	mg/kg	SD-PMB-01	17 / 27	0.15 to 37	43.2	2.3	n	Y	ASL
	7440508	Copper	0.163	141 J	mg/kg	SD-PMB-01	43 / 44	0.29 to 18	141	310	n	N	BSL
	57125	Cyanide	0.29	0.42	mg/kg	SW-6(SE)(071084)	3 / 17	0.3 to 2.1	0.42	160	n	N	BSL
	7439896	Iron	4400	318000 J	mg/kg	SD-PAB-06	36 / 36	5.1 to 74	318000	5500	n	Y	ASL
	7439921	Lead	2.8	384	mg/kg	SD-PMB-01	38 / 45	0.53 to 7.4	384	40	n	Y	ASL
	7439954	Magnesium	520	14100 J	mg/kg	SD-PMB-01	22 / 23	0.7 to 3700	14100	NA		N	NUT
	7439965	Manganese	4.5	5200	mg/kg	SW-6(SE)(071084)	37 / 37	0.037 to 11	5200	180	n	Y	ASL
	7439976	Mercury	0.015	0.5 J	mg/kg	SD-PMB-01	21 / 42	0.01 to 0.3	0.5	0.78	n	N	BSL
	7440020	Nickel	0.135	82.9	mg/kg	SD-PMB-01	41 / 44	0.64 to 29	82.9	150	n	N	BSL
	7440097	Potassium	120	3740 J	mg/kg	SD-PMB-01	16 / 23	8.2 to 3700	3740	NA		N	NUT
	7782492	Selenium	0.07	4.5	mg/kg	SW-7(SE)(071084)	5 / 44	0.05 to 8.8	4.5	39	n	N	BSL
	7440224	Silver	0.28 B	1.2	mg/kg	SD-14B(101189)	14 / 43	0.18 to 7.4	1.2	39	n	N	BSL
	7440235	Sodium	30	1770 B	mg/kg	PMP-SED-3	11 / 23	93 to 3700	1770	NA		N	NUT
	7440280	Thallium	5	14	mg/kg	SW-6(SE)(071084)	11 / 40	0.98 to 18	14	0.078	n	N	NTX
	7440315	Tin	5	5.8	mg/kg	NUS10	3 / 8	12 to 13	5.8	4700	n	N	BSL
	7440622	Vanadium	10	163 J	mg/kg	SD-PMB-01	24 / 26	0.16 to 37	163	39	n	Y	ASL
	7440666	Zinc	17	561 J	mg/kg	SD-PMB-01	44 / 44	0.49 to 15	561	2300	n	N	BSL
	93721	Silvex	0.0075	0.0075	mg/kg	SW-6(SE)(071084)	1 / 10	0.005 to 0.01	0.0075	49	n	N	BSL
	53469219	PCB Aroclor 1242	0.0078	0.0078	mg/kg	PMP-SED-6	1 / 6	0.0014 to 0.002	0.0078	0.22	c	N	BSL
	11097691	PCB Aroclor 1254	0.0074	0.0257	mg/kg	PMP-SED-2	4 / 6	0.002 to 0.0029	0.0257	0.22	c	N	BSL
	11096825	PCB Aroclor 1260	0.0084	0.0196	mg/kg	PMP-SED-3	4 / 6	0.0014 to 0.002	0.0196	0.22	c	N	BSL

Notes:

Concentrations in milligrams per kilogram (mg/kg).

(1) Qualifier codes:

J - concentration estimated below the detection limit.

JB - concentration estimated below the detection limit and compound detected in associated blank.

B - contamination detected in blank or concentration above detection limit but below reporting limit.

(2) Maximum detected concentration used for screening.

(3) Regional Screening Levels for Residential Soil used for Screening Toxicity Value.

RSLs based on a non-cancer endpoint have been divided by 10 per USEPA, 2011a.

Chromium(VI) toxcity data used as for chromium.

(4) Codes used for the "Rationale for Selection or Deletion":

ASL - above screening level

BSL - below screening level

NTX - no toxicity data; compound will be discussed qualitatively

NUT - essential nutrient

FOD - frequency of detection below 5%

All site data used for COPC screening.

c - based on potential carcinogenic effects

n - based on potential noncarcinogenic effects

COPC - constituent of potential concern

NA - not available

EPC - exposure point concentration

TABLE 1c

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SURFACE WATER

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (3)	COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Surface Water	79-34-5	1,1,2,2-Tetrachloroethane	20	20	ug/L	SW-7(101189)	1 / 110	0.2 to 10	20	0.17	NRWQC	Y	FOD
	75-34-3	1,1-Dichloroethane	2.2	3 J	ug/L	samp1199803030	2 / 139	0.19 to 10	3	NA		N	FOD, NSL
	95-50-1	1,2-Dichlorobenzene	0.31 J	0.44 J	ug/L	PM AIRSHAFT 230	3 / 111	0.13 to 20	0.44	420	NRWQC	N	FOD, BSL
	629-14-1	1,2-Diethoxyethane	20	20	ug/L	NUS8	1 / 5	NA	20	NA		N	NTX
	541-73-1	1,3-Dichlorobenzene	1.8	1.8	ug/L	PM AIRSHAFT 230	1 / 111	0.15 to 20	1.8	320	NRWQC	N	FOD, BSL
	106-46-7	1,4-Dichlorobenzene	1.9	5.6	ug/L	PM AIRSHAFT 230	3 / 111	0.17 to 20	5.6	63	NRWQC	N	FOD, BSL
	934-34-9TIC	2(3H)-Benzothiazolone	4 J	4 J	ug/L	samp1199803030	1 / 1	NA	4	NA		N	NTX
	78-93-3	2-Butanone (MEK)	59.5 BI	59.5 BI	ug/L	SW-3(101189)	1 / 74	1.6 to 10	59.5	NA		N	FOD, NSL
	67-64-1	Acetone	7 J	78.9	ug/L	NWRW7(5/11/2011)	6 / 88	0.727 to 50	58.6	NA		Y	NSL
	71-43-2	Benzene	0.33 J	31	ug/L	PM AIRSHAFT 230	8 / 110	0.05 to 10	31	0.15	NJSWQS	Y	ASL
	75-15-0	Carbon disulfide	0.1 J	0.1 J	ug/L	SW-9 (4/13/00)	2 / 74	0.15 to 25	0.1	NA		N	FOD, NSL
	108-90-7	Chlorobenzene	6	13.1	ug/L	PM AIRSHAFT 230	3 / 110	0.086 to 10	13.1	100	MCL	N	FOD, BSL
	75-45-6	Chlorodifluoromethane	20	20	ug/L	NUS8	1 / 5	NA	20	NA		Y	NSL
	75-00-3	Chloroethane	0.53 J	15.9	ug/L	PM AIRSHAFT 230	4 / 113	0.185 to 10	15.9	NA		N	FOD, NSL
	593-70-4	Chlorofluoromethane	30	30	ug/L	NUS8	1 / 5	NA	30	NA		N	NTX
	156-59-2	cis-1,2-Dichloroethene	0.79 J	18.4	ug/L	NWRW7(5/11/2011)	2 / 44	0.22 to 0.5	0.79	70	MCL	N	FOD, BSL
	10061-01-5	cis-1,3-Dichloropropene	20	20	ug/L	SW-3(101189)	2 / 105	0.13 to 10	20	NA		N	FOD, NSL
	110-82-7	Cyclohexane	2.5 J	2.5 J	ug/L	PM AIRSHAFT 230	1 / 38	0.25 to 1.9	2.5	NA		N	FOD, NSL
	124-48-1	Dibromochloromethane	20	20	ug/L	SW-5(101189)	1 / 110	0.2 to 10	20	0.4	NRWQC	N	FOD
	117-84-0	di-n-octylphthalate	0.3 J	18	ug/L	SW-9(071084)	8 / 111	0.35 to 20	18	NA		N	NTX
	ETH-SOL	Ether solubles	1000	66000	ug/L	Leachate-toe slope(072374)	16 / 16	NA	66000	NA		N	NTX
	100-41-4	Ethylbenzene	16	326	ug/L	Mine Brook	3 / 112	0.18 to 10	326	530	NRWQC	N	FOD, BSL
	98-82-8	Isopropylbenzene	10	10	ug/L	PM AIRSHAFT 230	2 / 44	0.19 to 0.61	10	NA		N	FOD, NSL
	108-87-2	Methylcyclohexane	0.63 J	0.63 J	ug/L	PM AIRSHAFT 230	1 / 38	0.18 to 0.70	0.63	NA		N	FOD, NTX
	75-09-2	Methylene chloride	0.26 JB	86 BG	ug/L	SW-6(071084)	13 / 110	0.2 to 10	86	2.5	NJSWQS	Y	ASL
	91-20-3	Naphthalene	1.9 J	23.7	ug/L	NWRW7(5/11/2011)	2 / 3	4.3 to 4.3	1.9	NA		Y	NSL
	86-30-6	N-Nitrosodiphenylamine	1.1 J	1.1 J	ug/L	samp1199803030	1 / 21	0.22 to 4.3	1.1	3.3	NRWQC	N	FOD, BSL
	95-47-6	o-Xylene	25	550	ug/L	Mine Brook	2 / 22	0.13 to 1	550	NA		Y	NSL
	100-42-5	Styrene	25	25	ug/L	Mine Brook	1 / 75	0.085 to 5	25	100	MCL	N	FOD, BSL
	108-88-3	Toluene	2 J	182	ug/L	NWRW7(5/11/2011)	2 / 110	0.15 to 10	2	1000	MCL	N	FOD, BSL
	1330-20-7	Xylenes	0.36 J	585	ug/L	NWRW7(5/11/2011)	3 / 38	0.13 to 0.25	4.1	10000	MCL	N	BSL
	83-32-9	Acenaphthene	0.168	0.217	ug/L	PM AIRSHAFT 230	2 / 111	0.014 to 20	0.217	670	NRWQC	N	BSL, FOD
	117-81-7	bis(2-Ethylhexyl)phthalate	0.9 JB	9.3	ug/L	SW-PAB-01(6/13/2011)	10 / 111	0.33 to 20	2	1.2	NRWQC	Y	ASL
	84-66-2	Diethyl phthalate	0.2 J	0.2 J	ug/L	SW-15	4 / 111	0.17 to 20	0.2	17000	NRWQC	N	FOD, BSL

TABLE 1c

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Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (3)	COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Surface Water	84-74-2	di-n-butyl phthalate	0.2 JB	0.4 JB	ug/L	SW-15	6 / 111	0.19 to 20	0.4	2000	NRWQC	N	BSL
	57-10-3	Hexadecanoic acid	16	16	ug/L	SW-6(071084)	1 / 1	NA	16	NA		N	NTX
	91-20-3	Naphthalene	0.132	23.7	ug/L	NWRW7(5/11/2011)	5 / 99	0.019 to 20	4.03	NA		N	NSL, FOD
	86-30-6	N-Nitrosodiphenylamine	0.9 J	0.9 J	ug/L	PM AIRSHAFT 230	1 / 100	0.22 to 20	0.9	3.3	NRWQC	N	FOD, BSL
	108-95-2	Phenol	121	121	ug/L	SW-6(071084)	1 / 48	0.58 to 10	121	10000	NRWQC	N	FOD, BSL
	Total Phenols	Total Phenols	68	1700	ug/L	Leachate-toe slope(072374)	9 / 16	NA	1700	NA		N	NTX
	14265-44-2	Ortho-phosphate	100	100	ug/L	Mine Brook Water	1 / 1	NA	100	NA		N	NTX
	7429-90-5	Aluminum, dissolved	10.9 B	51.6 B	ug/L	SR-3-SEEP	5 / 17	7.3 to 26	51.6	NA		Y	NSL
	7429-90-5	Aluminum, total	6.53	8660	ug/L	Cannon_Area(6/6/2011)	65 / 100	1.46 to 200	6890	NA		Y	NSL
	7440-36-0	Antimony, dissolved	3.4 B	3.4 B	ug/L	SW-15 (4/13/2000)	2 / 24	1.3 to 10	3.4	5.6	NRWQC	N	BSL
	7440-36-0	Antimony, total	3.2 B	48	ug/L	SW-13(072590)	11 / 104	0.59 to 500	20.8	5.6	NRWQC	Y	ASL
	7440-38-2	Arsenic, total	0.24	98.2	ug/L	SR3-SW-092309	5 / 110	0.92 to 10	98.2	0.017	NJSWQS	N	FOD
	7440-39-3	Barium, dissolved	11.9 B	418	ug/L	PM AIRSHAFT 230	18 / 24	0.25 to 100	418	2000	MCL	N	BSL
	7440-39-3	Barium, total	7.66	2230	ug/L	SR-3_Area(6/6/2011)	35 / 104	0.25 to 200	633	2000	MCL	N	BSL
	7440-41-7	Beryllium, dissolved	0.5 B	0.5 B	ug/L	PM AIRSHAFT 230	2 / 24	0.13 to 10	0.5	4	MCL	N	BSL
	7440-41-7	Beryllium, total	0.32	0.7 B	ug/L	SR3-SW-092309	5 / 104	0.13 to 10	0.7	4	MCL	N	FOD, BSL
	7440-43-9	Cadmium, total	0.2	100	ug/L	Mine Brook Water	15 / 121	0.17 to 10	100	3.4	NJSWQS	Y	ASL
	7440-70-2	Calcium, dissolved	5430	107000	ug/L	PM AIRSHAFT 230	17 / 17	22 to 44	107000	NA		N	NUT
	7440-70-2	Calcium, total	2300	106000	ug/L	PM AIRSHAFT 230	112 / 115	0.66 to 5000	106000	NA		N	NUT
	16887-00-6	Chloride, total	6000	39000	ug/L	SW-4(040385)	10 / 22	5000 to 5000	39000	250000	NJSWQS	N	BSL
	7440-47-3	Chromium, dissolved	0.48 B	1.8	ug/L	PM AIRSHAFT 230	7 / 17	0.3 to 0.9	1.5	92	NJSWQS	N	BSL
	7440-47-3	Chromium, total	0.41 B	131	ug/L	Cannon_Area(6/6/2011)	17 / 105	0.3 to 50	22.9	92	NJSWQS	N	BSL
	18540-29-9	Chromium (hex), total	5	66	ug/L	Upstream(072374)	2 / 23	10 to 10	66	NA		Y	NSL
	7440-48-4	Cobalt, dissolved	1.9 B	1.9 B	ug/L	CANON-SEEP	1 / 17	0.3 to 50	1.9	NA		Y	NSL
	7440-48-4	Cobalt, total	0.4	7.3 B	ug/L	SR3-SW-092309	4 / 75	0.3 to 50	7.3	NA		N	NSL, FOD
	7440-50-8	Copper, dissolved	2 B	2.5 B	ug/L	PM AIRSHAFT 180	7 / 24	0.85 to 20	2.5	1300	NRWQC	N	BSL
	7440-50-8	Copper, total	1.1	460	ug/L	Upstream(072374)	52 / 145	0.57 to 50	460	1300	NRWQC	N	BSL
	16984-48-8	Fluoride, total	7	220	ug/L	SW-6(071084)	2 / 21	100 to 200	220	NA		N	NUT
	7439-89-6	Iron, dissolved	61.4	110000	ug/L	PM AIRSHAFT 230	16 / 17	12 to 18	110000	NA		Y	NSL
	7439-89-6	Iron, total	12.4	307000	ug/L	SR3-SW-092309	134 / 138	0.47 to 100	307000	NA		Y	NSL
	7439-92-1	Lead, total	1	1390	ug/L	Leachate-toe slope(072374)	37 / 131	0.94 to 50	200	5	NJSWQS	Y	ASL
	7439-92-1	Lead, dissolved	9.3	21.6	ug/L	SW-14(072590)	3 / 21	0.94 to 5	21.6	NA		Y	NSL
	7439-95-4	Magnesium, dissolved	1280 B	17300	ug/L	CANON-SEEP	17 / 17	15 to 37	17300	NA		N	NUT
	7439-95-4	Magnesium, total	1000	37600	ug/L	SW-3(101189)	83 / 94	0.68 to 5000	37600	NA		N	NUT

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Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (3)	COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Surface Water	7439-96-5	Manganese, dissolved	0.9 B	5130	ug/L	CANON-SEEP	17 / 17	0.46 to 0.5	5110	NA		Y	NSL
	7439-96-5	Manganese, total	11	70600	ug/L	Leachate-toe slope(072374)	120 / 139	0.4 to 20	70600	NA		Y	NSL
	7439-97-6	Mercury, dissolved	0.1 B	0.12 B	ug/L	SW-9 (4/13/2000)	4 / 27	0.082 to 0.2	0.12	0.05	NJSWQS	Y	ASL
	7439-97-6	Mercury, total	0.11 B	0.73	ug/L	SW-13(072590)	6 / 108	0.03 to 5	0.73	0.05	NJSWQS	Y	ASL
	7440-02-0	Nickel, dissolved	0.42 B	4.3 B	ug/L	SR4-SW-092309	13 / 24	0.51 to 40	4.3	500	NJSWQS	N	BSL
	7440-02-0	Nickel, total	0.58 B	16.5	ug/L	Cannon_Area(6/6/2011)	25 / 105	0.51 to 50	16	500	NJSWQS	N	BSL
	7727-37-9	Nitrogen, total	50	450	ug/L	SW-7(040385)	9 / 21	50 to 50	450	NA		N	NTX
	7440-09-7	Potassium, dissolved	403 B	8340 B	ug/L	PM AIRSHAFT 230	17 / 17	20 to 170	8340	NA		N	NUT
	7440-09-7	Potassium, total	344	13700	ug/L	SW-7(020190)	55 / 70	20 to 5000	13700	NA		N	NUT
	7782-49-2	Selenium, dissolved	2 B	5.5 B	ug/L	PM AIRSHAFT 230	7 / 24	1.5 to 3.7	5.5	50	MCL	N	BSL
	7782-49-2	Selenium, total	0.84	7.8 B	ug/L	SR3-SW-092309	8 / 104	0.5 to 10	7.8	50	MCL	N	BSL
	7440-22-4	Silver, dissolved	1.9 B	2.7 B	ug/L	PM AIRSHAFT 230	2 / 24	0.3 to 10	2.7	170	NJSWQS	N	BSL
	7440-22-4	Silver, total	0.059	98	ug/L	NUS5	7 / 104	0.3 to 10	98	170	NJSWQS	N	BSL
	7440-23-5	Sodium, dissolved	2080 B	33200	ug/L	PM AIRSHAFT 230	17 / 17	14 to 200	33200	NA		N	NUT
	7440-23-5	Sodium, total	1280	53800	ug/L	SW-3(072590)	85 / 95	5 to 5000	53800	NA		N	NUT
	7440-28-0	Thallium, dissolved	1.95 B	1.95 B	ug/L	PM AIRSHAFT 230	1 / 24	0.17 to 250	1.95	0.24	NRWQC	Y	FOD
	7440-31-5	Tin, total	12.8	513	ug/L	Mine Brook Water	11 / 24	10 to 10	513	NA		Y	NSL
	7440-62-2	Vanadium, total	0.6 B	52.6	ug/L	SR3-SW-092309	8 / 75	0.3 to 250	52.6	NA		Y	NSL
	7440-66-6	Zinc, dissolved	2 B	73	ug/L	PM AIRSHAFT 230	18 / 24	1.4 to 10	73	7400	NRWQC	N	BSL
	7440-66-6	Zinc, total	2.6	2430	ug/L	Leachate-toe slope(072374)	86 / 143	0.5 to 20	2430	7400	NRWQC	N	BSL
	ALK	Alkalinity, total (as CaCO3), total	5600	433000	ug/L	PM AIRSHAFT 230	32 / 32	5000 to 17000	433000	NA		N	NTX
	75-27-4	Bromodichloromethane	4.01	4.01	ug/L	NJWAN_TRTD_1105	1 / 48	0.129 to 10	4.01	0.55	NRWQC	N	FOD
	16887-00-6	Chloride	3000	315000	ug/L	Downstream(072374)	16 / 29	2000 to 20000	315000	250000	NJSWQS	Y	ASL
	67-66-3	Chloroform	22.2	22.2	ug/L	NJWAN_TRTD_1105	1 / 48	0.153 to 10	22.2	5.7	NRWQC	N	FOD
	57-12-5	Cyanide	3	13	ug/L	Leachate-toe slope(072374)	5 / 45	10 to 20	13	140	NRWQC	N	BSL
	124-48-1	Dibromochloromethane	0.43	0.43	ug/L	NJWAN_TRTD_1105	1 / 48	0.189 to 10	0.43	0.4	NRWQC	N	FOD
	HARD-CACO2	Hardness as CaCO2	30000	1400000	ug/L	Leachate-toe slope(072374)	24 / 24	4000 to 4000	1400000	NA		N	NTX
	OILGREASE	HEM Oil and Grease	2300	2300	ug/L	Mine Brook Water	1 / 1	NA	2300	NA		N	NTX
	14797-55-8	Nitrate	140	140	ug/L	SW-MRB-03	1 / 11	110 to 110	140	10000	MCL	N	BSL
	7664-41-7	Nitrogen, Ammonia	1000	20500	ug/L	Leachate stream(093074)	5 / 6	NA	20500	NA		Y	NSL
	NO3NO2N	Nitrogen, Nitrate + Nitrite	140	140	ug/L	SW-MRB-03	1 / 11	100 to 100	140	NA		N	NTX
	PHOS	Phosphate	20	1300	ug/L	Upstream(090574)	16 / 18	NA	1300	NA		N	NTX
	7631-86-9	Silica	2520	5640	ug/L	AA29226	8 / 10	14 to 14	5640	NA		N	NTX
	14808-79-8	Sulfate	5000	50000	ug/L	Leachate-toe slope(072374)	26 / 43	10000 to 10000	50000	NA		N	NTX

TABLE 1c

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - SURFACE WATER

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Potential ARAR/TBC Value	Potential ARAR/TBC Source (3)	COPC Flag (Y/N)	Rationale for Selection or Deletion (4)
Site Surface Water	18496-25-8	Sulfide	500	500	ug/L	SW-6(071084)	1 / 20	100 to 500	500	NA		N	NTX
	SURF	Surfactants	20	30	ug/L	SW-5(040385)	10 / 21	20 to 20	30	NA		N	NTX

Notes:

Concentrations in micrograms per liter (ug/L).

(1) Qualifier codes:

J - concentration estimated below the detection limit.

B - contamination detected in blank.

BI - contamination in trip blank.

BG - concentration in the blank is greater than ½ of the method detection limit and is less than or equal to ½ the concentration detected in a sample; the concentration in the blank is subtracted from the sample.

BN - contamination detected in blank and spiked sample recovery not within control limits.

(2) Maximum detected concentration used for screening.

(3) Codes used for "Potential ARAR/TBC Source":

NRWQC - National Recommended Water Quality Criteria, http://water.epa.gov/scitech/swguidance/waterquality/standards/current/index.cfm

NJSWQS - New Jersey Surface Water Quality Standards, http://www.nj.gov/dep/rules/rules/njac7_9b.pdf

MCL - Maximum Contaminant Level, http://water.epa.gov/drink/contaminants/index.cfm

(4) Codes used for the "Rationale for Selection or Deletion":

ASL - above screening level

BSL - below screening level

NTX - no toxicity data; compound will be discussed qualitatively

NSL - no screening level

NUT - essential nutrient

FOD - frequency of detection below 5%

All site data used for COPC screening.

ARAR - applicable or relevant and appropriate requirement

COPC - constituent of potential concern

EPC - exposure point concentration

TBC - to be considered

NA - not available

TABLE 1d

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - GAME TISSUE

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C)	COPC Flag (Y/N)	Rationale for Selection or Deletion (3)
Site Game Tissue	7429905	Aluminum	0.405	57.6	mg/kg ww	Loc 3-1	16/33	0.383 to 3.53	57.6	NA	Y	NSL
	7440382	Arsenic	0.0778	0.15	mg/kg ww	2C (Muscle)	7/33	0.0354 to 1.67	0.15	NA	Y	NSL
	7440393	Barium	0.0738	31.3	mg/kg ww	Loc 3-1	15/33	0.0621 to 0.072	31.3	NA	Y	NSL
	7440417	Beryllium	0.00232	0.0668	mg/kg ww	S-8	7/33	0.0152 to 0.152	0.0668	NA	Y	NSL
	7440439	Cadmium	0.0129	0.964	mg/kg ww	2B (Liver)	10/33	0.00972 to 0.228	0.964	NA	Y	NSL
	7440702	Calcium	25.1	13800	mg/kg ww	Loc 3-1	33/33	NA	13800	NA	N	NUT
	7440473	Chromium	0.175	1.58	mg/kg ww	Loc 3-1	32/33	0.146 to 0.146	1.58	NA	Y	NSL
	7440484	Cobalt	0.0551	0.0777	mg/kg ww	2A (Liver)	3/33	0.026 to 0.228	0.0777	NA	Y	NSL
	7440508	Copper	0.697	62.4	mg/kg ww	2B (Liver)	33/33	NA	62.4	NA	Y	NSL
	7439896	Iron	6.7	366	mg/kg ww	2C (Liver)	33/33	NA	366	NA	Y	NSL
	7439921	Lead	0.0355	1.15	mg/kg ww	Loc 1-1	6/33	0.031 to 0.758	1.15	NA	Y	NSL
	7439954	Magnesium	116	413	mg/kg ww	Loc 3-1	33/33	NA	413	NA	N	NUT
	7439965	Manganese	0.17	15.5	mg/kg ww	Loc 3-4	18/33	0.286 to 0.463	15.5	NA	Y	NSL
	7440020	Nickel	0.0385	2.68	mg/kg ww	Loc 1-1	26/33	0.0359 to 0.353	2.68	NA	Y	NSL
	7440097	Potassium	1430	5200	mg/kg ww	S-8	33/33	NA	5200	NA	N	NUT
	7782492	Selenium	0.106	1.31	mg/kg ww	Loc 1-2,Loc 3-1	20/33	0.105 to 0.91	1.31	NA	Y	NSL
	7440224	Silver	0.0883	0.0883	mg/kg ww	2B (Liver)	1/33	0.008 to 0.304	0.0883	NA	N	FOD
	7440235	Sodium	319	1320	mg/kg ww	Loc 3-1	33/33	NA	1320	NA	N	NUT
	7440280	Thallium	0.0698	0.0698	mg/kg ww	S-8	1/33	0.0166 to 1.21	0.0698	NA	N	FOD
	7440622	Vanadium	0.095	0.186	mg/kg ww	S-8	3/33	0.0348 to 0.228	0.186	NA	Y	NSL
	7440666	Zinc	8.26	37.4	mg/kg ww	2B (Muscle)	33/33	NA	37.4	NA	Y	NSL
	108952	Phenol	0.0551 J	0.0551 J	mg/kg ww	2A (Muscle)	1/30	0.2 to 4	0.0551	NA	N	FOD
	106445	4-Methylphenol	0.0809 J	0.557	mg/kg ww	2A (Liver)	3/30	0.2 to 4	0.557	NA	Y	NSL
	65850	Benzoic Acid	0.141 J	0.419 J	mg/kg ww	2A (Muscle)	6/6	NA	0.419	NA	Y	NSL
	117817	bis(2-Ethylhexyl)phthalate	0.058 J	0.0897 J	mg/kg ww	2C (Muscle)	2/30	0.201 to 4	0.0897	NA	Y	NSL
	11096825	Aroclor 1260	0.0528	0.0528	mg/kg ww	T-2	1/30	0.00493 to 0.251	0.0528	NA	N	FOD

Notes:

Concentrations in milligrams per kilogram of wet tissue weight (mg/kg ww).

(1) Qualifier codes:

J - concentration estimated below the detection limit.

(2) Maximum detected concentration used for screening.

(3) Codes used for the "Rationale for Selection or Deletion":

NSL - no screening level

NUT - nutrient

FOD - frequency of detection below 5%

All site data used for COPC screening

COPC - constituent of potential concern

EPC - exposure point concentration

NA - not available

TABLE 1e

OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - PLANT TISSUE

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Screening Toxicity Value (N/C)	COPC Flag (Y/N)	Rationale for Selection or Deletion (3)
Site Plant Tissue	7429905	Aluminum	21.4	110	mg/kg ww	080409OD18-C1	25/70	22 to 60	110	NA	Y	NSL
	7440382	Arsenic	0.11	0.93	mg/kg ww	052909OD4-ST1	17/70	0.087 to 1.82	0.93	NA	Y	NSL
	7440393	Barium	0.59	103	mg/kg ww	Loc 2-3	68/70	0.1 to 0.1	103	NA	Y	NSL
	7440439	Cadmium	0.1	5.4	mg/kg ww	080409PM5-C3	46/70	0.099 to 0.485	5.4	NA	Y	NSL
	7440702	Calcium	350 J	3700 J	mg/kg ww	080409PM5-D1	68/70	100 to 100	3700	NA	N	NUT
	7440473	Chromium	0.095	0.648	mg/kg ww	Loc 2-3	33/70	0.087 to 0.456	0.648	NA	Y	NSL
	7440484	Cobalt	0.01	0.3	mg/kg ww	080409OD19-C3	5/70	0.087 to 0.485	0.3	NA	Y	NSL
	7440508	Copper	0.58	5.25	mg/kg ww	Loc 2-3	69/70	0.5 to 0.5	5.25	NA	Y	NSL
	7439896	Iron	25	230	mg/kg ww	080409OD18-C1	31/70	22 to 60	230	NA	Y	NSL
	7439921	Lead	0.011	17.9	mg/kg ww	Loc 2-3	37/70	0.09 to 0.918	17.9	NA	Y	NSL
	7439954	Magnesium	160	810	mg/kg ww	Loc 2-3	69/70	180 to 180	810	NA	N	NUT
	7439965	Manganese	1.6	69	mg/kg ww	080409OD19-C3	70/70	NA	69	NA	Y	NSL
	7440020	Nickel	0.1	2.6	mg/kg ww	080409OD19-C3	66/70	0.087 to 0.1	2.6	NA	Y	NSL
	7440097	Potassium	1300	8000	mg/kg ww	073009OD14-D1	70/70	NA	8000	NA	N	NUT
	7440224	Silver	0.009	0.009	mg/kg ww	060409PM4-ST2	1/70	0.044 to 0.607	0.009	NA	N	FOD
	7440235	Sodium	45	2880	mg/kg ww	Loc 3-1	15/70	0.093 to 170	2880	NA	N	NUT
	7440622	Vanadium	0.2	0.33	mg/kg ww	080409OD18-C1	2/70	0.17 to 0.485	0.33	NA	N	FOD
	7440666	Zinc	2.5	120 J	mg/kg ww	080409PM5-C2	70/70	NA	120	NA	Y	NSL

Notes:

Concentrations in milligrams per kilogram of wet tissue weight (mg/kg ww).

(1) Qualifier codes:

J - concentration estimated below the detection limit.

(2) Maximum detected concentration used for screening.

(3) Codes used for the "Rationale for Selection or Deletion":

NSL - no screening level

NUT - nutrient

FOD - frequency of detection below 5%

All site data used for COPC screening.

COPC - constituent of potential concern

EPC - exposure point concentration

NA - not available

TABLE 2

POTENTIAL CHEMICAL-SPECIFIC ARARs AND TBCs

Media	Authority	Requirement	Requirement Synopsis
Soil	Federal Criteria, Advisories, and Guidance	USEPA Regional Screening Levels (RSLs)	These values are concentrations corresponding to fixed levels of risk (i.e., a hazard quotient of 1 or a lifetime cancer risk of 10E-6, whichever occurs at a lower concentration) in water, air, fish tissue, and soil.
		USEPA Revised Interim Soil Lead Guidance for CERCLA sites and RCRA Corrective Action Facilities (OSWER Directive 9355.4-12)	The screening level for lead in soil for residential use is 400 mg/kg.
		USEPA Region III Biological Technical Assessment Group (BTAG) Screening Levels	Region III has established ecologically based screening levels for remediation sites.
	State Criteria, Advisories, and Guidance	NJDEP Soil Remediation Standards (NJAC 7:26:D, Appendix 1)	These values include residential, nonresidential soil, and impact to groundwater cleanup standards.
Surface Water	Federal Regulatory Requirement	Federal Ambient Water Quality Criteria (AWQC)	Protects aquatic life and human health and was developed for 95 carcinogens and noncarcinogens.
	Federal Criteria, Advisories, and Guidance	USEPA Region III RBCs for Tap Water	Health-protective values for drinking water using four conservation parameters.
	State Regulatory Requirement	Surface Water Quality Standards (SWQS), N.J.A.C. 7:9B et. seq.	Remedial actions resulting in discharge to surface water quality.
		New Jersey Pollutant Discharge Elimination System (NJPDES), N.J.A.C. 7:14A et. seq.	Discharge of contaminated water to the waters of the State.
Groundwater	Federal Regulatory Requirement	Safe Drinking Water Act (SDWA) - Maximum Contaminant Levels (MCLs) (40 CFR 141.11 – 141.16)	MCLs have been promulgated for a number of common organic and inorganic contaminants. These levels regulate the concentration of contaminants in public drinking water supplies based on health effects and technical capabilities. MCLs may also be considered relevant and appropriate for groundwater aquifers potentially used for drinking water. Because New Jersey has developed Groundwater Quality Standards, these will only be considered in the absence of a state standard.

TABLE 2

POTENTIAL CHEMICAL-SPECIFIC ARARs AND TBCs

Media	Authority	Requirement	Requirement Synopsis
Groundwater	Federal Criteria, Advisories, and Guidance	USEPA Region III Risk-Based Concentrations (RBCs) Table	These values are concentrations corresponding to fixed levels of risk (i.e., a hazard quotient of 1 or a lifetime cancer risk of 10^{-6}, whichever occurs at a lower concentration) in tap water, air, fish tissue, and soil.
		USEPA Region IX Preliminary Remediation Goals (PRGs) Table	These values are concentrations corresponding to fixed levels of risk (i.e., a hazard quotient of 1 or a lifetime cancer risk of 10^{-6}, whichever occurs at a lower concentration) in tap water and soil.
		National Secondary Drinking Water Standards (40 CFR 143)	These are welfare-based standards established to protect aesthetic quality of public water supplies (Secondary MCLs).
		USEPA Office of Drinking Water Health Advisories (HAs)	Health advisories are developed from estimated of risk due to consumption of contaminated drinking water, considering noncarcinogenic effects only. Health advisories are considered for contaminants in groundwater that may be used for drinking water.
	State Regulatory Requirement	New Jersey Safe Drinking Water Act – State Maximum Contaminant Levels (MCLs) (N.J.A.C. 7:10-1 et. Seq.)	These regulations set concentration limits for hazardous constituents in groundwater and general requirements for solid waste management units. Because New Jersey has developed Groundwater Quality Standards specific to remediation of contaminated groundwater, these will only be considered in the absence of a GWQS.
		New Jersey Groundwater Quality Standards (GWQS) (N.J.A.C 7:9-6.1 et. Seq.)	New Jersey has promulgated standards for the remediation of contaminated groundwater. Under this program, a CEA establishes an administrative control on an area that does not comply with groundwater quality standards. The CEA administratively prohibits construction of drinking water production wells by circumventing the issuing of a well construction permit in areas where a CEA has been placed.

TABLE 3

POTENTIAL LOCATION-SPECIFIC ARARs AND TBCs

Authority	Requirement	Requirement Synopsis
Federal Regulatory Requirement	**Flood plains**	
	Resource Conservation and Recovery Act (RCRA) – Location Standards (40 CFR 264.18)	This regulation outlines the requirements for constructing a RCRA facility on a 100-year floodplain. The facility must be designed, constructed, operated, and maintained to avoid washout by a 100-year flood, unless waste may be removed safely before floodwater can reach the facility or no adverse effects on human health and the environment would result if washout occurred.
	Executive Order 11988: Floodplain Management (40 CFR 6, Appendix A)	Federal agencies are required to reduce the risk of flood loss, to minimize the impact of floods, and to restore and preserve the natural and beneficial values of floodplains.
	Aquifer Recharge Protection	
	Water Pollution Control Act, Section 309 (c) (Fed. Reg. 2946-2948, Jan. 24, 1984).	This regulation restricts activities, such as landfill, surface impoundment, waste pile, injection well, or land treatment, over the unconsolidated quaternary aquifer or recharges zone or streamflow source zone of such aquifer.
	Wetlands	
	U.S. Army Corps of Engineers Nationwide Permit Program	This program prohibits any activity that adversely affects a wetland if a practicable alternative is available that has less effect.
	Executive Order 11990: Protection of Wetlands (40 CFR 6, Appendix A)	Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.
	Fish and Wildlife	
	Fish and Wildlife Coordination Act (16 USC 661 et seq., 40 CFR 6.302)	Actions that will impact fish and wildlife must include action to protect affected fish and wildlife resources. This law prohibits diversion, channeling, or other activity that modifies a stream or river and affects fish or wildlife.
	Migratory Bird Treaty Act (16 USC 703 *et seq*)	Actions taken or funded which result in the killing, hunting, taking, or capturing or any migratory birds, part, nest, or egg is unlawful.
	Endangered Species Act (Rare, Threatened, or Endangered Species)	
	Endangered Species Act (16 USC 1531 et seq., 50 CFR 402)	This law requires that action be taken to conserve endangered or threatened species. In addition, actions must not destroy or adversely modify critical habitat.

TABLE 3

POTENTIAL LOCATION-SPECIFIC ARARs AND TBCs

Authority	Requirement	Requirement Synopsis
State Regulatory Requirement	**Flood plains**	
	New Jersey Flood Hazard Area Control Regulations (NJAC 7:13)	A facility must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by flooding.
	Wetlands	
	New Jersey Freshwater Protection Act (NJAC 7:7A)	This regulation outlines authorized uses of and prohibited activities in wetlands and requires a permit for construction activities.
	Endangered Species Act (Rare, Threatened, or Endangered Species)	
	New Jersey Endangered and Non-Game Species Conservation Act (NJSA 23:2A-1, NJAC 7:25-4.13 and 7:5C-5.1))	This regulation stipulates that agencies should avoid new construction in areas containing protected species unless there is no practicable alternative.

TABLE 4
POTENTIAL ACTION-SPECIFIC ARARs AND TBCs

Authority	Requirement	Requirement Synopsis
Federal Regulatory Requirement	Clean Air Act (40 CFR 50, 60, and 61)	Engineering controls are required to reduce fugitive dust emissions while performing remedial activities, including continuous application of dust suppressants before, during, and after excavation.
	National Primary and Secondary Ambient Air Quality Standards (40 CFR 50)	Appropriate engineering controls are required to reduce emissions associated with excavation and transportation.
	Institutional Controls – 40 CFR 300.430(a)(a)(iii)(D)	EPA expects to use institutional controls such as water use and deed restrictions to supplement engineering controls as appropriate for short- and long-term management to prevent or limit exposure to hazardous substances, pollutant, or contaminants. Institutional controls may be used during implementation of the remedial action and, where necessary, as a component of the completed remedy." [Nevertheless",] "[t]he use of institutional controls shall not substitute for active response measures as the sole remedy unless such active measures are determined not to be practicable, based on the balancing trade-offs among alternatives that is conducted during the selection of remedy."
	National Pollution Discharge Elimination System (40 CFR 122 – 125)	Permitting is required for pollutant discharge from any point source into U.S. waters.
	RCRA – Identification and Listing of Hazardous Waste (40 CFR 261)	This regulation provides guidance for classifying wastes as hazardous under RCRA.
	RCRA – Land Disposal Restrictions (40 CFR 268.43)	This regulation establishes restrictions for the burial of wastes and hazardous materials. Listed and characteristic hazardous wastes are required to meet Best Demonstrated Available Technology (BDAT) treatment standards.
	USEPA OSWER Publication 9345.3-03FS, January 1992	Investigation-derived wastes generated from remedial activities (e.g., drilling muds, purged water, etc. are required to be properly stored, managed, and disposed. Guidance given in the publication includes waste material containment, collection labeling, etc.
	U.S. Department of Transportation Rules for Transportation of Hazardous Materials (49 CFR 107, 171.1 – 172.558)	This regulation provides requirements for transportation of hazardous waste.

TABLE 4
POTENTIAL ACTION-SPECIFIC ARARs AND TBCs

Authority	Requirement	Requirement Synopsis
State Regulatory Requirement	Remediation Technical Requirements (NJAC 7:26E-3.4)	This regulation outlines requirements of quality assurance for sampling and analysis at remediation sites.
	NJDEP Field Sampling Procedures Manual, August 2005	This manual provides guidance and general industry procedures for sampling.
	Flood Hazard Area Control (N.J.A.C. 7:13-1.1 et seq.) Water Resource Management (N.J.A.C. 7:21) Freshwater Wetland Protection Act Rule (N.J.A.C. 7:7A-9) The regulations require an equivalency permit and correlate with location-specific requirements.	Must comply with the substantive portions of the permit for the following activities: - Development or disturbances in floodplain and wetland area - Dewatering activities - Surface water diversion - Stream encroachment - Soil erosion and sediment control
	RCRA – Division of Waste Management: N.J.A.C. 7:26 Subchapter 3, N.J.A.C. 7:26-3.2(c), -3.2(b), - 3.2(a), -3.2(a)2, -3.2(a)6, N.J.A.C. 7:26-16.4, and N.J.A.C. 7:26-3.4 and 7:26-3.5	Solid waste (IDW) for off-site transportation must obtain proper written approval from the State prior to transporting the waste. Once approved, the transporting vehicle has to be properly registered to handle the waste with appropriate placard.
	RCRA – New Jersey Solid Waste Disposal Regulations (New Jersey Administrative Code [N.J.A.C. 7:26 et. seq.])	On- and off-site storage, treatment, and disposal requirements for solid waste, treatment residues, contaminated soils and contaminated groundwater are specified as are administrative requirements for the remediation of contaminated sites.

TABLE 4

POTENTIAL ACTION-SPECIFIC ARARs AND TBCs

Authority	Requirement	Requirement Synopsis
	New Jersey Hazardous Waste Regulations (NJAC 7:26G)	This regulation establishes hazardous waste identification, manifesting, transport, recordkeeping, and reporting requirements and outlines LDRs.
	Technical Requirements for Site Remediation (NJAC 7:26E)	This regulation specifies the minimum technical requirements to investigate and remediate contamination on any site. The requirements for institutional and engineering controls are specified.
	Site Remediation Reform Act (NJSA 58:10C-1 et.seq.)	This statute establishes the NJDEP licenses site remediation professional (LSRP) program and amends remediation requirements.
	New Jersey Air Pollution Control (NJAC 7:27)	This regulation outlines restrictions and requirements for construction and remedial activities that emit particulate matter into the ambient air. Restrictions for air emissions from treatment technologies and nuisance and odor control are required.
	New Jersey Stormwater Management Regulations (NJAC 7:8)	This regulation establishes design criteria for stormwater control from construction activities, such as maintained pre-development runoff characteristics an reduction of stream channel erosion, sedimentation, and pollution.
	New Jersey Erosion and Sediment Control Regulations (16:25A)	An erosion and sediment control plan must be approved by the Passaic County Soil Conservation District for a disturbed area greater than 5,000 square feet

TABLE 5a
COST ESTIMATE FOR SELECTED REMEDY (ALTERNATIVE 6A) - PETERS MINE PIT AREA

Item Description	Quantity	Unit	Unit Rate	Present Worth Value
I. Site Preparation				
Preparation and Submittal of Deed Notice	1	LS	$5,000.00	$5,000.00
Installation / Improvements of Existing Barrier Fence & Signs	1	LS	$10,000.00	$10,000.00
Mobilization/Demobilization	1	LS	$30,000.00	$30,000.00
Soil Erosion and Sedimentation Controls (Silt Fence, BMPs)	1	LS	$30,000.00	$30,000.00
Site Clearing, Grubbing, Mulching, Stump Disposal	3.1	Acre	$5,000.00	$15,700.00
Surveying Services	3	Day	$1,750.00	$5,300.00
			Subtotal	**$96,000.00**
II. Water Management - Peters Mine Pit Pond - Surface Water				
Surface Water Characterization & Discharge Sampling	20	EA	$1,500.00	$30,000.00
Settling Tank Rentals (6 Settling Tanks)	7	Month	$9,000.00	$63,000.00
Cartridges and Bag Filters	1	LS	$15,000.00	$15,000.00
Furnish, Install, and Remove Water Treatment System and fit for use	7	Month	$20,000.00	$140,000.00
Furnish, Install and Remove Granular Activate Carbon 2 - 2,000 lb. Vessels	1	LS	$22,500.00	$22,500.00
2 - 6-inch Dry-Prime Trash Pump with 400' of hose	7	Month	$1,500.00	$10,500.00
Dewatering - O& M - Filtration Only	7	Month	$25,000.00	$175,000.00
Fuel Consumption (Pumps, Generators, Etc.)	7	Month	$8,500.00	$59,500.00
Discharge Dissapater Pad (Rip-Rap Construction & Removal)	1	LS	$15,000.00	$15,000.00
			Subtotal	**$530,500.00**
III. Excavation, Material Handling & Load Out - Historical Fill Area				
Excavation - Historic Fill Material	22,617	Ton	$22.00	$497,600.00
Excavation - Drums and Paint Sludge Hot Spots (Assume 6 Hot Spots, Each = 100 cy)	900	Ton	$25.00	$22,500.00
Excavation - Sloping/Shoring - Slide Rail System	2	EA	$65,000.00	$130,000.00
Excavation - Dewatering & On-Site Treatment	1	LS	$350,000.00	$350,000.00
Material Handling	23,517	Ton	$7.00	$164,600.00
Material Load-Out Activities	23,517	Ton	$5.00	$117,600.00
Waste Characterization Sampling (1 Sample per 750 CY)	21	EA	$1,500.00	$31,400.00
Odor Control	1	LS	$25,000.00	$25,000.00
Transportation & Disposal (Non-Haz) - 100% of Waste Assumed Non Haz	23,517	Ton	$90.00	$2,116,500.00
			Subtotal	**$3,455,200.00**
IV. Placement of Permeable Soil Cap System - Peters Mine Area				
Sub-Grading	3.1	Acre	$12,500.00	$39,300.00
Importation of Clean Fill Material for Site Grading of Cover System - Postive Drainage Area	91,121	Ton	$20.00	$1,822,400.00
Non-Woven Geotextile (8-ounce)	137,030	SF	$0.55	$75,400.00
Install Cover Soil	60,748	CY	$8.00	$486,000.00
Furnish and Install Topsoil (6-Inches)	2,835	CY	$35.00	$99,200.00
Site Grading & Surveying	3.1	Acre	$5,000.00	$15,700.00
Hydro-Seeding/stabilization	137,030	SF	$0.25	$34,300.00
Erosion Mat	137,030	SF	$0.50	$68,500.00
Supply and Installation Plantings/Vegetation	3.1	Acre	$50,000.00	$157,300.00
			Subtotal	**$2,798,100.00**
V. Wetlands Mitigation/Migration - New Construction				
Mobilization/Demobilization	1.0	LS	$20,000.00	$20,000.00
Wetlands Construction	3.1	Acre	$15,000.00	$47,200.00
Supply and Installation Plant Material	3.1	Acre	$10,000.00	$31,500.00
Water Supply	3.1	Acre	$3,000.00	$9,400.00
Re-install Natural/Vegative Fence or Boulder Field	1,100	LF	$75.00	$82,500.00
Apply NJDEP Seed Mix (Assume 30% overage)	178,140	SF	$0.20	$35,600.00
Re-Planting after Year 1(Assume 20%)	0.63	Acre	$10,000.00	$6,300.00
			Subtotal	**$232,500.00**
VI. O&M				
Annual Inspection and Reporting	30	EA	$1,500.00	$45,000.00
Five Year Review	6	EA	$15,000.00	$90,000.00
O&M (2.5 % of soil cover installation, 5-year cycle)	6	EA	$125,000.00	$750,000.00
			Subtotal	**$885,000.00**
VII. Laboratory				
Clean Fill QA/QC Sampling (1 per 750 Cubic Yards)	81	EA	$750.00	$60,700.00
Topsoil QA/QC Sampling (1 per 500 Cubic Yards)	6	EA	$750.00	$4,300.00
Post Excavation Sampling	0	EA	$750.00	$0.00
			Subtotal	**$65,000.00**
VIII. Long Term Groundwater (GW) Monitoring				
Classification Exemption Area (CEA) Application & Permitting	0	LS	$10,000.00	$0.00
NJDEP's Biennial Certification/Reporting	15	EA	$5,000.00	$75,000.00
Quarterly GW Sampling & Reporting Events	20	EA	$35,000.00	$370,800.00
			Subtotal	**$445,800.00**
			Subtotal (I through VIII)	**$8,508,100.00**
IX. Implementation Costs				
Engineering, Designs/Plans	1	LS	$150,000.00	$150,000.00
Wetland Mitigation Permitting & Design	1	LS	$50,000.00	$50,000.00
Administration and Legal (1% of Capital Costs)	1	LS	$71,800.00	$71,800.00
Remedial Design	1	LS	$45,000.00	$45,000.00
Procurement (0.5% of Capital Costs)	1	LS	$35,900.00	$35,900.00
Construction Management (1.5% of Capital Costs)	1	LS	$107,700.00	$107,700.00
Completion Report	1	LS	$25,000.00	$25,000.00
Cost Contingency (25% of Capital Costs)	1	LS	$1,794,300.00	$1,794,300.00
O&M Contingency (15% of O&M Costs)	1	LS	$132,800.00	$132,800.00
			Subtotal	**$2,412,500.00**
			Total	**$10,920,600**

Present worth costs calculated using an interest rate of 7%

TABLE 5b
COST ESTIMATE FOR THE SELECTED REMEDY (ALTERNATIVE 3A) - CANNON MINE PIT AREA

Item Description	Quantity	Unit	Unit Rate	Present Worth Value
I. Administrative Actions				
Preparation and Submittal of Deed Notice	1	LS	$5,000.00	$5,000.00
Preparation and Submittal of CEA	0	LS	$40,000.00	$0.00
Installation / Improvements of Existing Barriers & Signs	1	LS	$20,000.00	$20,000.00
			Subtotal	**$25,000.00**
II. Site Preparation				
Mobilization/Demobilization	1	LS	$30,000.00	$30,000.00
Soil Erosion and Sedimentation Controls (Silt Fence, BMPs)	1	LS	$7,500.00	$7,500.00
Site Clearing, Grubbing, Mulching, Stump Disposal (includes cap area and scraped area)	1.0	Acre	$25,000.00	$26,000.00
Surveying Services	3	Day	$1,750.00	$5,300.00
			Subtotal	**$68,800.00**
III. Drum Removal				
Excavation and Removal of Buried Drums (Level B)	5	DAY	$7,500.00	$37,500.00
Over Pack Drums (Assumes 30 Buried Drums)	30	EA	$75.00	$2,300.00
Drum/Waste Characterization Sampling & Profiling	30	EA	$650.00	$19,500.00
Transportation & Disposal (Hazardous Waste - 50% of Drums)	15	EA	$225.00	$3,400.00
Transportation & Disposal (Non-Hazardous Waste - 50% of Drums)	15	EA	$150.00	$2,300.00
			Subtotal	**$65,000.00**
IV. Placement of Soil Cover System - Cannon Mine Pit				
Sub-Grading (includes cap area and scraped area)	1.0	Acre	$12,500.00	$13,000.00
Relocation of Shallow Rubbish - Cannon Mine & New London Pit Area(s)	1,815	CY	$15.00	$27,300.00
Furnish Cover Soil (Select Fill) (1.5-ft contoured layer)	6,993	Ton	$20.00	$139,900.00
Install Cover Soil (Select Fill) (1.5 foot contoured layer)	4,662	CY	$8.00	$37,300.00
Furnish and Install Topsoil (0.5-foot)	846	CY	$38.00	$32,200.00
Air Monitoring	1	LS	$20,000.00	$20,000.00
Dust Controls	1	LS	$20,000.00	$20,000.00
Vibration Monitoring	1	LS	$30,000.00	$30,000.00
Site Grading & Surveying (includes cap area and scraped area)	1.0	Acre	$18,000.00	$18,700.00
Hydro-Seeding/stabilization (assumes 20% overage)	45,175	SF	$0.25	$11,300.00
Erosion Mat (assumes 20% overage)	45,175	SF	$0.50	$22,600.00
As-Builts / Surveying	1	LS	$15,000.00	$15,000.00
			Subtotal	**$387,300.00**
V. O&M, Annual Inspection and Five Year Review				
Annual Inspection and Reporting	30	EA	$1,500.00	$18,600.00
Five Year Review	6	EA	$20,000.00	$95,300.00
O&M (2.5 % of soil cover installation, 5-year cycle)	6	EA	$10,000.00	$47,700.00
			Subtotal	**$161,600.00**
VI. Laboratory				
Clean Fill QA/QC Sampling (1 per 750 Cubic Yards)	7	EA	$750.00	$5,300.00
Topsoil QA/QC Sampling (1 per 500 Cubic Yards)	2	EA	$750.00	$1,500.00
			Subtotal	**$6,800.00**
VII. Long Term Groundwater (GW) Monitoring				
NJDEP's Biennial Certification	15	EA	$5,000.00	$45,500.00
GW Sampling & Reporting Events	5	EA	$35,000.00	$143,500.00
			Subtotal	**$189,000.00**
			Subtotal (I through VII)	**$903,500.00**
VIII. Implementation Costs				
Engineering, Designs/Plans	1	LS	$75,000.00	$75,000.00
Administration and Legal (5% of Capital Costs)	1	LS	$27,700.00	$27,700.00
Remedial Design Work Plan	1	LS	$45,000.00	$45,000.00
Procurement (5% of Capital Costs)	1	LS	$27,700.00	$27,700.00
Construction Management (15% of Capital Costs)	1	LS	$83,000.00	$83,000.00
Completion Report	1	LS	$25,000.00	$25,000.00
Cost Contingency (25% of Capital Costs)	1	LS	$138,300.00	$138,300.00
O&M Contingency (15% of O&M Costs)	1	LS	$24,300.00	$24,300.00
			Subtotal	**$446,000.00**
			Total	**$1,349,500**

Present worth costs calculated using an interest rate of 7%

TABLE 5c
COST ESTIMATE FOR SELECTED REMEDY (ALTERNATIVE 5A) - O'CONNOR DISPOSAL AREA

Item Description	Quantity	Unit	Unit Rate	Present Worth Value
I. Administrative Actions				
Preparation and Submittal of Deed Notice	1	LS	$5,000.00	$5,000.00
Preparation and Submittal of CEA	0	LS	$40,000.00	$0.00
Installation / Improvements of Existing Barriers & Signs	1	LS	$75,000.00	$75,000.00
			Subtotal	**$80,000.00**
II. Site Preparation				
Mobilization/Demobilization	1	LS	$200,000.00	$200,000.00
Soil Erosion and Sedimentation Controls (Silt Fence, BMPs)	1	LS	$65,000.00	$65,000.00
Relocation of Water Main /Water Service Along Peters Mine Road)	1	LS	$18,000.00	$18,000.00
Site Clearing, Grubbing, Mulching, Stump Disposal (Includes cap area and scraped area)	13.6	Acre	$5,500.00	$74,700.00
Surveying Services	5	Day	$1,760.00	$8,800.00
			Subtotal	**$366,500.00**
III. Excavation, Material Handling & Load Out				
Excavation of Debris/Fill Material	106,407	Ton	$20.00	$2,128,100.00
Excavation of Mine Tailings	169,013	Ton	$20.00	$3,380,300.00
Construction Access Ramps / Structural - Assumes no sheetpile required	1	LS	$50,000.00	$50,000.00
Decontamination Areas and Activities	1	LS	$35,000.00	$35,000.00
Stockpile Management Area & Logistics	1	LS	$65,000.00	$65,000.00
Material Handling - Debris/Fill Material	106,407	Ton	$3.00	$319,200.00
Material Handling - Mine Tailings	169,013	Ton	$3.00	$507,000.00
Material Load Out and Relocation of Mine Tailings to PMP/CMP	112,675	CY	$10.00	$1,126,800.00
Material Load-Out Activities - Debris/Fill Material	70,938	CY	$5.00	$354,700.00
Waste Characterization Sampling (1 Sample per 750 CY)	245	EA	$2,500.00	$612,000.00
Air Monitoring	1	LS	$250,000.00	$250,000.00
Dust Controls	1	LS	$30,000.00	$30,000.00
Transportation & Disposal - Non Haz Tree Root Balls (qty. 20 roll-offs)	20	Each	$1,200.00	$24,000.00
Transportation & Disposal (Haz) - 10% of Waste Is Haz	10,641	Ton	$260.00	$2,766,600.00
Transportation & Disposal (Non Haz) - 90% of Waste Is Non Haz	95,766	Ton	$90.00	$8,619,000.00
			Subtotal	**$20,267,700.00**
IV. Diversion & Water Management				
Park Brook - Diversion Berm - (HDPE Lined w/ Super Sacks)	500	LF	$65.00	$32,500.00
Temporary Slurry/Grout Wall (300 ft Long x 15 ft Deep x 18 in. Wide)	4,500	VSF	$8.00	$36,000.00
Temporary Gravity Groundwater Collection Trenches & Piping	1	LS	$45,000.00	$45,000.00
Miscellaneous Construction Dewatering - Sumps, Frack Tanks, Etc.	1	LS	$50,000	$50,000.00
Operation & Maintenance of the On-Site Water Treatment System	1	LS	$25,000	$25,000.00
			Subtotal	**$188,500.00**
V. Site Restoration - O'Connor Disposal Area				
Furnish Cover Soil (Select Fill)	45,903	CY	$38.00	$1,744,300.00
Furnish and Install Topsoil - 6 in. thickness	11,138	CY	$38.00	$423,300.00
Site Grading & Surveying (Includes cap area and scraped area)	13.6	Acre	$8,000.00	$108,600.00
Hydro-Seeding/stabilization	591,384	SF	$0.50	$295,700.00
Erosion Mat	591,384	SF	$0.25	$147,800.00
			Subtotal	**$2,719,700.00**
VI. Wetlands Mitigation Restablishment at O'Connor				
Fine Grading	7.2	Acre	$15,000.00	$108,100.00
Supply and Installation Plant Material	7.2	Acre	$10,000.00	$72,100.00
Water Supply	7.2	Acre	$3,000.00	$21,600.00
Deer Exclusion Fencing (6 ft high)	2,600	LF	$10.00	$26,000.00
Apply NJDEP Seed Mix (assume 30% increase)	408,200	SF	$0.25	$102,100.00
Re-Planting after Year 1 (assume 20%)	1.4	Acre	$10,000.00	$14,400.00
			Subtotal	**$344,300.00**
VII. Laboratory				
Topsoil QA/QC Sampling (1 per 500 CY)	22	EA	$750.00	$16,700.00
Clean Fill QA/QC Sampling (1 per 500 CY)	61	EA	$750.00	$45,900.00
Post Excavation Sampling	917	EA	$550.00	$504,400.00
			Subtotal	**$567,000.00**
VIII. Long Term Groundwater (GW) Monitoring				
NJDEP's Biennial Certification	15	EA	$5,000.00	$45,600.00
GW Sampling & Reporting Events	5	EA	$30,000.00	$123,100.00
			Subtotal	**$168,700.00**
			Subtotal (I through VIII)	**$24,702,400.00**
IX. Implementation Costs				
Engineering, Designs/Plans	1	LS	$75,000.00	$75,000.00
Administration and Legal	1	LS	$25,000.00	$25,000.00
Remedial Design Work Plan	1	LS	$45,000.00	$45,000.00
Procurement	1	LS	$50,000.00	$50,000.00
Construction Management	1	LS	$1,550,000.00	$1,550,000.00
Completion Report	1	LS	$25,000.00	$25,000.00
Cost Contingency (25% of Capital Costs)	1	LS	$6,133,500.00	$6,133,500.00
			Subtotal	**$7,903,500.00**
			Total	**$32,605,900**

Present worth cost calculated using an interest rate of 7%

TABLE 5d

COST ESTIMATE FOR THE CONTINGENCY REMEDY (ALTERNATIVE 4A) - O'CONNOR DISPOSAL AREA

Item Description	Quantity	Unit	Unit Rate	Present Worth Value
I. Administrative Actions				
Preparation and Submittal of Deed Notice	1	LS	$5,000.00	$5,000.00
Preparation and Submittal of CEA	0	LS	$40,000.00	$0.00
Installation / Improvements of Existing Barriers & Signs	1	LS	$75,000.00	$75,000.00
			Subtotal	**$80,000.00**
II. Site Preparation				
Mobilization/Demobilization	1	LS	$150,000.00	$150,000.00
Soil Erosion and Sedimentation Controls (Silt Fence, BMPs)	1	LS	$50,000.00	$50,000.00
Site Clearing, Grubbing, Mulching, Stump Disposal (includes cap area and scraped area)	13.5	Acre	$7,500.00	$101,300.00
Surveying Services	5	Day	$1,750.00	$8,800.00
			Subtotal	**$310,100.00**
III. Placement of Soil Cover System - O'Connor Disposal Area				
Sub-Grading (includes cap area)	13.5	Acre	$12,500.00	$168,800.00
Relocation of Material to Cap Area	20,551	CY	$15.00	$308,300.00
Furnish and Install Non-Woven Geotextile (8-ounce)	358,532	SF	$0.55	$197,200.00
Furnish Cover Soil - (Select Fill) (1.5 ft contoured layer)	29,878	Ton	$18.00	$537,800.00
Install Cover Soil (Select Fill) (1.5 ft contoured layer)	19,919	CY	$8.00	$159,400.00
Furnish and Install Topsoil - 6 in. thickness	10,892	CY	$38.00	$413,900.00
Air Monitoring	1	LS	$50,000.00	$50,000.00
Dust Controls	1	LS	$50,000.00	$50,000.00
Site Grading & Surveying (includes cap area and scraped area)	13.5	Acre	$8,000.00	$108,000.00
Hydro-Seeding/stabilization	588,203	SF	$0.25	$147,100.00
Erosion Mat	588,203	SF	$0.50	$294,100.00
As-Builts / Surveying	1	LS	$15,000.00	$15,000.00
			Subtotal	**$2,449,600.00**
IV. Wetlands Mitigation Re-Establishment at O'Connor				
Fine Grading	4.5	Acre	$15,000.00	$67,000.00
Supply and Installation Plant Material	4.5	Acre	$10,000.00	$44,600.00
Water Supply	4.5	Acre	$3,000.00	$13,400.00
Deer Exclusion Fencing (6 ft high)	2,600	LF	$10.00	$26,000.00
Apply NJDEP Seed Mix (assume 30% increase)	252,829	SF	$0.25	$63,200.00
Re-Planting after Year 1 (assume 20%)	0.9	Acre	$10,000.00	$8,900.00
			Subtotal	**$223,100.00**
V. Wetlands Mitigation/Migration - New Construction				
Mobilization/Demobilization	1.0	LS	$35,000.00	$35,000.00
Wetlands Construction	4.5	Acre	$15,000.00	$67,000.00
Supply and Installation Plant Material	4.5	Acre	$10,000.00	$44,600.00
Water Supply	4.5	Acre	$3,000.00	$13,400.00
Deer Exclusion Fencing (6 ft high)	1,000	LF	$4.00	$4,000.00
Apply NJDEP Seed Mix (Assume 30% overage)	252,829	SF	$0.20	$50,600.00
Re-Planting after Year 1(Assume 20%)	0.89	Acre	$10,000.00	$8,900.00
			Subtotal	**$223,500.00**
VI. O&M, Annual Inspection and Five Year Review				
Annual Inspection and Reporting	30	EA	$1,500.00	$18,700.00
Five Year Review	6	EA	$20,000.00	$95,400.00
O&M (2.5 % of soil cover installation, 5-year cycle)	6	EA	$30,000.00	$143,000.00
			Subtotal	**$257,100.00**
VII. Laboratory				
Clean Fill QA/QC Sampling (1 per 750 CY)	27	EA	$750.00	$20,300.00
Topsoil QA/QC Sampling (1 per 500 CY)	15	EA	$750.00	$11,300.00
			Subtotal	**$31,600.00**
VIII. Long Term Groundwater (GW) Monitoring				
NJDEP's Biennial Certification	15	EA	$5,000.00	$45,600.00
GW Sampling & Reporting Events	5	EA	$35,000.00	$143,600.00
			Subtotal	**$189,200.00**
			Subtotal (I through VIII)	**$3,764,200.00**
IV. Implementation Costs				
Engineering, Designs/Plans	1	LS	$75,000.00	$75,000.00
Administration and Legal	1	LS	$25,000.00	$25,000.00
Remedial Design Work Plan	1	LS	$45,000.00	$45,000.00
Procurement	1	LS	$50,000.00	$50,000.00
Construction Management (15% of Capital Costs)	1	LS	$497,700.00	$497,700.00
Completion Report	1	LS	$25,000.00	$25,000.00
Cost Contingency (25% of Capital Costs)	1	LS	$829,500.00	$829,500.00
O&M Contingency (15% of O&M Costs)	1	LS	$38,600.00	$38,600.00
			Subtotal	**$1,585,800.00**
			Total	$5,350,000

Present worth costs calculated using an interest rate of 7%

TABLE 6

NEW JERSEY RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARDS FOR CHEMICALS OF POTENTIAL CONCERN IN SOIL

CHEMICAL OF POTENTIAL CONCERN	RESIDENTIAL DIRECT CONTACT SOIL STANDARD (mg/kg)
Benzene	2.0
Chlorobenzene	510
Ethylbenzene	7800
Trichloroethene	7.0
Vinyl Chloride	0.7
Xylenes	12000
Benzo(a)anthracene	0.6
Benzo(a)pyrene	0.2
Benzo(b)fluoranthene	0.6
Benzo(k)fluoranthene	6.0
Bis(2-ethylhexyl)phthalate	35
Chrysene	62
Dibenzo(a,h)anthracene	0.2
Indeno(1,2,3-cd)pyrene	0.6
Naphthalene	6.0
Dieldrin	0.04
Polychlorinated biphenyls (PCBs)	0.2
Aluminum	78000
Antimony	31
Arsenic	19
Barium	16000
Cadmium	78
Cobalt	1600
Copper	3100
Lead	400
Manganese	11000
Mercury	23
Nickel	1600
Thallium	5
Vanadium	78
Zinc	23000

APPENDIX III – Risk Assessment Tables

TABLE 1-1

SELECTION OF EXPOSURE PATHWAYS

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soil	Soil	PMP Area	Walker/hiker/dog walker	Adult	Ingestion	Quantitative	All current exposure pathways analyzed. Zoning of the PMP Area as Conservation Land is assumed to preclude future development for residential or commercial/industrial purposes.
						Dermal	Quantitative	
					Youth	Ingestion	Quantitative	
						Dermal	Quantitative	
					Young Child	Ingestion	Quantitative	
						Dermal	Quantitative	
				Outdoor Worker	Adult	Ingestion	Quantitative	
						Dermal	Quantitative	
		Dust	PMP Area	Walker/hiker/dog walker	Adult	Inhalation	Quantitative	
					Youth	Inhalation	Quantitative	
					Young Child	Inhalation	Quantitative	
				Outdoor Worker	Adult	Inhalation	Quantitative	
	Sediment	Sediment	Streams and Surface Water in PMP Area	Wader	Adult	Ingestion	Quantitative	
						Dermal	Quantitative	
					Youth	Ingestion	Quantitative	
						Dermal	Quantitative	
					Young Child	Ingestion	Quantitative	
						Dermal	Quantitative	
	Surface Water	Surface Water	Streams and Surface Water in PMP Area	Wader	Adult	Ingestion	Quantitative	
						Dermal	Quantitative	
					Youth	Ingestion	Quantitative	
						Dermal	Quantitative	
					Young Child	Ingestion	Quantitative	
						Dermal	Quantitative	
	Game Tissue	Game Tissue	PMP Area	Hunter	Adult	Ingestion	Quantitative	
					Youth	Ingestion	Quantitative	
					Young Child	Ingestion	Quantitative	
	Plant Tissue	Plant Tissue	PMP Area	Hunter	Adult	Ingestion	Quantitative	
					Youth	Ingestion	Quantitative	
					Young Child	Ingestion	Quantitative	

TABLE 1-2

SELECTION OF EXPOSURE PATHWAYS

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soil	Soil	CMP Area	Walker/hiker/dog walker	Adult	Ingestion	Quantitative	All current and potential future exposure pathways analyzed.
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
				Outdoor Worker	Adult	Ingestion		
						Dermal		
		Dust	CMP Area	Walker/hiker/dog walker	Adult	Inhalation		
					Youth	Inhalation		
					Young Child	Inhalation		
				Outdoor Worker	Adult	Inhalation		
	Game Tissue	Game Tissue	CMP Area	Hunter	Adult	Ingestion		
					Youth	Ingestion		
					Young Child	Ingestion		
	Plant Tissue	Plant Tissue	CMP Area	Hunter	Adult	Ingestion		
					Youth	Ingestion		
					Young Child	Ingestion		
Future Only	Soil	Soil	CMP Area	Future Resident	Adult	Ingestion		
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
				Future Outdoor Worker	Adult	Ingestion		
						Dermal		
		Dust	CMP Area	Future Resident	Adult	Inhalation		
					Youth	Inhalation		
					Young Child	Inhalation		
				Future Outdoor Worker	Adult	Inhalation		

TABLE 1-3

SELECTION OF EXPOSURE PATHWAYS

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Soil	Soil	OCDA	Walker/hiker/dog walker	Adult	Ingestion	Quantitative	All current exposure pathways analyzed.
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
				Outdoor Worker	Adult	Ingestion		
						Dermal		
		Dust	OCDA	Walker/hiker/dog walker	Adult	Inhalation		
					Youth	Inhalation		
					Young Child	Inhalation		
				Outdoor Worker	Adult	Inhalation		
	Sediment	Sediment	Streams and Surface Water in OCDA	Wader	Adult	Ingestion		
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
	Surface Water	Surface Water	Streams and Surface Water in OCDA	Wader	Adult	Ingestion		
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
	Game Tissue	Game Tissue	OCDA	Hunter	Adult	Ingestion		
					Youth	Ingestion		
					Young Child	Ingestion		
	Plant Tissue	Plant Tissue	OCDA	Hunter	Adult	Ingestion		
					Youth	Ingestion		
					Young Child	Ingestion		
Future Only	Soil	Soil	OCDA	Future Resident	Adult	Ingestion		
						Dermal		
					Youth	Ingestion		
						Dermal		
					Young Child	Ingestion		
						Dermal		
		Dust	OCDA	Future Resident	Adult	Inhalation		
					Youth	Inhalation		
					Young Child	Inhalation		

TABLE 2-1a

EXPOSURE POINT CONCENTRATION SUMMARY - SOIL

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minumum Concentration (Qualifier)		Maximum Concentration (Qualifier)		Detection Frequency	Exposure Point Concentration			
										Value (2)	Units	Statistic (3)	Rationale
PMP Area	Benzene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Chlorobenzene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Ethylbenzene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Xylene, -m,p	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Xylenes	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Benzo(a)anthracene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Benzo(a)pyrene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Chrysene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Naphthalene	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	Dieldrin	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	PCB 1242	mg/kg	ND	ND	ND		ND		0 / 4	NA	NA	NA	NA
	PCB 1248	mg/kg	ND	ND	ND		ND		0 / 4	NA	NA	NA	NA
	PCB 1254	mg/kg	ND	ND	ND		ND		0 / 4	NA	NA	NA	NA
	PCB 1260	mg/kg	ND	ND	ND		ND		0 / 4	NA	NA	NA	NA
	Aluminum	mg/kg	7.5E+03	NA	3.0E+03	J	1.1E+04	J	4 / 4	11000	mg/kg	Maximum	Only 4 Samples
	Antimony	mg/kg	4.0E+00	NA	1.3E+01	BJ	1.3E+01	BJ	1 / 4	12.7	mg/kg	Maximum	Only 4 Samples
	Arsenic	mg/kg	2.3E+01	NA	4.1E+00		4.4E+01		4 / 4	43.9	mg/kg	Maximum	Only 4 Samples
	Barium	mg/kg	3.6E+01	NA	1.8E+01	BJ	5.2E+01	BJ	4 / 4	52	mg/kg	Maximum	Only 4 Samples
	Cadmium	mg/kg	5.0E-01	NA	1.4E+00	B	1.4E+00	B	1 / 4	1.4	mg/kg	Maximum	Only 4 Samples
	Chromium	mg/kg	1.5E+01	NA	6.4E+00	BJ	2.2E+01		4 / 4	21.5	mg/kg	Maximum	Only 4 Samples
	Cobalt	mg/kg	1.1E+01	NA	7.9E+00		1.3E+01	B	4 / 4	12.7	mg/kg	Maximum	Only 4 Samples
	Copper	mg/kg	3.0E+01	NA	2.3E+01	B	4.3E+01		4 / 4	43.3	mg/kg	Maximum	Only 4 Samples
	Iron	mg/kg	4.4E+04	NA	1.9E+04	J	9.2E+04	J	4 / 4	91800	mg/kg	Maximum	Only 4 Samples
	Lead	mg/kg	9.9E+01	NA	1.6E+01	J	3.2E+02	J	4 / 4	99.2	mg/kg	Arithmetic Mean	Lead
	Manganese	mg/kg	2.9E+02	NA	2.2E+02	J	3.5E+02	J	4 / 4	351	mg/kg	Maximum	Only 4 Samples
	Mercury	mg/kg	1.2E-01	NA	3.2E-02		1.8E-01		4 / 4	0.18	mg/kg	Maximum	Only 4 Samples
	Nickel	mg/kg	1.5E+01	NA	1.4E+01	B	1.6E+01		4 / 4	15.9	mg/kg	Maximum	Only 4 Samples
	Thallium	mg/kg	7.2E-02	NA	1.1E-01	B	1.1E-01	B	1 / 3	0.11	mg/kg	Maximum	Only 3 Samples
	Vanadium	mg/kg	8.2E+01	NA	2.4E+01		1.7E+02		4 / 4	166	mg/kg	Maximum	Only 4 Samples
	Zinc	mg/kg	3.8E+01	NA	3.1E+01	J	4.4E+01		4 / 4	44	mg/kg	Maximum	Only 4 Samples

Notes:

Qualifier codes:

J - concentration estimated below the detection limi

B - compound detected in blank.

(1) ProUCL verion 4.00.05 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

ND - Not Detected. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not detected in PMP Area data.

NA - Not Available. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not analyzed for in PMP Area data.

(2) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead in soil.

(3) Only 4 samples available, therefore the 95th% UCL could not be calculated and the maximum detect concentration was chosen as the EPC.

COPC - constituent of potential concern

EPC - exposure point concentration

mg/kg - milligrams per kilogram

NA - not available or not applicable

PMP - Peters Mine Pit

TABLE 2-1b

EXPOSURE POINT CONCENTRATION SUMMARY - SEDIMENT

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Detection Frequency	Exposure Point Concentration			
								Value	Units	Statistic	Rationale
PMP Area	Chlorobenzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)anthracene	mg/kg	9.4E-02	3.0E-02	4.5E-03	4.0E-02	6 / 8	0.0302	mg/kg	95th % UCL	UCL < Max
	Benzo(a)pyrene	mg/kg	8.6E-02	1.3E-02	4.3E-03	1.8E-02	5 / 8	0.0133	mg/kg	95th % UCL	UCL < Max
	Benzo(b)fluoranthene	mg/kg	9.7E-02	3.1E-02	1.1E-02	3.8E-02	6 / 8	0.0308	mg/kg	95th % UCL	UCL < Max
	Aluminum	mg/kg	5.4E+03	6.0E+03	3.4E+03	6.5E+03	9 / 9	6019	mg/kg	95th % UCL	UCL < Max
	Antimony	mg/kg	2.7E+00	NA	4.1E+00 B	4.1E+00 B	1 / 10	4.1	mg/kg	Maximum	Only 1 Detect
	Arsenic	mg/kg	3.7E+01	1.3E+02	1.0E+00	7.2E+01	10 / 10	72	mg/kg	Maximum	UCL > Max
	Chromium	mg/kg	1.0E+01	1.2E+01	7.7E+00	1.4E+01 B	8 / 11	12.25	mg/kg	95th % UCL	UCL < Max
	Cobalt	mg/kg	9.5E+00	1.1E+01	9.6E+00 B	1.3E+01 B	6 / 9	11.02	mg/kg	95th % UCL	UCL < Max
	Iron	mg/kg	3.2E+04	4.3E+04	4.4E+03	6.0E+04	9 / 9	43134	mg/kg	95th % UCL	UCL < Max
	Lead	mg/kg	2.5E+01	3.7E+01	1.2E+01 B	6.4E+01	8 / 10	25	mg/kg	Arithmetic Mean	Lead
	Manganese	mg/kg	2.2E+02	2.8E+02	7.2E+01	3.3E+02	9 / 9	280.6	mg/kg	95th % UCL	UCL < Max
	Vanadium	mg/kg	7.2E+01	9.5E+01	2.4E+01	1.1E+02	7 / 9	95.13	mg/kg	95th % UCL	UCL < Max

Notes:

Qualifier codes:

B - Result is greater than method detection limit but less than reporting limit.

(1) ProUCL verion 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

NA - Not Available. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation.

COPC - constituent of potential concern

EPC - exposure point concentration

mg/kg - milligrams per kilogram

PMP - Peters Mine Pit

TABLE 2-1c

EXPOSURE POINT CONCENTRATION SUMMARY - SURFACE WATER

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier) (2)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value	Units	Statistic	Rationale
PMP Area	1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0/10	NA	NA	NA	NA
	Acetone	ug/L	7.7E+00	NA	2.1E+01	2.1E+01	1/10	20.6	ug/L	Maximum	Only 1 Detect
	Benzene	ug/L	3.8E+00	NA	3.1E+01	3.1E+01	1/10	31	ug/L	Maximum	Only 1 Detect
	Chlorodifluoromethane	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Methylene chloride	ug/L	6.7E-01	NA	2.0E+00 J	2.0E+00 J	1/10	2	ug/L	Maximum	Only 1 Detect
	Naphthalene	ug/L	ND	ND	ND	ND	0/8	NA	NA	NA	NA
	o-Xylene	ug/L	ND	ND	ND	ND	0/8	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	ug/L	ND	ND	ND	ND	0/10	NA	NA	NA	NA
	Aluminum, total	ug/L	2.1E+02	6.4E+02	2.6E+01 B	9.0E+02	7/9	642	ug/L	95th % UCL	UCL < Max
	Antimony, total	ug/L	5.1E+00	NA	2.1E+01	2.1E+01	1/10	20.6	ug/L	Maximum	Only 1 Detect
	Cadmium, total	ug/L	ND	ND	ND	ND	0/10	NA	NA	NA	NA
	Chromium (hex), total	ug/L	ND	ND	ND	ND	0/1	NA	NA	NA	NA
	Cobalt, dissolved	ug/L	ND	ND	ND	ND	0/5	NA	NA	NA	NA
	Iron, total	ug/L	1.9E+04	1.2E+05	1.4E+02	1.4E+05	9/9	121318	ug/L	95th % UCL	UCL < Max
	Lead, total	ug/L	5.6E+00	4.3E+00	4.1E+00	4.3E+00	2/7	5.6	ug/L	Arithmetic Mean	Lead
	Manganese, total	ug/L	4.5E+02	2.0E+03	1.1E+01	2.6E+03	9/9	1979	ug/L	95th % UCL	UCL < Max
	Mercury, total	ug/L	1.3E-01	NA	7.3E-01	7.3E-01	1/10	0.73	ug/L	Maximum	Only 1 Detect
	Tin, total	ug/L	1.5E+01	NA	3.6E+01	3.6E+01	1/3	35.7	ug/L	Maximum	Only 1 Detect
	Vanadium, total	ug/L	4.3E+01	NA	2.2E+00 B	2.2E+00 B	1/9	2.2	ug/L	Maximum	Only 1 Detect
	Chloride	ug/L	7.5E+03	NA	1.1E+04	1.1E+04	1/2	11400	ug/L	Maximum	Only 1 Detect
	Nitrogen, Ammonia	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes

Total metal concentrations used for exposure point concentrations unless only dissolved concentrations are available.

(1) ProUCL verion 4.00.05 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

ND - Not Detected. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not detected in PMP Area data.

NA - Not Available. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not analyzed for in PMP Area data.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

B - compound detected in blank

COPC - constituent of potential concern

EPC - exposure point concentration

NA - not available or not applicable

PMP - Peters Mine Pit

ug/L - micrograms per liter

TABLE 2-1d

EXPOSURE POINT CONCENTRATIION SUMMARY - GAME TISSUE

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Game Tissue
Exposure Medium: Game Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier) (2)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value	Units	Statistic (3)	Rationale
Site	Aluminum	mg/kg ww	3.6E+00	6.5E+00	4.1E-01	5.8E+01	16/33	6.524	mg/kg ww	95th % UCL	UCL < Max
	Arsenic	mg/kg ww	2.6E-01	9.9E-02	7.8E-02	1.5E-01	7/33	0.0986	mg/kg ww	95th % UCL	UCL < Max
	Barium	mg/kg ww	3.5E+00	1.6E+01	7.4E-02	3.1E+01	15/33	15.83	mg/kg ww	95th % UCL	UCL < Max
	Beryllium	mg/kg ww	2.7E-02	1.3E-02	2.3E-03	6.7E-02	7/33	0.0127	mg/kg ww	95th % UCL	UCL < Max
	Cadmium	mg/kg ww	9.6E-02	1.3E-01	1.3E-02	9.6E-01	10/33	0.133	mg/kg ww	95th % UCL	UCL < Max
	Chromium	mg/kg ww	5.1E-01	8.1E-01	1.8E-01	1.6E+00	32/33	0.809	mg/kg ww	95th % UCL	UCL < Max
	Cobalt	mg/kg ww	4.7E-02	NA	5.5E-02	7.8E-02	3/33	0.0777	mg/kg ww	Maximum	Only 3 Detects
	Copper	mg/kg ww	6.2E+00	1.6E+01	7.0E-01	6.2E+01	33/33	15.57	mg/kg ww	95th % UCL	UCL < Max
	Iron	mg/kg ww	4.8E+01	1.1E+02	6.7E+00	3.7E+02	33/33	105.1	mg/kg ww	95th % UCL	UCL < Max
	Lead	mg/kg ww	1.5E-01	1.4E-01	3.6E-02	1.2E+00	6/33	0.148	mg/kg ww	Arithmetic Mean	Lead
	Manganese	mg/kg ww	2.7E+00	4.0E+00	1.7E-01	1.6E+01	18/33	4.045	mg/kg ww	95th % UCL	UCL < Max
	Nickel	mg/kg ww	4.2E-01	1.1E+00	3.9E-02	2.7E+00	26/33	1.124	mg/kg ww	95th % UCL	UCL < Max
	Selenium	mg/kg ww	3.9E-01	5.1E-01	1.1E-01	1.3E+00	20/33	0.513	mg/kg ww	95th % UCL	UCL < Max
	Vanadium	mg/kg ww	6.5E-02	NA	9.5E-02	1.9E-01	3/33	0.186	mg/kg ww	Maximum	Only 3 Detects
	Zinc	mg/kg ww	2.0E+01	2.2E+01	8.3E+00	3.7E+01	33/33	22.39	mg/kg ww	95th % UCL	UCL < Max
	4-Methylphenol	mg/kg ww	8.0E-01	NA	8.1E-02 J	5.6E-01	3/30	0.557	mg/kg ww	Maximum	Only 3 Detects
	Benzoic Acid	mg/kg ww	2.3E-01	NA	1.4E-01 J	4.2E-01 J	6/6	0.419	mg/kg ww	Maximum	Only 6 Samples
	bis(2-Ethylhexyl)phthalate	mg/kg ww	7.7E-01	NA	5.8E-02 J	9.0E-02 J	2/30	0.0897	mg/kg ww	Maximum	Only 2 Detects

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect. The arithmetic average concentration will be used to calculate risks associated with lead in game tissue.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet weight

TABLE 2-1e

EXPOSURE POINT CONCENTRATION SUMMARY - PLANT TISSUE

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Plant Tissue
Exposure Medium: Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value	Units	Statistic (3)	Rationale
PMP Area	Aluminum	mg/kg ww	2.0E+01	3.2E+01	2.1E+01	8.6E+01	6/20	32.36	mg/kg ww	95th % UCL	UCL < Max
	Arsenic	mg/kg ww	2.7E-01	3.7E-01	1.1E-01	8.4E-01	6/20	0.368	mg/kg ww	95th % UCL	UCL < Max
	Barium	mg/kg ww	2.1E+01	3.2E+01	1.4E+00	4.9E+01	20/20	31.53	mg/kg ww	95th % UCL	UCL < Max
	Cadmium	mg/kg ww	9.7E-01	1.7E+00	1.2E-01	5.4E+00	11/20	1.721	mg/kg ww	95th % UCL	UCL < Max
	Chromium	mg/kg ww	1.5E-01	2.2E-01	1.0E-01	5.8E-01	10/20	0.222	mg/kg ww	95th % UCL	UCL < Max
	Cobalt	mg/kg ww	ND	ND	ND	ND	0/20	NA	mg/kg ww	95th % UCL	UCL < Max
	Copper	mg/kg ww	1.6E+00	2.0E+00	5.8E-01	5.1E+00	20/20	2.012	mg/kg ww	95th % UCL	UCL < Max
	Iron	mg/kg ww	4.4E+01	6.5E+01	2.5E+01	2.0E+02	11/20	65.31	mg/kg ww	95th % UCL	UCL < Max
	Lead	mg/kg ww	1.7E+00	3.0E+00	3.0E-01	1.2E+01	11/20	1.72	mg/kg ww	Arithmetic Mean	Lead
	Manganese	mg/kg ww	4.0E+00	4.5E+00	1.6E+00	6.4E+00	20/20	4.514	mg/kg ww	95th % UCL	UCL < Max
	Nickel	mg/kg ww	3.9E-01	8.6E-01	1.0E-01	2.2E+00	19/20	0.857	mg/kg ww	95th % UCL	UCL < Max
	Zinc	mg/kg ww	2.2E+01	5.3E+01	3.9E+00	1.2E+02 J	20/20	53.05	mg/kg ww	95th % UCL	UCL < Max

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

ND - Not Detected. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not detected in PMP Area data.

NA - Not Available. All site data used for selecting COPCs. Only data from PMP Area used for EPC calculation and this compound was not analyzed for in PMP Area data.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect. The arithmetic average concentration will be used to calculate risks associated with lead in plant tissue.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet weight

TABLE 2-2a

EXPOSURE POINT CONCENTRATION SUMMARY - SOIL

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minumum Concentration (Qualifier) (2)		Maximum Concentration (Qualifier) (2)		Detection Frequency	Exposure Point Concentration			
										Value (3), (4)	Units	Statistic (3), (4)	Rationale
CMP Area	Benzene	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Chlorobenzene	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Ethylbenzene	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Trichloroethene	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Vinyl chloride	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Xylene, -m,p	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Xylenes	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Benzo(a)anthracene	mg/kg	1.9E-02	NA	1.8E-02	J	9.0E-02		4/10	0.0697	mg/kg	Maximum	Max < UCL
	Benzo(a)pyrene	mg/kg	2.6E-02	NA	1.9E-02	J	1.1E-01		4/10	0.105	mg/kg	Maximum	Max < UCL
	Benzo(b)fluoranthene	mg/kg	2.3E-02	NA	1.6E-02	J	1.1E-01		4/10	0.106	mg/kg	Maximum	Max < UCL
	Benzo(k)fluoranthene	mg/kg	2.0E-02	NA	1.7E-02	J	7.9E-02		3/10	0.0794	mg/kg	Maximum	Max < UCL
	bis(2-Ethylhexyl)phthalate	mg/kg	6.9E-02	1.4E+00	6.0E-02	J	2.8E-01		6/10	0.28	mg/kg	Maximum	Max < UCL
	Chrysene	mg/kg	2.3E-02	NA	2.2E-02	J	9.3E-02		4/10	0.0929	mg/kg	Maximum	Max < UCL
	Dibenzo(a,h)anthracene	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Dibenzofuran	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	mg/kg	2.5E-02	NA	4.7E-02	J	7.7E-02		2/10	0.0774	mg/kg	Maximum	Max < UCL
	Naphthalene	mg/kg	5.3E-03	NA	1.4E-02	J	1.4E-02	J	1/10	0.0142	mg/kg	Maximum	Max < UCL
	Dieldrin	mg/kg	NA	NA	NA		NA		NA	NA	NA	NA	NA
	PCB 1242	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	PCB 1248	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	PCB 1254	mg/kg	4.7E-02	NA	7.8E-02		1.8E-01		3/10	0.175	mg/kg	Maximum	Max < UCL
	PCB 1260	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Aluminum	mg/kg	1.2E+04	1.3E+04	8.1E+03		1.6E+04		10/10	13409	mg/kg	95th % UCL	UCL < Max
	Antimony	mg/kg	ND	ND	ND		ND		0/10	NA	NA	NA	NA
	Arsenic	mg/kg	5.1E+00	6.5E+00	2.8E+00		1.1E+01		10/10	6.531	mg/kg	95th % UCL	UCL < Max
	Cadmium	mg/kg	4.9E-01	1.0E+00	2.5E-01	B	1.5E+00		10/10	1.008	mg/kg	95th % UCL	UCL < Max
	Barium	mg/kg	4.5E+01	5.6E+01	2.4E+01		9.0E+01		10/10	56.11	mg/kg	95th % UCL	UCL < Max
	Chromium	mg/kg	2.2E+01	3.0E+01	1.1E+01	J	5.6E+01	J	10/10	30.07	mg/kg	95th % UCL	UCL < Max
	Cobalt	mg/kg	1.1E+01	1.3E+01	7.2E+00	J	1.8E+01	J	10/10	12.83	mg/kg	95th % UCL	UCL < Max
	Copper	mg/kg	2.6E+01	3.4E+01	1.6E+01		5.1E+01		10/10	33.77	mg/kg	95th % UCL	UCL < Max
	Iron	mg/kg	2.3E+04	2.6E+04	1.8E+04	J	2.9E+04	J	10/10	25563	mg/kg	95th % UCL	UCL < Max
	Lead	mg/kg	5.1E+01	1.5E+02	8.9E+00		2.5E+02		10/10	51.06	mg/kg	Average	Lead (4)
	Manganese	mg/kg	5.5E+02	7.2E+02	3.0E+02	J	2.0E+03	J	10/10	721.4	mg/kg	95th % UCL	UCL < Max
	Mercury	mg/kg	8.2E-02	2.2E-01	2.6E-02	B	3.4E-01		8/10	0.224	mg/kg	95th % UCL	UCL < Max
	Nickel	mg/kg	1.8E+01	2.0E+01	1.4E+01		2.4E+01		10/10	19.72	mg/kg	95th % UCL	UCL < Max
	Thallium	mg/kg	7.5E-01	1.0E+00	8.1E-01	B	1.2E+00	B	6/10	1.04	mg/kg	95th % UCL	UCL < Max
	Vanadium	mg/kg	3.3E+01	4.0E+01	1.6E+01		4.9E+01		10/10	39.62	mg/kg	95th % UCL	UCL < Max
	Zinc	mg/kg	8.2E+01	1.5E+02	4.4E+01	J	2.0E+02	J	10/10	154.7	mg/kg	95th % UCL	UCL < Max

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

ND - Not Detected. All site data used for selecting COPCs. Only data from CMP Area used for EPC calculation and this compound was not detected in CMP Area data.

NA - Not Available. All site data used for selecting COPCs. Only data from CMP Area used for EPC calculation and this compound was not analyzed for in CMP Area dat

(2) Qualifier codes:

J - concentration estimated below the detection limit.

B - compound detected in blank.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect.

(4) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead.

CMP - Cannon Mine Pit

EPC - exposure point concentration

mg/kg - milligrams per kilogram

NA - not available or not applicable

TABLE 2-2b

EXPOSURE POINT CONCENTRATION SUMMARY - GAME TISSUE

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Game Tissue
Exposure Medium: Game Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier) (2)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value (3), (4)	Units	Statistic (3), (4)	Rationale
Site	Aluminum	mg/kg ww	7.8E-01	1.2E+00	4.1E-01	4.0E+00	10/23	1.167	mg/kg ww	95th % UCL	UCL < Max
	Arsenic	mg/kg ww	4.8E-02	9.9E-02	7.8E-02	1.5E-01	7/23	0.0987	mg/kg ww	95th % UCL	UCL < Max
	Beryllium	mg/kg ww	9.2E-03	1.2E-02	2.3E-03	6.7E-02	7/23	0.0119	mg/kg ww	95th % UCL	UCL < Max
	Cadmium	mg/kg ww	9.4E-02	1.8E-01	1.3E-02	9.6E-01	10/23	0.18	mg/kg ww	95th % UCL	UCL < Max
	Chromium	mg/kg ww	3.4E-01	4.1E-01	1.8E-01	7.0E-01 J	22/23	0.412	mg/kg ww	95th % UCL	UCL < Max
	Cobalt	mg/kg ww	2.3E-02	5.9E-02	5.5E-02	7.8E-02	3/23	0.0587	mg/kg ww	95th % UCL	UCL < Max
	Copper	mg/kg ww	6.4E+00	1.9E+01	7.0E-01	6.2E+01	23/23	19.47	mg/kg ww	95th % UCL	UCL < Max
	Lead	mg/kg ww	3.3E-02	6.1E-02	3.6E-02	2.0E-01	5/23	0.0327	mg/kg ww	Average	Lead (4)
	Manganese	mg/kg ww	4.7E-01	7.6E-01	1.7E-01	2.8E+00	8/23	0.764	mg/kg ww	95th % UCL	UCL < Max
	Nickel	mg/kg ww	2.3E-01	5.4E-01	3.9E-02	1.4E+00 J	19/23	0.535	mg/kg ww	95th % UCL	UCL < Max
	Selenium	mg/kg ww	1.4E-01	2.0E-01	1.1E-01	3.6E-01	12/23	0.198	mg/kg ww	95th % UCL	UCL < Max
	Zinc	mg/kg ww	2.0E+01	2.4E+01	8.3E+00	3.7E+01	23/23	24.13	mg/kg ww	95th % UCL	UCL < Max
	Benzoic Acid	mg/kg ww	2.3E-01	3.1E-01	1.4E-01 J	4.2E-01 J	6/6	0.312	mg/kg ww	95th % UCL	UCL < Max
	bis(2-Ethylhexyl)phthalate	mg/kg ww	3.9E-01	9.0E-02	5.8E-02 J	9.0E-02 J	2/23	0.0897	mg/kg ww	Maximum	Only 2 Detects

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect.

(4) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet weight

TABLE 2-2c

EXPOSURE POINT CONCENTRATION SUMMARY - PLANT TISSUE

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Plant Tissue
Exposure Medium: Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value (3), (4)	Units	Statistic (3), (4)	Rationale
Site	Aluminum	mg/kg ww	2.8E+01	4.0E+01	2.1E+01	1.1E+02	25/70	39.5	mg/kg ww	95% UCL	UCL < Max
	Arsenic	mg/kg ww	2.4E-01	2.7E-01	1.1E-01	9.3E-01	17/70	0.268	mg/kg ww	95% UCL	UCL < Max
	Barium	mg/kg ww	1.8E+01	2.7E+01	5.9E-01	1.0E+02	68/70	27.2	mg/kg ww	95% UCL	UCL < Max
	Cadmium	mg/kg ww	5.8E-01	8.2E-01	1.0E-01	5.4E+00	46/70	0.815	mg/kg ww	95% UCL	UCL < Max
	Chromium	mg/kg ww	1.4E-01	1.8E-01	9.5E-02	6.5E-01	33/70	0.181	mg/kg ww	95% UCL	UCL < Max
	Cobalt	mg/kg ww	7.4E-02	3.1E-02	1.0E-02	3.0E-01	5/70	0.0307	mg/kg ww	95% UCL	UCL < Max
	Copper	mg/kg ww	1.8E+00	2.0E+00	5.8E-01	5.3E+00	69/70	1.987	mg/kg ww	95% UCL	UCL < Max
	Lead	mg/kg ww	1.5E+00	2.2E+00	1.1E-02	1.8E+01	37/70	1.46	mg/kg ww	Average	Lead (4)
	Manganese	mg/kg ww	1.0E+01	1.2E+01	1.6E+00	6.9E+01	70/70	11.73	mg/kg ww	95% UCL	UCL < Max
	Nickel	mg/kg ww	4.5E-01	5.3E-01	1.0E-01	2.6E+00	66/70	0.529	mg/kg ww	95% UCL	UCL < Max
	Zinc	mg/kg ww	1.5E+01	1.7E+01	2.5E+00	1.2E+02 J	70/70	16.98	mg/kg ww	95% UCL	UCL < Max

Notes:

(1) ProUCL verion 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect.

(4) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet weight

TABLE 2-3a

EXPOSURE POINT CONCENTRATION SUMMARY - SOIL

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minumum Concentration (Qualifier)	Maximum Concentration (Qualifier)		Detection Frequency	Exposure Point Concentration			
									Value (2), (3)	Units	Statistic (2), (3)	Rationale
OCDA	Benzene	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Chlorobenzene	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Ethylbenzene	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Trichloroethene	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Vinyl chloride	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Xylene, -m,p	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Xylenes	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Benzo(a)anthracene	mg/kg	3.3E-02	1.1E-01	7.3E-02	2.4E-01	J	3/16	0.106	mg/kg	95th % UCL	UCL < Max
	Benzo(a)pyrene	mg/kg	2.8E-02	1.0E-01	8.3E-02	1.8E-01	J	3/16	0.102	mg/kg	95th % UCL	UCL < Max
	Benzo(b)fluoranthene	mg/kg	3.6E-02	1.3E-01	9.9E-02	2.4E-01		3/16	0.127	mg/kg	95th % UCL	UCL < Max
	Benzo(k)fluoranthene	mg/kg	3.5E-02	9.1E-02	6.9E-02	1.5E-01	J	3/16	0.0914	mg/kg	95th % UCL	UCL < Max
	bis(2-Ethylhexyl)phthalate	mg/kg	7.2E-02	1.8E-01	9.0E-02	4.9E-01		3/16	0.178	mg/kg	95th % UCL	UCL < Max
	Chrysene	mg/kg	3.2E-02	1.2E-01	9.7E-02	2.2E-01		3/16	0.12	mg/kg	95th % UCL	UCL < Max
	Dibenzo(a,h)anthracene	mg/kg	2.0E-02	NA	1.6E-01	1.6E-01	J	1/16	0.158	mg/kg	Maximum	Only 1 detect
	Dibenzofuran	mg/kg	1.1E-02	NA	3.4E-02	3.4E-02		1/16	0.0341	mg/kg	Maximum	Only 1 detect
	Indeno(1,2,3-cd)pyrene	mg/kg	2.3E-02	5.2E-02	4.0E-02	9.4E-02	J	3/16	0.0521	mg/kg	95th % UCL	UCL < Max
	Naphthalene	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Pentachlorophenol	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Aldrin	mg/kg	NA	NA	NA	NA		NA	NA	NA	NA	NA
	Dieldrin	mg/kg	NA	NA	NA	NA		NA	NA	NA	NA	NA
	PCB 1242	mg/kg	1.5E-02	NA	1.5E-01	1.5E-01		1/16	0.15	mg/kg	Maximum	Only 1 detect
	PCB 1248	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	PCB 1254	mg/kg	3.1E-02	1.3E-01	8.2E-02	2.9E-01		2/16	0.126	mg/kg	95th % UCL	UCL < Max
	PCB 1260	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Aluminum	mg/kg	9.0E+03	1.1E+04	4.1E+03	1.6E+04		16/16	10801	mg/kg	95th % UCL	UCL < Max
	Antimony	mg/kg	4.1E+00	NA	9.4E-01	9.4E-01	J	1/16	0.94	mg/kg	Maximum	Only 1 detect
	Arsenic	mg/kg	2.0E+01	5.1E+01	2.3E+00	5.1E+01	B	15/16	50.98	mg/kg	95th % UCL	UCL < Max
	Barium	mg/kg	7.1E+01	1.8E+02	1.5E+01	4.5E+02	B	16/16	183.8	mg/kg	95th % UCL	UCL < Max
	Cadmium	mg/kg	1.4E+00	1.8E+00	2.1E-01	5.3E+00		7/16	1.769	mg/kg	95th % UCL	UCL < Max
	Chromium	mg/kg	1.3E+01	1.6E+01	6.6E+00	2.5E+01	BJ	14/16	15.79	mg/kg	95th % UCL	UCL < Max
	Cobalt	mg/kg	8.5E+00	9.6E+00	4.1E+00	1.3E+01	BJ	16/16	9.575	mg/kg	95th % UCL	UCL < Max
	Copper	mg/kg	2.3E+01	2.9E+01	1.1E+01	6.3E+01		16/16	29.12	mg/kg	95th % UCL	UCL < Max
	Iron	mg/kg	2.3E+04	2.6E+04	1.2E+04	5.0E+04		16/16	26262	mg/kg	95th % UCL	UCL < Max
	Lead	mg/kg	4.0E+01	6.1E+01	1.1E+01	1.6E+02		12/16	40.1	mg/kg	Arithmetic Mean	Lead
	Manganese	mg/kg	5.1E+02	6.7E+02	2.1E+02	1.8E+03	J	16/16	672.5	mg/kg	95th % UCL	UCL < Max
	Mercury	mg/kg	1.3E-01	2.3E-01	1.2E-02	1.1E+00	B	16/16	0.229	mg/kg	95th % UCL	UCL < Max
	Nickel	mg/kg	1.4E+01	1.7E+01	8.6E+00	2.4E+01		12/16	16.78	mg/kg	95th % UCL	UCL < Max
	Thallium	mg/kg	ND	ND	ND	ND		0/16	NA	NA	NA	NA
	Vanadium	mg/kg	4.6E+01	6.4E+01	1.4E+01	1.3E+02	BJ	16/16	63.59	mg/kg	95th % UCL	UCL < Max

TABLE 2-3a

EXPOSURE POINT CONCENTRATION SUMMARY - SOIL

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minumum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Detection Frequency	Exposure Point Concentration			
								Value (2), (3)	Units	Statistic (2), (3)	Rationale
	Zinc	mg/kg	7.9E+01	1.8E+02	2.8E+01	3.5E+02	16/16	175	mg/kg	95th % UCL	UCL < Max

Notes:

Qualifier codes:

J - concentration estimated below the detection limi
B - compound detected in blank.

(1) ProUCL verion 4.00.05 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.
ND - Not Detected. All site data used for selecting COPCs. Only data from OCDA used for EPC calculation and this compound was not detected in OCDA data.
NA - Not Available. All site data used for selecting COPCs. Only data from OCDA used for EPC calculation and this compound was not analyzed for in OCDA data.

(2) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead in soil.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect.

COPC - constituent of potential concern

EPC - exposure point concentration

mg/kg - milligrams per kilogram

NA - not available or not applicable

OCDA - O'Connor Disposal Area

TABLE 2-3b

EXPOSURE POINT CONCENTRATION SUMMARY - SEDIMENT

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier)	Detection Frequency	Exposure Point Concentration			
								Value (1)	Units	Statistic (1)	Rationale
OCDA	Benzo(a)anthracene	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Benzo(a)pyrene	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Benzo(b)fluoranthene	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Aluminum	mg/kg	8.2E+03	NA	3.7E+03 J	1.5E+04 J	3/3	15400	mg/kg	Maximum	Only 3 Samples
	Antimony	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Arsenic	mg/kg	9.2E+00	NA	6.0E+00	1.5E+01	3/3	14.5	mg/kg	Maximum	Only 3 Samples
	Chromium	mg/kg	1.0E+01	NA	7.1E+00 J	1.6E+01 J	3/3	16.2	mg/kg	Maximum	Only 3 Samples
	Cobalt	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Iron	mg/kg	2.2E+04	NA	1.2E+04 J	3.8E+04 J	3/3	37600	mg/kg	Maximum	Only 3 Samples
	Lead	mg/kg	9.8E+00	NA	4.5E+00	2.0E+01	3/3	9.8	mg/kg	Arithmetic Mean	Lead
	Manganese	mg/kg	2.3E+02	NA	1.7E+02 J	3.2E+02 J	3/3	323	mg/kg	Maximum	Only 3 Samples
	Thallium	mg/kg	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	Vanadium	mg/kg	3.8E+01	NA	2.4E+01	6.1E+01 J	3/3	61.2	mg/kg	Maximum	Only 3 Samples

Notes:

ND - Not Detected. All site data used for selecting COPCs. Only data from OCDA used for EPC calculation and this compound was not detected in OCDA data.

NA - Not Available. All site data used for selecting COPCs. Only data from OCDA used for EPC calculation and this compound was not analyzed for in OCDA data.

(1) In accordance with USEPA modeling guidance (USEPA 1994; USEPA 2003), the arithmetic average concentration will be used to calculate risks associated with lead in sediment.

COPC - constituent of potential concern

EPC - exposure point concentration

mg/kg - milligrams per kilogram

NA - not available or not applicable

OCDA - O'Connor Disposal Area

TABLE 2-3c

EXPOSURE POINT CONCENTRATION SUMMARY - SURFACE WATER

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Surface Water
Exposure Medium: Surface Water

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value (2)	Units	Statistic (2)	Rationale
OCDA	Acetone	ug/L	ND	ND	ND	ND	0/9	NA	NA	NA	NA
	Benzene	ug/L	1.1E-01	NA	4.8E-01	4.8E-01	1/9	0.48	ug/L	Maximum	Only 1 Detect
	Chlorodifluoromethane	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Methylene chloride	ug/L	ND	ND	ND	ND	0/9	NA	NA	NA	NA
	Naphthalene	ug/L	ND	ND	ND	ND	0/9	NA	NA	NA	NA
	o-Xylene	ug/L	ND	ND	ND	ND	0/3	NA	NA	NA	NA
	bis(2-Ethylhexyl)phthalate	ug/L	9.2E-01	NA	1.2E+00	9.3E+00	2/9	9.3	ug/L	Maximum	Only 2 Detects
	Aluminum, total	ug/L	1.6E+02	NA	5.8E+01	2.3E+02	3/9	226	ug/L	Maximum	Only 3 Detects
	Antimony, total	ug/L	2.8E+00	NA	6.4E+00	6.4E+00	1/9	6.4	ug/L	Maximum	Only 1 Detect
	Arsenic, total	ug/L	ND	ND	ND	ND	0/9	NA	NA	NA	NA
	Cadmium, total	ug/L	1.8E+00	NA	2.0E-01	3.0E-01	2/9	0.3	ug/L	Maximum	Only 2 Detects
	Chromium (hex), total	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt, total	ug/L	2.4E+01	NA	4.0E-01	4.0E-01	1/9	0.4	ug/L	Maximum	Only 1 Detect
	Iron, total	ug/L	5.2E+03	1.0E+04	1.1E+03	2.2E+04	9/9	10365	ug/L	95th % UCL	UCL < Max
	Lead, total	ug/L	2.0E+00	NA	1.0E+00	1.8E+00	4/9	2.03	ug/L	Arithmetic Mean	Lead
	Manganese, total	ug/L	4.2E+02	6.0E+02	1.1E+02	9.6E+02	9/9	599	ug/L	95th % UCL	UCL < Max
	Mercury, total	ug/L	ND	ND	ND	ND	0/9	NA	NA	NA	NA
	Tin, total	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Vanadium, total	ug/L	2.8E+01	NA	6.0E-01	1.1E+00	2/9	1.1	ug/L	Maximum	Only 2 Detects
	Nitrogen, Ammonia	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Total metal concentrations used for exposure point concentrations unless only dissolved concentrations are available.

(1) ProUCL verion 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

ND - Not Detected. All site data used for selecting COPCs. Only data from OCDA (Park Brook and SR-3) used for EPC calculation and this compound was not detected in OCDA (Park Brook and SR-3) data.

NA - Not Available. All site data used for selecting COPCs. Only data from OCDA (Park Brook and SR-3) used for EPC calculation and this compound was not analyzed for in OCDA (Park Brook and SR-3) data.

(2) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect. The arithmetic average concentration will be used to calculate risks associated with lead in water.

COPC - constituent of potential concern

EPC - exposure point concentration

NA - not available or not applicable

OCDA - O'Connor Disposal Area

ug/L - micrograms per liter

TABLE 2-3d

EXPOSURE POINT CONCENTRATION SUMMARY - GAME TISSUE

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Game Tissue
Exposure Medium: Game Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier) (2)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value (3)	Units	Statistic (3)	Rationale
Site	Aluminum	mg/kg ww	7.8E-01	1.2E+00	4.1E-01	4.0E+00	10/23	1.167	mg/kg ww	95th % UCL	UCL < Max
	Arsenic	mg/kg ww	4.8E-02	9.9E-02	7.8E-02	1.5E-01	7/23	0.0987	mg/kg ww	95th % UCL	UCL < Max
	Barium	mg/kg ww	6.1E-02	1.1E-01	7.4E-02	2.7E-01	5/23	0.111	mg/kg ww	95th % UCL	UCL < Max
	Beryllium	mg/kg ww	9.2E-03	1.2E-02	2.3E-03	6.7E-02	7/23	0.0119	mg/kg ww	95th % UCL	UCL < Max
	Cadmium	mg/kg ww	9.4E-02	1.8E-01	1.3E-02	9.6E-01	10/23	0.18	mg/kg ww	95th % UCL	UCL < Max
	Chromium	mg/kg ww	3.4E-01	4.1E-01	1.8E-01	7.0E-01 J	22/23	0.408	mg/kg ww	95th % UCL	UCL < Max
	Cobalt	mg/kg ww	2.3E-02	5.9E-02	5.5E-02	7.8E-02	3/23	0.0587	mg/kg ww	95th % UCL	UCL < Max
	Copper	mg/kg ww	6.4E+00	1.9E+01	7.0E-01	6.2E+01	23/23	19.47	mg/kg ww	95th % UCL	UCL < Max
	Iron	mg/kg ww	4.9E+01	1.3E+02	6.7E+00	3.7E+02	23/23	129.1	mg/kg ww	95th % UCL	UCL < Max
	Lead	mg/kg ww	3.3E-02	6.1E-02	3.6E-02	2.0E-01	5/23	0.0327	mg/kg ww	Arithmetic Mean	Lead
	Manganese	mg/kg ww	4.7E-01	7.6E-01	1.7E-01	2.8E+00	8/23	0.764	mg/kg ww	95th % UCL	UCL < Max
	Nickel	mg/kg ww	2.3E-01	5.4E-01	3.9E-02	1.4E+00 J	19/23	0.535	mg/kg ww	95th % UCL	UCL < Max
	Selenium	mg/kg ww	1.4E-01	2.0E-01	1.1E-01	3.6E-01	12/23	0.198	mg/kg ww	95th % UCL	UCL < Max
	Vanadium	mg/kg ww	4.9E-02	1.1E-01	9.5E-02	1.9E-01	3/23	0.107	mg/kg ww	95th % UCL	UCL < Max
	Zinc	mg/kg ww	2.0E+01	2.4E+01	8.3E+00	3.7E+01	23/23	24.13	mg/kg ww	95th % UCL	UCL < Max
	4-Methylphenol	mg/kg ww	4.3E-01	2.1E-01	8.1E-02 J	5.6E-01	3/23	0.208	mg/kg ww	95th % UCL	UCL < Max
	Benzoic Acid	mg/kg ww	2.3E-01	3.1E-01	1.4E-01 J	4.2E-01 J	6/6	0.312	mg/kg ww	95th % UCL	UCL < Max
	bis(2-Ethylhexyl)phthalate	mg/kg ww	3.9E-01	9.0E-02	5.8E-02 J	9.0E-02 J	2/23	0.0897	mg/kg ww	95th % UCL	UCL < Max

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect. The arithmetic average concentration will be used to calculate risks associated with lead in game tissue.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet tissue weight

TABLE 2-3e

EXPOSURE POINT CONCENTRATION SUMMARY - PLANT TISSUE

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

Scenario Timeframe: Current/Future
Medium: Plant Tissue
Exposure Medium: Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution) (1)	Minimum Concentration (Qualifier)	Maximum Concentration (Qualifier) (2)	Detection Frequency	Exposure Point Concentration			
								Value (3)	Units	Statistic (3)	Rationale
OCDA	Aluminum	mg/kg ww	3.4E+01	5.1E+01	3.3E+01 J	1.1E+02 J	16/41	51.23	mg/kg ww	95th % UCL	UCL < Max
	Arsenic	mg/kg ww	2.2E-01	3.0E-01	1.4E-01	9.3E-01	11/41	0.303	mg/kg ww	95th % UCL	UCL < Max
	Barium	mg/kg ww	1.6E+01	2.9E+01	5.9E-01	1.0E+02	39/41	28.82	mg/kg ww	95th % UCL	UCL < Max
	Cadmium	mg/kg ww	4.9E-01	6.3E-01	1.0E-01 J	2.1E+00 J	32/41	0.629	mg/kg ww	95th % UCL	UCL < Max
	Chromium	mg/kg ww	1.4E-01	1.8E-01	9.5E-02	6.5E-01	22/41	0.18	mg/kg ww	95th % UCL	UCL < Max
	Cobalt	mg/kg ww	7.4E-02	1.3E-01	1.1E-01	3.0E-01	3/41	0.125	mg/kg ww	95th % UCL	UCL < Max
	Copper	mg/kg ww	1.9E+00	2.2E+00	8.4E-01	5.3E+00	41/41	2.153	mg/kg ww	95th % UCL	UCL < Max
	Iron	mg/kg ww	5.1E+01	8.0E+01	4.2E+01	2.3E+02	17/41	79.95	mg/kg ww	95th % UCL	UCL < Max
	Lead	mg/kg ww	1.5E+00	2.5E+00	1.1E-02	1.8E+01	23/41	1.49	mg/kg ww	Arithmetic Mean	Lead
	Manganese	mg/kg ww	1.3E+01	1.6E+01	1.8E+00	6.9E+01	41/41	15.98	mg/kg ww	95th % UCL	UCL < Max
	Nickel	mg/kg ww	4.3E-01	7.6E-01	1.1E-01	2.6E+00	38/41	0.76	mg/kg ww	95th % UCL	UCL < Max
	Zinc	mg/kg ww	1.2E+01	1.4E+01	2.6E+00 J	3.7E+01 J	41/41	14	mg/kg ww	95th % UCL	UCL < Max

Notes:

(1) ProUCL version 4.1.00 used to calculate 95th percentile upper confidence limits (UCLs) on the mean.

(2) Qualifier codes:

J - concentration estimated below the detection limit.

(3) 95th% UCL chosen for the EPC, except when maximum detect is less than 95th% UCL, then defaulted to maximum detect. The arithmetic average concentration will be used to calculate risks associated with lead in plant tissue.

EPC - exposure point concentration

mg/kg ww - milligrams per kilogram wet tissue weight

TABLE 3-1a

NON-CANCER TOXICITY DATA – ORAL/DERMAL
Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern (2), (3), (4)	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
			Value	Units	(1)	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	CNS, respiratory system, mortality	1000	HEAST	7/1/1997
67-64-1	Acetone	chronic	9.0E-01	mg/kg/day	1	9.0E-01	mg/kg/day	kidney	1000	IRIS	7/31/2003
7429-90-5	Aluminum	chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	developmental, neurobehavioral	100	PPRTV	10/23/2006
7440-36-0	Antimony	chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	mortality, blood	1000	IRIS	2/1/1991
7440-38-2	Arsenic	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	skin, vascular	3	IRIS	2/1/1993
7440-39-3	Barium	chronic	2.0E-01	mg/kg/day	0.07	1.4E-02	mg/kg/day	kidney	300	IRIS	7/11/2005
71-43-2	Benzene	chronic	4.0E-03	mg/kg/day	1	4.0E-03	mg/kg/day	immune system	300	IRIS	4/17/2003
56-55-3	Benzo(a)anthracene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
65-85-0	Benzoic Acid	chronic	4.0E+00	mg/kg/day	1	4.0E+00	mg/kg/day	NA	1	IRIS	7/1/1993
7440-41-7	Beryllium	chronic	2.0E-03	mg/kg/day	0.007	1.4E-05	mg/kg/day	GI	300	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	liver	1000	IRIS	5/1/1991
7440-43-9	Cadmium	chronic	1.0E-03	mg/kg/day	0.025	2.5E-05	mg/kg/day	kidney	10	IRIS	2/1/1994
16887-00-6	Chloride	NA	NA	mg/kg/day	1	NA	mg/kg/day	NA	100	IRIS	6/1/1994
108-90-7	Chlorobenzene	chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	liver	1000	IRIS	7/1/1993
7440-47-3	Chromium	chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	NA	900	IRIS	9/3/1998
7440-48-4	Cobalt	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	thyroid	3000	PPRTV	8/25/2008
7440-50-8	Copper	chronic	4.0E-02	mg/kg/day	1	4.0E-02	mg/kg/day	GI	NA	HEAST	7/1/1997
110-82-7	Cyclohexane	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7439-89-6	Iron	chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	GI	1.5	PPRTV	9/11/2006
7439-92-1	Lead	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	1.4E-01	mg/kg/day	0.04	5.6E-03	mg/kg/day	CNS	1	IRIS	5/1/1996
7439-96-5	Manganese (non-diet)	chronic	4.7E-02	mg/kg/day	0.04	1.9E-03	mg/kg/day	CNS	3	IRIS	5/1/1996
7439-97-6	Mercury	chronic	1.6E-04	mg/kg/day	1	1.6E-04	mg/kg/day	kidney	1000	Cal EPA	12/18/2008
75-09-2	Methylene chloride	chronic	6.0E-02	mg/kg/day	1	6.0E-02	mg/kg/day	liver	100	IRIS	3/1/1988
7440-02-0	Nickel	chronic	2.0E-02	mg/kg/day	0.04	8.0E-04	mg/kg/day	body weight	300	IRIS	12/1/1996
11097-69-1	PCB 1254	chronic	2.0E-05	mg/kg/day	1	2.0E-05	mg/kg/day	eye, nails, immune system	300	IRIS	11/1/1996
7782-49-2	Selenium	chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	hair, nails, skin, blood, CNS	3	IRIS	9/1/1991
7440-22-4	Silver	chronic	5.0E-03	mg/kg/day	0.04	2.0E-04	mg/kg/day	skin	3	IRIS	12/1/1996
7440-28-0	Thallium	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7440-31-5	Tin, total	chronic	6.0E-01	mg/kg/day	1	6.0E-01	mg/kg/day	liver, kidney	100	HEAST	7/1/1997
7440-62-2	Vanadium	chronic	5.0E-03	mg/kg/day	0.026	1.3E-04	mg/kg/day	hair	100	IRIS	12/1/1996
08-38-3 & 106-42-	Xylene, -m,p	chronic	2.0E-01	mg/kg/day	1	2.0E-01	mg/kg/day	body weight, mortality	1000	IRIS	2/21/2003
7440-66-6	Zinc	chronic	3.0E-01	mg/kg/day	1	3.0E-01	mg/kg/day	blood	3	IRIS	8/3/2005

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004, EPA/540/R/99/005. If not available, assumed to be 100%.

(2) Toxicity value for cadmium (food) used for soil exposure scenarios.

(3) Toxicity value for chromium VI used for chromium; toxicity value for vanadium and compounds (USEPA Regional Screening Level [RSL] table, November 2010) used for vanadium.

(4) In accordance with the IRIS assessment for manganese, a modifying factor of 3 was applied to the RfD to account for non-diet (e.g. soil, drinking water) exposures.

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Chronic Reference Exposure Levels (RELs); http://oehha.ca.gov/air/allrels.html

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

CNS - central nervous system
mg/kg/day - milligrams per kilogram per day
RfD - reference dose
GI - gastrointestinal tract
NA - not available or not applicable

TABLE 3-1b

NON-CANCER TOXICITY DATA – INHALATION

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
			Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	chronic	6.0E-01	mg/m^3	neurological	300	Cal EPA	12/18/2008
67-64-1	Acetone	chronic	3.1E+01	mg/m^3	neurological	100	ATSDR	5/1/1994
7429-90-5	Aluminum	chronic	5.0E-03	mg/m^3	neurological	300	PPRTV	10/23/2006
7440-36-0	Antimony	NA	NA	mg/m^3	–	NA	NA	NA
7440-38-2	Arsenic	chronic	1.5E-05	mg/m^3	developmental, neurobehavioral	30	Cal EPA	12/18/2008
7440-39-3	Barium	chronic	5.0E-04	mg/m^3	fetus	1000	HEAST	7/1/1997
71-43-2	Benzene	chronic	3.0E-02	mg/m^3	immune system	300	IRIS	4/17/2003
56-55-3	Benzo(a)anthracene	NA	NA	mg/m^3	–	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/m^3	–	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/m^3	–	NA	NA	NA
65-85-0	Benzoic Acid	NA	NA	mg/m^3	–	NA	NA	NA
7440-41-7	Beryllium	chronic	2.0E-05	mg/m^3	lung	10	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	NA	NA	mg/m^3	–	NA	NA	NA
7440-43-9	Cadmium	chronic	1.0E-05	mg/m^3	kidney	9	ATSDR	9/1/2008
16887-00-6	Chloride	NA	NA	mg/m^3	–	NA	NA	NA
108-90-7	Chlorobenzene	chronic	5.0E-02	mg/m^3	kidney, liver	10000	PPRTV	8/1/2011
7440-47-3	Chromium	chronic	1.0E-04	mg/m^3	lung	300	IRIS	9/3/1998
7440-48-4	Cobalt	chronic	6.0E-06	mg/m^3	lung	300	PPRTV	8/25/2008
7440-50-8	Copper	NA	NA	mg/m^3	–	NA	NA	NA
110-82-7	Cyclohexane	chronic	6.0E+00	mg/m^3	body weight	300	IRIS	9/11/2003
7439-89-6	Iron	NA	NA	mg/m^3	–	NA	NA	NA
7439-92-1	Lead	NA	NA	mg/m^3	–	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	5.0E-05	mg/m^3	neurological	1000	IRIS	12/1/1993
7439-96-5	Manganese (non-diet)	chronic	5.0E-05	mg/m3	neurological	1000	IRIS	12/1/1993
7439-97-6	Mercury	chronic	3.0E-04	mg/m^3	neurological	30	IRIS	6/1/1995
75-09-2	Methylene chloride	chronic	1.0E+00	mg/m^3	liver	30	ATSDR	9/1/2000
7440-02-0	Nickel	chronic	9.0E-05	mg/m^3	respiratory system	30	ATSDR	9/1/2005
11097-69-1	PCB 1254	NA	NA	mg/m^3	–	NA	NA	NA
7782-49-2	Selenium	chronic	2.0E-02	mg/m^3	hair, nails, skin, blood, CNS	3	Cal EPA	12/18/2008
7440-22-4	Silver	NA	NA	mg/m^3	–	NA	NA	NA
7440-28-0	Thallium	NA	NA	mg/m^3	–	NA	NA	NA
7440-31-5	Tin, total	NA	NA	mg/m^3	–	NA	NA	NA
7440-62-2	Vanadium	chronic	1.0E-04	mg/m^3	respiratory system	30	ATSDR	9/1/2009
38-3 & 106-	Xylene, -m,p	chronic	1.0E-01	mg/m^3	CNS	300	IRIS	2/21/2003
7440-66-6	Zinc	NA	NA	mg/m^3	–	NA	NA	NA

Notes:

NA - Inhalation toxicity data is not available and toxicity will be discussed qualitatively.

ATSDR - Agency for Toxic Substances & Disease Registry, Minimal Risk Levels, http://www.atsdr.cdc.gov/mrls/mrllist.asp

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Inhalation Reference Exposure Levels, http://www.oehha.ca.gov/air/allrels.html

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

CNS - central nervous system

NA - not available or not applicable

mg/m^3 - milligrams per cubic meter

RfC - reference concentration

TABLE 3-1c

CANCER TOXICITY DATA – ORAL/DERMAL

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
		Value	Units	(1)	Value	Units	(2)	Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	C	NA	NA
67-64-1	Acetone	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7429-90-5	Aluminum	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-36-0	Antimony	NA	(mg/kg-day)$^{-1}$	0.15	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-38-2	Arsenic	1.5E+00	(mg/kg-day)$^{-1}$	1	1.5E+00	(mg/kg-day)$^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium	NA	(mg/kg-day)$^{-1}$	0.07	NA	(mg/kg-day)$^{-1}$	E	NA	NA
71-43-2	Benzene	5.5E-02	(mg/kg-day)$^{-1}$	1	5.5E-02	(mg/kg-day)$^{-1}$	A	IRIS	1/9/2000
56-55-3	Benzo(a)anthracene	7.3E-01	(mg/kg-day)$^{-1}$	1	7.3E-01	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
50-32-8	Benzo(a)pyrene	7.3E+00	(mg/kg-day)$^{-1}$	1	7.3E+00	(mg/kg-day)$^{-1}$	B2	IRIS	11/1/1994
205-99-2	Benzo(b)fluoranthene	7.3E-01	(mg/kg-day)$^{-1}$	1	7.3E-01	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
65-85-0	Benzoic Acid	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-41-7	Beryllium	NA	(mg/kg-day)$^{-1}$	0.007	NA	(mg/kg-day)$^{-1}$	D	NA	NA
117-81-7	bis(2-Ethylhexyl)phthalate	1.4E-02	(mg/kg-day)$^{-1}$	1	1.4E-02	(mg/kg-day)$^{-1}$	B2	IRIS	2/1/1993
7440-43-9	Cadmium	NA	(mg/kg-day)$^{-1}$	0.025	NA	(mg/kg-day)$^{-1}$	B1	NA	NA
16887-00-6	Chloride	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
108-90-7	Chlorobenzene	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-47-3	Chromium	NA	(mg/kg-day)$^{-1}$	0.025	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-48-4	Cobalt	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-50-8	Copper	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
110-82-7	Cyclohexane	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7439-89-6	Iron	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7439-92-1	Lead	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	B2	NA	NA
7439-96-5	Manganese (diet)	NA	(mg/kg-day)$^{-1}$	0.04	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)	NA	(mg/kg-day)-1	0.04	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7439-97-6	Mercury	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
75-09-2	Methylene chloride	7.5E-03	(mg/kg-day)$^{-1}$	1	7.5E-03	(mg/kg-day)$^{-1}$	B2	IRIS	2/1/1995
7440-02-0	Nickel	NA	(mg/kg-day)$^{-1}$	0.04	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
11097-69-1	PCB 1254	2.0E+00	(mg/kg-day)$^{-1}$	1	2.0E+00	(mg/kg-day)$^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-22-4	Silver	NA	(mg/kg-day)$^{-1}$	0.04	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-28-0	Thallium	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-31-5	Tin, total	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-62-2	Vanadium	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
08-38-3 & 106-42-	Xylene, -m,p	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-66-6	Zinc	NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004, EPA/540/R/99/005. If not available, assumed to be 100%.

(2) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

CSF - cancer slope factor

NA - not available or not applicable

(mg/kg-day)$^{-1}$ - per milligram per kilogram per day

TABLE 3-1d

CANCER TOXICITY DATA – INHALATION

Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description (1)	Unit Risk : Inhalation CSF	
		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	NA	$(ug/m^3)^{-1}$	C	NA	NA
67-64-1	Acetone	NA	$(ug/m^3)^{-1}$	D	NA	NA
7429-90-5	Aluminum	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-36-0	Antimony	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-38-2	Arsenic	4.3E-03	$(ug/m^3)^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium	NA	$(ug/m^3)^{-1}$	D	NA	NA
71-43-2	Benzene	7.8E-06	$(ug/m^3)^{-1}$	A	IRIS	1/9/2000
56-55-3	Benzo(a)anthracene	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
50-32-8	Benzo(a)pyrene	1.1E-03	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
205-99-2	Benzo(b)fluoranthene	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
65-85-0	Benzoic Acid	NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-41-7	Beryllium	2.4E-03	$(ug/m^3)^{-1}$	B1	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	2.4E-06	$(ug/m^3)^{-1}$	B2	CalEPA	6/1/2009
7440-43-9	Cadmium	1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	6/1/1992
16887-00-6	Chloride	NA	$(ug/m^3)^{-1}$	NA	NA	NA
108-90-7	Chlorobenzene	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-47-3	Chromium	1.2E-02	$(ug/m^3)^{-1}$	A	IRIS	9/3/1998
7440-48-4	Cobalt	9.0E-03	$(ug/m^3)^{-1}$	NA	PPRTV	8/25/2008
7440-50-8	Copper	NA	$(ug/m^3)^{-1}$	D	NA	NA
110-82-7	Cyclohexane	NA	$(ug/m^3)^{-1}$	D	NA	NA
7439-89-6	Iron	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7439-92-1	Lead	NA	$(ug/m^3)^{-1}$	B2	NA	NA
7439-96-5	Manganese (diet)	NA	$(ug/m^3)^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)	NA	(ug/m3)-1	D	NA	NA
7439-97-6	Mercury	NA	$(ug/m^3)^{-1}$	D	NA	NA
75-09-2	Methylene chloride	4.7E-07	$(ug/m^3)^{-1}$	B2	IRIS	2/1/1995
7440-02-0	Nickel	2.6E-04	$(ug/m^3)^{-1}$	NA	CalEPA	6/1/2009
11097-69-1	PCB 1254	5.7E-04	$(ug/m^3)^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium	NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-22-4	Silver	NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-28-0	Thallium	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-31-5	Tin, total	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-62-2	Vanadium	NA	$(ug/m^3)^{-1}$	NA	NA	NA
08-38-3 & 106-42-	Xylene, -m,p	NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-66-6	Zinc	NA	$(ug/m^3)^{-1}$	D	NA	NA

Notes:

(1) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

If inhalation toxicity data are not available, toxicity will be discussed qualitatively.

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Cancer Potency Values, http://www.oehha.ca.gov/risk/pdf/tcdb072109alpha.pdf

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

CSF - cancer slope factor

$(ug/m^3)^{-1}$ - per microgram per cubic meter

NA - not available or not applicable

TABLE 3-2a

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern (2), (3)	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
			Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
7429-90-5	Aluminum	chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	developmental, neurobehavioral	100	PPRTV	10/23/2006
7440-38-2	Arsenic	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	skin, vascular	3	IRIS	2/1/1993
7440-39-3	Barium	chronic	2.0E-01	mg/kg/day	0.07	1.4E-02	mg/kg/day	kidney	300	IRIS	7/11/2005
56-55-3	Benzo(a)anthracene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
65-85-0	Benzoic Acid	chronic	4.0E+00	mg/kg/day	1	4.0E+00	mg/kg/day	NA	1	IRIS	7/1/1993
7440-41-7	Beryllium	chronic	2.0E-03	mg/kg/day	0.007	1.4E-05	mg/kg/day	GI	300	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	liver	1000	IRIS	5/1/1991
7440-43-9	Cadmium	chronic	1.0E-03	mg/kg/day	0.025	2.5E-05	mg/kg/day	kidney	10	IRIS	2/1/1994
18540-29-9	Chromium	chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	NA	900	IRIS	9/3/1998
218-01-9	Chrysene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
7440-48-4	Cobalt	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	thyroid	3000	PPRTV	8/25/2008
7440-50-8	Copper	chronic	4.0E-02	mg/kg/day	1	4.0E-02	mg/kg/day	GI	NA	HEAST	7/1/1997
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
7439-89-6	Iron	chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	GI	1.5	PPRTV	9/11/2006
7439-92-1	Lead	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	1.4E-01	mg/kg/day	0.04	5.6E-03	mg/kg/day	CNS	1	IRIS	5/1/1996
7439-96-5	Manganese (non-diet)	chronic	4.7E-02	mg/kg/day	0.04	1.9E-03	mg/kg/day	CNS	3	IRIS	5/1/1996
22967-92-6	Mercury	chronic	1.0E-04	mg/kg/day	1	1.0E-04	mg/kg/day	developmental, neurological	10	IRIS	7/27/2001
91-20-3	Naphthalene	chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	body weight	3000	IRIS	9/17/1998
7440-02-0	Nickel	chronic	2.0E-02	mg/kg/day	0.04	8.0E-04	mg/kg/day	body weight	300	IRIS	12/1/1996
11097-69-1	PCB 1254	chronic	2.0E-05	mg/kg/day	1	2.0E-05	mg/kg/day	eye, nails, immune system	300	IRIS	11/1/1996
7782-49-2	Selenium	chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	hair, nails, skin, blood, CNS	3	IRIS	9/1/1991
7440-28-0	Thallium	NA	NA	mg/kg/day	1	NA	mg/kg/day	--	NA	NA	NA
7440-62-2	Vanadium	chronic	5.0E-03	mg/kg/day	0.026	1.3E-04	mg/kg/day	hair	100	IRIS	12/1/1996
7440-66-6	Zinc	chronic	3.0E-01	mg/kg/day	1	3.0E-01	mg/kg/day	blood	3	IRIS	8/3/2005

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment). July 2004. EPA/540/R/99/005. If not available, assumed to be 100%.

(2) Toxicity value for cadmium (diet) used for cadmium; toxicity value for chromium VI used for chromium; toxicity value for methylmercury used for mercury.

(3) In accordance with the IRIS assessment for manganese, a modifying factor of 3 was applied to the RfD to account for non-diet (e.g. soil) exposures.

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

CNS - central nervous system

GI - gastrointestinal tract

mg/kg/day - milligrams per kilogram per day

NA - not applicable or not available

RfD - reference dose

TABLE 3-2b

NON-CANCER TOXICITY DATA -- INHALATION

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
			Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
7429-90-5	Aluminum	chronic	5.0E-03	mg/m^3	neurological	300	PPRTV	10/23/2006
7440-38-2	Arsenic	chronic	1.5E-05	mg/m^3	developmental, neurobehavioral	30	Cal EPA	12/18/2008
7440-39-3	Barium	chronic	5.0E-04	mg/m^3	fetus	1000	HEAST	7/1/1997
56-55-3	Benzo(a)anthracene	NA	NA	mg/m^3	--	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/m^3	--	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/m^3	--	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	mg/m^3	--	NA	NA	NA
65-85-0	Benzoic Acid	NA	NA	mg/m^3	--	NA	NA	NA
7440-41-7	Beryllium	chronic	2.0E-05	mg/m^3	lung	10	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	NA	NA	mg/m^3	--	NA	NA	NA
7440-43-9	Cadmium	chronic	2.0E-05	mg/m^3	kidney, respiratory system	10	Cal EPA	5/1/2002
18540-29-9	Chromium	chronic	1.0E-04	mg/m^3	lung	300	IRIS	9/3/1998
218-01-9	Chrysene	NA	NA	mg/m^3	--	NA	NA	NA
7440-48-4	Cobalt	chronic	6.0E-06	mg/m^3	lung	300	PPRTV	8/25/2008
7440-50-8	Copper	NA	NA	mg/m^3	--	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	mg/m^3	--	NA	NA	NA
7439-89-6	Iron	NA	NA	mg/m^3	--	NA	NA	NA
7439-92-1	Lead	NA	NA	mg/m^3	--	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	5.0E-05	mg/m^3	neurological	1000	IRIS	12/1/1993
7439-96-5	Manganese (non-diet)	chronic	5.0E-05	mg/m3	neurological	1000	IRIS	12/1/1993
7439-97-6	Mercury	chronic	3.0E-04	mg/m^3	neurological	30	IRIS	6/1/1995
91-20-3	Naphthalene	chronic	3.0E-03	mg/m^3	nasal	3000	IRIS	9/17/1998
7440-02-0	Nickel	chronic	9.0E-05	mg/m^3	respiratory system	30	ATSDR	9/1/2005
11097-69-1	PCB 1254	NA	NA	mg/m^3	--	NA	NA	NA
7782-49-2	Selenium	chronic	2.0E-02	mg/m^3	hair, nails, skin, blood, CNS	3	Cal EPA	12/18/2008
7440-28-0	Thallium	NA	NA	mg/m^3	--	NA	NA	NA
7440-62-2	Vanadium	chronic	1.0E-04	mg/m^3	respiratory system	30	ATSDR	9/1/2009
7440-66-6	Zinc	NA	NA	mg/m^3	--	NA	NA	NA

Notes:

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Inhalation Reference Exposure Levels. http://www.oehha.ca.gov/air/allrels.html

ASTDR - Agency for Toxic Substances & Disease Registry. Minimal Risk Levels, http://www.atsdr.cdc.gov/mrls/mrllist.asp

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

CNS - central nervous system

mg/m^3 - milligrams per cubic meter

NA - not applicable or not available. If inhalation toxicity data is not available, toxicity will be discussed qualitatively.

RfC - reference concentration

TABLE 3-2c

CANCER TOXICITY DATA – ORAL/DERMAL

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Mutagenicity (2)	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description (3)	Oral CSF	
			Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
7429-90-5	Aluminum		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7440-38-2	Arsenic		1.5E+00	$(mg/kg\text{-}day)^{-1}$	1	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium		NA	$(mg/kg\text{-}day)^{-1}$	0.07	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
56-55-3	Benzo(a)anthracene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	1	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	3/1/1994
50-32-8	Benzo(a)pyrene	M	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	11/1/1994
205-99-2	Benzo(b)fluoranthene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	1	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	3/1/1994
207-08-9	Benzo(k)fluoranthene	M	7.3E-02	$(mg/kg\text{-}day)^{-1}$	1	7.3E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	3/1/1994
65-85-0	Benzoic Acid		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7440-41-7	Beryllium		NA	$(mg/kg\text{-}day)^{-1}$	0.007	NA	$(mg/kg\text{-}day)^{-1}$	B1	NA	NA
117-81-7	bis(2-Ethylhexyl)phthalate		1.4E-02	$(mg/kg\text{-}day)^{-1}$	1	1.4E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	2/1/1993
7440-43-9	Cadmium		NA	$(mg/kg\text{-}day)^{-1}$	0.025	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
18540-29-9	Chromium	M	NA	$(mg/kg\text{-}day)^{-1}$	0.025	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
218-01-9	Chrysene	M	7.3E-03	$(mg/kg\text{-}day)^{-1}$	1	7.3E-03	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	3/1/1994
7440-48-4	Cobalt		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7440-50-8	Copper		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	M	7.3E-01	$(mg/kg\text{-}day)^{-1}$	1	7.3E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	3/1/1994
7439-89-6	Iron		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7439-92-1	Lead		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7439-96-5	Manganese (diet)		NA	$(mg/kg\text{-}day)^{-1}$	0.04	NA	$(mg/kg\text{-}day)^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)		NA	$(mg/kg\text{-}day)^{-1}$	0.04	NA	$(mg/kg\text{-}day)^{-1}$	D	NA	NA
7439-97-6	Mercury		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	D	NA	NA
91-20-3	Naphthalene		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	C	NA	NA
7440-02-0	Nickel		NA	$(mg/kg\text{-}day)^{-1}$	0.04	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
11097-69-1	PCB 1254		2.0E+00	$(mg/kg\text{-}day)^{-1}$	1	2.0E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	D	NA	NA
7440-28-0	Thallium		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7440-62-2	Vanadium		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	NA	NA	NA
7440-66-6	Zinc		NA	$(mg/kg\text{-}day)^{-1}$	1	NA	$(mg/kg\text{-}day)^{-1}$	D	NA	NA

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004, EPA/540/R/99/005. If not available, assumed to be 100%.

(2) In accordance with USEPA guidance, constituents considered to have a mutagenic mode of action will be evaluated using the following age-dependent adjustment factors (ADAFs): for ages 0 - <2, ADAF = 10; for ages 2 - <16, ADAF=3; for ages ≥16, ADAF=1.

(3) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

IRIS - Integrated Risk Information System: http://www.epa.gov/iris/

CSF - cancer slope factor

$(mg/kg\text{-}day)^{-1}$ - per milligram per kilogram per day

NA - not applicable or not available

TABLE 3-2d

CANCER TOXICITY DATA – INHALATION

Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Mutagenicity (1)	Unit Risk		Weight of Evidence/ Cancer Guideline Description (2)	Unit Risk ; Inhalation CSF	
			Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
7429-90-5	Aluminum		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-38-2	Arsenic		4.3E-03	$(ug/m^3)^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium		NA	$(ug/m^3)^{-1}$	NA	NA	NA
56-55-3	Benzo(a)anthracene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
50-32-8	Benzo(a)pyrene	M	1.1E-03	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
205-99-2	Benzo(b)fluoranthene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
207-08-9	Benzo(k)fluoranthene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
65-85-0	Benzoic Acid		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-41-7	Beryllium		2.4E-03	$(ug/m^3)^{-1}$	B1	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate		2.4E-06	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
7440-43-9	Cadmium		1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	6/1/1992
18540-29-9	Chromium	M	1.2E-02	$(ug/m^3)^{-1}$	A	IRIS	9/3/1998
218-01-9	Chrysene	M	1.1E-05	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
7440-48-4	Cobalt		9.0E-03	$(ug/m^3)^{-1}$	NA	PPRTV	8/25/2008
7440-50-8	Copper		NA	$(ug/m^3)^{-1}$	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
7439-89-6	Iron		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7439-92-1	Lead		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7439-96-5	Manganese (diet)		NA	$(ug/m^3)^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)		NA	(ug/m3)-1	D	NA	NA
7439-97-6	Mercury		NA	$(ug/m^3)^{-1}$	D	NA	NA
91-20-3	Naphthalene		3.4E-05	$(ug/m^3)^{-1}$	C	CalEPA	7/21/2009
7440-02-0	Nickel		2.6E-04	$(ug/m^3)^{-1}$	NA	CalEPA	7/21/2009
11097-69-1	PCB 1254		5.7E-04	$(ug/m^3)^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium		NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-28-0	Thallium		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-62-2	Vanadium		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-66-6	Zinc		NA	$(ug/m^3)^{-1}$	D	NA	NA

Notes:

(1) In accordance with USEPA guidance, constituents considered to have a mutagenic mode of action will be evaluated using the following age-dependent adjustment factors (ADAFs): for ages 0 - <2, ADAF = 10; for ages 2 - <16, ADAF=3; for ages ≥16, ADAF=1.

(2) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Cancer Potency Values, http://www.oehha.ca.gov/risk/pdf/tcdb072109alpha.pdf

CSF - cancer slope factor

NA - not available or not applicable. If inhalation toxicity data is not available, toxicity will be discussed qualitatively.

$(ug/m^3)^{-1}$ - per microgram per cubic meter

TABLE 3-3a

NON-CANCER TOXICITY DATA – ORAL/DERMAL

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern (2), (3)	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Absorbed RfD for Dermal		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
			Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	CNS, respiratory system, mortality	1000	HEAST	7/1/1997
7429-90-5	Aluminum	chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	developmental, neurobehavioral	100	PPRTV	10/23/2006
7440-36-0	Antimony	chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	mortality, blood	1000	IRIS	2/1/1991
7440-38-2	Arsenic	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	skin, vascular	3	IRIS	2/1/1993
7440-39-3	Barium	chronic	2.0E-01	mg/kg/day	0.07	1.4E-02	mg/kg/day	kidney	300	IRIS	7/11/2005
71-43-2	Benzene	chronic	4.0E-03	mg/kg/day	1	4.0E-03	mg/kg/day	immune system	300	IRIS	4/17/2003
56-55-3	Benzo(a)anthracene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
65-85-0	Benzoic Acid	chronic	4.0E+00	mg/kg/day	1	4.0E+00	mg/kg/day	NA	1	IRIS	7/1/1993
7440-41-7	Beryllium	chronic	2.0E-03	mg/kg/day	0.007	1.4E-05	mg/kg/day	GI	300	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	chronic	2.0E-02	mg/kg/day	1	2.0E-02	mg/kg/day	liver	1000	IRIS	5/1/1991
7440-43-9	Cadmium (water)	chronic	5.0E-04	mg/kg/day	0.05	2.5E-05	mg/kg/day	kidney	10	IRIS	2/1/1994
7440-43-9	Cadmium (diet)	chronic	1.0E-03	mg/kg/day	0.025	2.5E-05	mg/kg/day	kidney	10	IRIS	2/1/1994
18540-29-9	Chromium	chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	NA	900	IRIS	9/3/1998
218-01-9	Chrysene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7440-48-4	Cobalt	chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	thyroid	3000	PPRTV	8/25/2008
7440-50-8	Copper	chronic	4.0E-02	mg/kg/day	1	4.0E-02	mg/kg/day	GI	NA	HEAST	7/1/1997
53-70-3	Dibenzo(a,h)anthracene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
132-64-9	Dibenzofuran	chronic	1.0E-03	mg/kg/day	1	1.0E-03	mg/kg/day	body weight	10,000	PPRTV	6/11/2007
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7439-89-6	Iron	chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	GI	1.5	PPRTV	9/11/2006
7439-92-1	Lead	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	1.4E-01	mg/kg/day	0.04	5.6E-03	mg/kg/day	CNS	1	IRIS	5/1/1996
7439-96-5	Manganese (non-diet)	chronic	4.7E-02	mg/kg/day	0.04	1.9E-03	mg/kg/day	CNS	3	IRIS	5/1/1996
22967-92-6	Mercury	chronic	1.0E-04	mg/kg/day	1	1.0E-04	mg/kg/day	developmental, neurological	10	IRIS	7/27/2001
7440-02-0	Nickel	chronic	2.0E-02	mg/kg/day	0.04	8.0E-04	mg/kg/day	body weight	300	IRIS	12/1/1996
53469-21-9	PCB 1242	NA	NA	mg/kg/day	1	NA	mg/kg/day	–	NA	NA	NA
11097-69-1	PCB 1254	chronic	2.0E-05	mg/kg/day	1	2.0E-05	mg/kg/day	eye, nails, immune system	300	IRIS	11/1/1996
7782-49-2	Selenium	chronic	5.0E-03	mg/kg/day	1	5.0E-03	mg/kg/day	hair, nails, skin, blood, CNS	3	IRIS	9/1/1991
7440-62-2	Vanadium	chronic	5.0E-03	mg/kg/day	0.026	1.3E-04	mg/kg/day	hair	100	IRIS	12/1/1996
7440-66-6	Zinc	chronic	3.0E-01	mg/kg/day	1	3.0E-01	mg/kg/day	blood	3	IRIS	8/3/2005

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004, EPA/540/R/99/005. If not available, assumed to be 100%.

(2) Toxicity value for cadmium (diet) used for cadmium; toxicity value for chromium VI used for chromium; toxicity value for methylmercury used for mercury.

(3) In accordance with the IRIS assessment for manganese, a modifying factor of 3 was applied to the RfD to account for non-diet (e.g. soil, drinking water) exposures.

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

CNS - central nervous system

GI - gastrointestinal tract

mg/kg/day - milligrams per kilogram per day

NA - not available or not applicable

RfD - reference dose

TABLE 3-3b

NON-CANCER TOXICITY DATA – INHALATION

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
			Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol	chronic	6.0E-01	mg/m^3	neurological	300	Cal EPA	12/18/2008
7429-90-5	Aluminum	chronic	5.0E-03	mg/m^3	neurological	300	PPRTV	10/23/2006
7440-36-0	Antimony	NA	NA	mg/m^3	–	NA	NA	NA
7440-38-2	Arsenic	chronic	1.5E-05	mg/m^3	developmental, neurobehavioral	30	Cal EPA	12/18/2008
7440-39-3	Barium	chronic	5.0E-04	mg/m^3	fetus	1000	HEAST	7/1/1997
71-43-2	Benzene	chronic	3.0E-02	mg/m^3	immune system	300	IRIS	4/17/2003
56-55-3	Benzo(a)anthracene	NA	NA	mg/m^3	–	NA	NA	NA
50-32-8	Benzo(a)pyrene	NA	NA	mg/m^3	–	NA	NA	NA
205-99-2	Benzo(b)fluoranthene	NA	NA	mg/m^3	–	NA	NA	NA
207-08-9	Benzo(k)fluoranthene	NA	NA	mg/m^3	–	NA	NA	NA
65-85-0	Benzoic Acid	NA	NA	mg/m^3	–	NA	NA	NA
7440-41-7	Beryllium	chronic	2.0E-05	mg/m^3	lung	10	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate	NA	NA	mg/m^3	–	NA	NA	NA
7440-43-9	Cadmium (water)	chronic	2.0E-05	mg/m^3	kidney, respiratory system	10	Cal EPA	5/1/2002
7440-43-9	Cadmium (diet)	chronic	2.0E-05	mg/m^3	kidney, respiratory system	10	Cal EPA	5/1/2002
18540-29-9	Chromium	chronic	1.0E-04	mg/m^3	lung	300	IRIS	9/3/1998
218-01-9	Chrysene	NA	NA	mg/m^3	–	NA	NA	NA
7440-48-4	Cobalt	chronic	6.0E-06	mg/m^3	lung	300	PPRTV	8/25/2008
7440-50-8	Copper	NA	NA	mg/m^3	–	NA	NA	NA
53-70-3	Dibenzo(a,h)anthracene	NA	NA	mg/m^3	–	NA	NA	NA
132-64-9	Dibenzofuran	NA	NA	mg/m^3	–	NA	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	NA	NA	mg/m^3	–	NA	NA	NA
7439-89-6	Iron	NA	NA	mg/m^3	–	NA	NA	NA
7439-92-1	Lead	NA	NA	mg/m^3	–	NA	NA	NA
7439-96-5	Manganese (diet)	chronic	5.0E-05	mg/m^3	neurological	1000	IRIS	12/1/1993
7439-96-5	Manganese (non-diet)	chronic	5.0E-05	mg/m^3	neurological	1000	IRIS	12/1/1993
7439-97-6	Mercury	chronic	3.0E-04	mg/m^3	neurological	30	IRIS	6/1/1995
7440-02-0	Nickel	chronic	9.0E-05	mg/m^3	respiratory system	30	ATSDR	9/1/2005
53469-21-9	PCB 1242	NA	NA	mg/m^3	–	NA	NA	NA
11097-69-1	PCB 1254	NA	NA	mg/m^3	–	NA	NA	NA
7782-49-2	Selenium	chronic	2.0E-02	mg/m^3	hair, nails, skin, blood, CNS	3	Cal EPA	12/18/2008
7440-62-2	Vanadium	chronic	1.0E-04	mg/m^3	respiratory system	30	ATSDR	9/1/2009
7440-66-6	Zinc	NA	NA	mg/m^3	–	NA	NA	NA

Notes:

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

ATSDR - Agency for Toxic Substances & Disease Registry, Minimal Risk Levels, http://www.atsdr.cdc.gov/mrls/mrllist.asp

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Inhalation Reference Exposure Levels, http://www.oehha.ca.gov/air/allrels.html

HEAST - Health Effect Assessment Summary Tables, http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=2877#Download

CNS - central nervous system

mg/m^3 - milligrams per cubic meter

NA - not available or not applicable. If inhalation toxicity data are not available, toxicity will be discussed qualitatively.

RfC - reference concentration

TABLE 3-3c

CANCER TOXICITY DATA – ORAL/DERMAL

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Mutagen (2)	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal		Weight of Evidence/ Cancer Guideline Description (3)	Oral CSF	
			Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	C	NA	NA
7429-90-5	Aluminum		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-36-0	Antimony		NA	(mg/kg-day)$^{-1}$	0.15	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-38-2	Arsenic		1.5E+00	(mg/kg-day)$^{-1}$	1	1.5E+00	(mg/kg-day)$^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium		NA	(mg/kg-day)$^{-1}$	0.07	NA	(mg/kg-day)$^{-1}$	E	NA	NA
71-43-2	Benzene		5.5E-02	(mg/kg-day)$^{-1}$	1	5.5E-02	(mg/kg-day)$^{-1}$	A	IRIS	1/9/2000
56-55-3	Benzo(a)anthracene	M	7.3E-01	(mg/kg-day)$^{-1}$	1	7.3E-01	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
50-32-8	Benzo(a)pyrene	M	7.3E+00	(mg/kg-day)$^{-1}$	1	7.3E+00	(mg/kg-day)$^{-1}$	B2	IRIS	11/1/1994
205-99-2	Benzo(b)fluoranthene	M	7.3E-01	(mg/kg-day)$^{-1}$	1	7.3E-01	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
207-08-9	Benzo(k)fluoranthene	M	7.3E-02	(mg/kg-day)$^{-1}$	1	7.3E-02	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
65-85-0	Benzoic Acid		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-41-7	Beryllium		NA	(mg/kg-day)$^{-1}$	0.007	NA	(mg/kg-day)$^{-1}$	D	NA	NA
117-81-7	bis(2-Ethylhexyl)phthalate		1.4E-02	(mg/kg-day)$^{-1}$	1	1.4E-02	(mg/kg-day)$^{-1}$	B2	IRIS	2/1/1993
7440-43-9	Cadmium (water)		NA	(mg/kg-day)$^{-1}$	0.05	NA	(mg/kg-day)$^{-1}$	B1	NA	NA
7440-43-9	Cadmium (diet)		NA	(mg/kg-day)$^{-1}$	0.025	NA	(mg/kg-day)$^{-1}$	B1	NA	NA
18540-29-9	Chromium	M	NA	(mg/kg-day)$^{-1}$	0.025	NA	(mg/kg-day)$^{-1}$	D	NA	NA
218-01-9	Chrysene	M	7.3E-03	(mg/kg-day)$^{-1}$	1	7.3E-03	(mg/kg-day)$^{-1}$	B2	IRIS	7/21/2009
7440-48-4	Cobalt		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	B2	NA	NA
7440-50-8	Copper		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
53-70-3	Dibenzo(a,h)anthracene	M	7.3E+00	(mg/kg-day)$^{-1}$	1	7.3E+00	(mg/kg-day)$^{-1}$	B2	IRIS	7/21/2009
132-64-9	Dibenzofuran		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	M	7.3E-01	(mg/kg-day)$^{-1}$	1	7.3E-01	(mg/kg-day)$^{-1}$	B2	IRIS	3/1/1994
7439-89-6	Iron		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7439-92-1	Lead		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	B2	NA	NA
7439-96-5	Manganese (diet)		NA	(mg/kg-day)$^{-1}$	0.04	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)		NA	(mg/kg-day)-1	0.04	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7439-97-6	Mercury		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-02-0	Nickel		NA	(mg/kg-day)$^{-1}$	0.04	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
53469-21-9	PCB 1242		2.0E+00	(mg/kg-day)$^{-1}$	1	2.0E+00	(mg/kg-day)$^{-1}$	B2	IRIS	6/1/1997
11097-69-1	PCB 1254		2.0E+00	(mg/kg-day)$^{-1}$	1	2.0E+00	(mg/kg-day)$^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA
7440-62-2	Vanadium		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	NA	NA	NA
7440-66-6	Zinc		NA	(mg/kg-day)$^{-1}$	1	NA	(mg/kg-day)$^{-1}$	D	NA	NA

Notes:

(1) Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), July 2004, EPA/540/R/99/005. If not available, assumed to be 100%.

(2) In accordance with USEPA guidance, constituents considered to have a mutagenic mode of action will be evaluated using the following age-dependent adjustment factors (ADAFs): for ages 0 - <2, ADAF = 10; for ages 2 - <16, ADAF=3; for ages ≥16, ADAF=1.

(3) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

CSF - cancer slope factor

(mg/kg/day)$^{-1}$ - per milligram per kilogram per day

NA - not available or not applicable

TABLE 3-3d

CANCER TOXICITY DATA – INHALATION

O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

CAS Number	Chemical of Potential Concern	Mutagen (1)	Unit Risk		Weight of Evidence/ Cancer Guideline Description (2)	Unit Risk : Inhalation CSF	
			Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
106-44-5	4-Methylphenol		NA	$(ug/m^3)^{-1}$	C	NA	NA
7429-90-5	Aluminum		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-36-0	Antimony		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-38-2	Arsenic		4.3E-03	$(ug/m^3)^{-1}$	A	IRIS	4/10/1998
7440-39-3	Barium		NA	$(ug/m^3)^{-1}$	D	NA	NA
71-43-2	Benzene		7.8E-06	$(ug/m^3)^{-1}$	A	IRIS	1/9/2000
56-55-3	Benzo(a)anthracene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
50-32-8	Benzo(a)pyrene	M	1.1E-03	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
205-99-2	Benzo(b)fluoranthene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
207-08-9	Benzo(k)fluoranthene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
65-85-0	Benzoic Acid		NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-41-7	Beryllium		2.4E-03	$(ug/m^3)^{-1}$	B1	IRIS	4/3/1998
117-81-7	bis(2-Ethylhexyl)phthalate		2.4E-06	$(ug/m^3)^{-1}$	B2	CalEPA	6/1/2009
7440-43-9	Cadmium (water)		1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	6/1/1992
7440-43-9	Cadmium (diet)		1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	6/1/1992
18540-29-9	Chromium	M	1.2E-02	$(ug/m^3)^{-1}$	A	IRIS	9/3/1998
218-01-9	Chrysene	M	1.1E-05	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
7440-48-4	Cobalt		9.0E-03	$(ug/m^3)^{-1}$	NA	PPRTV	9/25/2008
7440-50-8	Copper		NA	$(ug/m^3)^{-1}$	D	NA	NA
53-70-3	Dibenzo(a,h)anthracene	M	1.2E-03	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
132-64-9	Dibenzofuran		NA	$(ug/m^3)^{-1}$	D	NA	NA
193-39-5	Indeno(1,2,3-cd)pyrene	M	1.1E-04	$(ug/m^3)^{-1}$	B2	CalEPA	7/21/2009
7439-89-6	Iron		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7439-92-1	Lead		NA	$(ug/m^3)^{-1}$	B2	NA	NA
7439-96-5	Manganese (diet)		NA	$(ug/m^3)^{-1}$	D	NA	NA
7439-96-5	Manganese (non-diet)		NA	(ug/m3)-1	D	NA	NA
7439-97-6	Mercury		NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-02-0	Nickel		2.6E-04	$(ug/m^3)^{-1}$	NA	CalEPA	6/1/2009
53469-21-9	PCB 1242		5.7E-04	$(ug/m^3)^{-1}$	B2	IRIS	6/1/1997
11097-69-1	PCB 1254		5.7E-04	$(ug/m^3)^{-1}$	B2	IRIS	6/1/1997
7782-49-2	Selenium		NA	$(ug/m^3)^{-1}$	D	NA	NA
7440-62-2	Vanadium		NA	$(ug/m^3)^{-1}$	NA	NA	NA
7440-66-6	Zinc		NA	$(ug/m^3)^{-1}$	D	NA	NA

Notes:

(1) In accordance with USEPA guidance, constituents considered to have a mutagenic mode of action will be evaluated using the following age-dependent adjustment factors (ADAFs): for ages 0 - <2, ADAF = 10; for ages 2 - <16, ADAF=3; for ages ≥16, ADAF=1.

(2) USEPA (1986) cancer weight-of-evidence categories are as follows:

Group A: Carcinogenic to Humans (sufficient evidence of carcinogenicity in humans)

Group B: Probably Carcinogenic to Humans

B1 - limited evidence of carcinogenicity in humans

B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans

Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)

Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)

IRIS - Integrated Risk Information System; http://www.epa.gov/iris/

PPRTV - Provisional Peer Reviewed Toxicity Values

Cal EPA - California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Cancer Potency Values, http://www.oehha.ca.gov/risk/pdf/tcdb072109alpha.pdf

CSF - cancer slope factor

NA - not available or not applicable. If inhalation toxicity data are not available, toxicity will be discussed qualitatively.

$(ug/m^3)^{-1}$ - per microgram per cubic meter

TABLE 4-1a

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
REASONABLE MAXIMUM EXPOSURE
Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk	(1)	Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)	(1)	Apportioned Total Non-Cancer Hazard Index (2)	
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	4E-05	0.23	9E-06	4	0.23	1	(3)
Youth (7-16 years)	1E-05	0.23	3E-06	0.7	0.23	0.2	(3)
Adult	3E-05	0.23	6E-06	0.4	0.23	0.1	(3)
TOTAL SITE RISKS:	8E-05		2E-05	–		–	
Hypothetical Aggregate Wader							
Young Child (1-6 years)	2E-06			0.1			(3)
Youth (7-16 years)	2E-06			0.06			(3)
Adult	5E-06			0.04			(3)
TOTAL SITE RISKS:	9E-06			–			
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	5E-05	0.23	1E-05	6	0.23	1	(4)
Youth (7-16 years)	5E-05	0.23	1E-05	10	0.23	2	(5)
Adult	3E-04	0.23	6E-05	11	0.23	3	(6)
TOTAL SITE RISKS:	4E-04		8E-05	–		–	
Hypothetical Outdoor Worker							
Adult	9E-07			0.03			(3)
TOTAL SITE RISKS:	9E-07			–			
Hypothetical Combined Walker/Hiker/Dog Walker, Wader, and Hunter							
Young Child (1-6 years)	9E-05	0.23	2E-05	10	0.23	2	(7)
Youth (7-16 years)	7E-05	0.23	2E-05	11	0.23	3	(8)
Adult	3E-04	0.23	7E-05	12	0.23	3	(9)
TOTAL SITE RISKS:	4E-04		1E-04	–		–	

Notes:

(1) An apportionment of 23% is applied to estimated potential risks and hazards for the hypothetical walker/hiker/dog walker and hypothetical hunter scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the Peters Mine Pit Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (HIs) calculated for the receptor without the apportionment of 23% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

(4) Endpoint-specific hazard indices (HIs) for the Young Child (1-6 years) Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2) and kidney (HI = 2).

(5) Endpoint-specific hazard indices (HIs) for the Youth (7-16 years) Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), and kidney (HI = 2).

(6) Endpoint-specific hazard indices (HIs) for the Adult Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), skin (HI = 2), and kidney (HI = 2).

(7) Endpoint-specific hazard indices (HIs) for the Combined Adult Walker/Hiker/DogWalker, Wader, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), skin (HI = 2), and kidney (HI = 2).

(8) Endpoint-specific hazard indices (HIs) for the Combined Youth Walker/Hiker/DogWalker, Wader, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), skin (HI = 2), and kidney (HI = 2).

(9) Endpoint-specific hazard indices (HIs) for the Combined Young Child Walker/Hiker/DogWalker, Wader, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 3), GI (HI = 2), skin (HI = 3), and kidney (HI = 2).

TABLE 4-1b

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
CENTRAL TENDENCY
Peters Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk	(1)	Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)	(1)	Apportioned Total Non-Cancer Hazard Index (2)	
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	3E-07	0.23	6E-08	0.03	0.23	0.006	(3)
Youth (7-16 years)	3E-08	0.23	6E-09	0.005	0.23	0.001	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	3E-07		7E-08	--		--	
Hypothetical Aggregate Wader							
Young Child (1-6 years)	4E-08			0.002			(3)
Youth (7-16 years)	2E-08			0.002			(3)
Adult	0E+00			0			(3)
TOTAL SITE RISKS:	6E-08			--			
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	5E-07	0.23	1E-07	0.05	0.23	0.01	(3)
Youth (7-16 years)	1E-07	0.23	2E-08	0.02	0.23	0.005	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	6E-07		1E-07	--		--	
Hypothetical Outdoor Worker							
Adult	1E-08			0.002			(3)
TOTAL SITE RISKS:	1E-08			--			
Hypothetical Combined Walker/Hiker/Dog Walker, Wader, and Hunter							
Young Child (1-6 years)	8E-07	0.23	2E-07	0.07	0.23	0.02	(3)
Youth (7-16 years)	1E-07	0.23	5E-08	0.03	0.23	0.009	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	1E-06		3E-07	--		--	

Notes:

(1) An apportionment of 23% is applied to estimated potential risks and hazards for the hypothetical walker/hiker/dog walker and hypothetical hunter scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the Peters Mine Pit Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (HIs) calculated for the receptor without the apportionment of 23% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

TABLE 4-2a

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
REASONABLE MAXIMUM EXPOSURE
Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk	(1)	Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)	(1)	Apportioned Total Non-Cancer Hazard Index (2)	
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	1E-05	0.23	3E-06	2	0.23	0.4	(3)
Youth (7-16 years)	3E-06	0.23	7E-07	0.3	0.23	0.07	(3)
Adult	5E-06	0.23	1E-06	0.2	0.23	0.04	(3)
TOTAL SITE RISKS:	2E-05		4E-06	–		–	
Hypothetical Aggregate Dirt Biker/ATV Rider							
Youth (7-16 years)	2E-06	0.23	4E-07	0.2	0.23	0.04	(3)
Adult	4E-06	0.23	1E-06	0.1	0.23	0.02	(3)
TOTAL SITE RISKS:	6E-06		1E-06	–		–	
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	5E-05	0.23	1E-05	8	0.23	2	(4)
Youth (7-16 years)	4E-05	0.23	1E-05	7	0.23	2	(5)
Adult	2E-04	0.23	5E-05	8	0.23	2	(6)
TOTAL SITE RISKS:	3E-04		7E-05	–		–	
Hypothetical Current Outdoor Worker							
Adult	2E-07			0.009			(3)
TOTAL SITE RISKS:	2E-07			–			
Hypothetical Aggregate Future Resident							
Young Child (1-6 years)	1E-05			2			(3)
Youth (7-16 years)	5E-06			0.4			(3)
Adult	6E-06			0.2			(3)
TOTAL SITE RISKS:	2E-05			–			
Hypothetical Future Outdoor Worker							
Adult	3E-06			0.2			(3)
TOTAL SITE RISKS:	3E-06			–			
Hypothetical Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter							
Young Child (1-6 years)	6E-05	0.23	1E-05	10	0.23	2	(7)
Youth (7-16 years)	5E-05	0.23	1E-05	7	0.23	2	(8)
Adult	2E-04	0.23	5E-05	8	0.23	2	(9)
TOTAL SITE RISKS:	3E-04		7E-05	–		–	

Notes:

(1) An apportionment of 23% is applied to estimated potential risks and hazards for the hypothetical walker/hiker/dog walker, hypothetical dirt biker/ATV rider, hypothetical hunter, and hypothetical resident scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the Cannon Mine Pit Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (HIs) calculated for the receptor without the apportionment of 23% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

(4) Endpoint-specific hazard indices (HIs) for the Young Child (1-6 years) Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), and kidney (HI = 2).

(5) Endpoint-specific hazard indices (HIs) for the Youth (7-16 years) Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: GI (HI = 2).

(6) Endpoint-specific hazard indices (HIs) for the Adult Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2) and GI (HI = 2).

(7) Endpoint-specific hazard indices (HIs) for the Young Child Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 3), kidney (HI = 2), skin (HI=2), and thyroid (HI=2).

(8) Endpoint-specific hazard indices (HIs) for the Youth Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: GI (HI = 3).

(9) Endpoint-specific hazard indices (HIs) for the Adult Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter without the apportionment of 23% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2) and GI (HI = 3).

TABLE 4-2b

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
CENTRAL TENDENCY
Cannon Mine Pit Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk	(1)	Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)	(1)	Apportioned Total Non-Cancer Hazard Index (2)	
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	8E-08	0.23	2E-08	0.01	0.23	0.003	(3)
Youth (7-16 years)	7E-09	0.23	2E-09	0.002	0.23	0.0005	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	9E-08		2E-08	--		--	
Hypothetical Aggregate Dirt Biker/ATV Rider							
Youth (7-16 years)	4E-08	0.23	8E-09	0.003	0.23	0.0007	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	4E-08		8E-09	--		--	
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	4E-07	0.23	8E-08	0.03	0.23	0.007	(3)
Youth (7-16 years)	7E-08	0.23	2E-08	0.02	0.23	0.003	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	4E-07		1E-07	--		--	
Hypothetical Current Outdoor Worker							
Adult	1E-09			0.0003			(3)
TOTAL SITE RISKS:	1E-09			--			
Hypothetical Aggregate Future Resident							
Young Child (1-6 years)	6E-06			1			(3)
Youth (7-16 years)	5E-07			0.2			(3)
Adult	0E+00			0			(3)
TOTAL SITE RISKS:	6E-06			--			
Hypothetical Future Outdoor Worker							
Adult	1E-07			0.03			(3)
TOTAL SITE RISKS:	1E-07			--			
Hypothetical Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter							
Young Child (1-6 years)	4E-07	0.23	1E-07	0.04	0.23	0.009	(3)
Youth (7-16 years)	1E-07	0.23	3E-08	0.02	0.23	0.005	(3)
Adult	0E+00	0.23	0E+00	0	0.23	0	(3)
TOTAL SITE RISKS:	6E-07		1E-07	--		--	

Notes:

(1) An apportionment of 23% is applied to estimated potential risks and hazards for the hypothetical walker/hiker/dog walker, hypothetical dirt biker/ATV rider, hypothetical hunter, and hypothetical resident scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the Cannon Mine Pit Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (HIs) calculated for the receptor without the apportionment of 23% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

TABLE 4-3a

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
REASONABLE MAXIMUM EXPOSURE
O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk		Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)		Apportioned Total Non-Cancer Hazard Index (2)	
		(1)			(1)		
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	6E-05	0.54	3E-05	3	0.54	1	(3)
Youth (7-16 years)	2E-05	0.54	1E-05	0.5	0.54	0.3	(3)
Adult	3E-05	0.54	2E-05	0.3	0.54	0.2	(3)
TOTAL SITE RISKS:	1E-04		6E-05	--		--	
Hypothetical Aggregate Dirt Biker/ATV Rider							
Youth (7-16 years)	1E-05	0.54	5E-06	0.3	0.54	0.1	(3)
Adult	3E-05	0.54	1E-05	0.2	0.54	0.09	(3)
TOTAL SITE RISKS:	4E-05		2E-05	--		--	
Hypothetical Aggregate Wader							
Young Child (1-6 years)	5E-07	0.54	3E-07	0.04	0.54	0.02	(3)
Youth (7-16 years)	4E-07	0.54	2E-07	0.02	0.54	0.01	(3)
Adult	1E-06	0.54	6E-07	0.01	0.54	0.007	(3)
TOTAL SITE RISKS:	2E-06		1E-06	--		--	
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	5E-05	0.54	3E-05	10	0.54	5	(4)
Youth (7-16 years)	5E-05	0.54	2E-05	8	0.54	5	(5)
Adult	2E-04	0.54	1E-04	9	0.54	5	(6)
TOTAL SITE RISKS:	3E-04		2E-04	--		--	
Hypothetical Current Outdoor Worker							
Adult	1E-06			0.01			(3)
TOTAL SITE RISKS:	1E-06			--			
Hypothetical Aggregate Future Resident							
Young Child (1-6 years)	7E-05			3			(7)
Youth (7-16 years)	2E-05			0.6			(3)
Adult	4E-05			0.3			(3)
TOTAL SITE RISKS:	1E-04			--			
Hypothetical Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter							
Young Child (1-6 years)	1E-04	0.54	6E-05	13	0.54	7	(8)
Youth (7-16 years)	8E-05	0.54	4E-05	9	0.54	5	(9)
Adult	3E-04	0.54	2E-04	10	0.54	5	(10)
TOTAL SITE RISKS:	5E-04		3E-04	--		--	

Notes:

(1) An apportionment of 54% is applied to estimate potential risks and hazards for the hypothetical walker/hiker/dog walker, hypothetical dirt biker/ATV rider, hypothetical wader, and hypothetical hunter scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the O'Connor Disposal Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (His) calculated for the receptor without the apportionment of 54% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

(4) Endpoint-specific hazard indices (His) for the Young Child (1-6 years) Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoints: circulatory system (HI=2), GI (HI = 4), skin (HI = 2), and kidney (HI = 2).

(5) Endpoint-specific hazard indices (His) for the Youth (7-16 years) Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoint: GI (HI = 3).

(6) Endpoint-specific hazard indices (His) for the Adult Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoint: circulatory system (HI = 2) and GI (HI=3).

(7) Endpoint-specific hazard indices (His) for the Young Child (1-6 years) Future Resident without the apportionment of 54% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2) and skin (HI = 2).

(8) Endpoint-specific hazard indices (His) for the Young Child (1-6 years) Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 3), GI (HI = 4), skin (HI = 3), kidney (HI = 2), and thyroid (HI=2).

(9) Endpoint-specific hazard indices (His) for the Youth Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2) and GI (HI = 4).

(10) Endpoint-specific hazard indices (His) for the Adult Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter without the apportionment of 54% exceed a target HI of 1 for the following endpoints: circulatory system (HI = 2), GI (HI = 4), and skin (HI = 2).

TABLE 4-3b

SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS AND HAZARDS
CENTRAL TENDENCY
O'Connor Disposal Area of Concern, Ringwood Mines/Landfill Superfund Site

RECEPTOR Exposure Medium - Scenario	Total Excess Lifetime Cancer Risk	(1)	Apportioned Total Excess Lifetime Cancer Risk	Total Non-Cancer Hazard Index (2)	(1)	Apportioned Total Non-Cancer Hazard Index (2)	
Hypothetical Aggregate Walker/Hiker/Dog Walker							
Young Child (1-6 years)	4E-07	0.54	2E-07	0.02	0.54	0.01	(3)
Youth (7-16 years)	4E-08	0.54	2E-08	0.003	0.54	0.002	(3)
Adult	0E+00	0.54	0E+00	0	0.54	0	(3)
TOTAL SITE RISKS:	4E-07		2E-07	--		--	
Hypothetical Aggregate Dirt Biker/ATV Rider							
Youth (7-16 years)	2E-07	0.54	1E-07	0.005	0.54	0.003	(3)
Adult	0E+00	0.54	0E+00	0	0.54	0	(3)
TOTAL SITE RISKS:	2E-07		1E-07	--		--	
Hypothetical Aggregate Wader							
Young Child (1-6 years)	6E-09	0.54	3E-09	0.0004	0.54	0.0002	(3)
Youth (7-16 years)	4E-09	0.54	2E-09	0.0006	0.54	0.0003	(3)
Adult	0E+00	0.54	0E+00	0	0.54	0	(3)
TOTAL SITE RISKS:	1E-08		5E-09	--		--	
Hypothetical Aggregate Hunter							
Young Child (1-6 years)	4E-07	0.54	2E-07	0.03	0.54	0.02	(3)
Youth (7-16 years)	8E-08	0.54	5E-08	0.02	0.54	0.01	(3)
Adult	0E+00	0.54	0E+00	0	0.54	0	(3)
TOTAL SITE RISKS:	5E-07		3E-07	--		--	
Hypothetical Current Outdoor Worker							
Adult	8E-09			0.0005			(3)
TOTAL SITE RISKS:	8E-09			--			
Hypothetical Aggregate Future Resident							
Young Child (1-6 years)	3E-05			1			(3)
Youth (7-16 years)	3E-06			0.3			(3)
Adult	0E+00			0			(3)
TOTAL SITE RISKS:	3E-05			--			
Hypothetical Combined Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, and Hunter							
Young Child (1-6 years)	8E-07	0.54	4E-07	0.05	0.54	0.03	(3)
Youth (7-16 years)	3E-07	0.54	2E-07	0.03	0.54	0.01	(3)
Adult	0E+00	0.54	0E+00	0	0.54	0	(3)
TOTAL SITE RISKS:	1E-06		6E-07	--		--	

Notes:

(1) An apportionment of 54% is applied to estimate potential risks and hazards for the hypothetical walker/hiker/dog walker, hypothetical dirt biker/ATV rider, hypothetical wader, and hypothetical hunter scenarios to account for the portion of the Ringwood Mines/Landfill Superfund Site occupied by the O'Connor Disposal Area of Concern.

(2) In accordance with standard risk assessment practice, estimated potential hazard indices are not summed across age groups to estimate "lifetime" hazard indices.

(3) Endpoint-specific hazard indices (HIs) calculated for the receptor without the apportionment of 54% do not exceed a target HI of 1 for any endpoint evaluated (circulatory system, whole body, nervous system, development, GI, skin, immune system, kidney, liver, respiratory system, or thyroid).

APPENDIX IV – Administrative Record Index

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

06/25/2014 **REGION ID: 02**

Site Name: RINGWOOD MINES/LANDFILL
CERCLIS ID: NJD980529739
OUID: 02
SSID: 0262
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Beginning Bates:	Ending Bates:	Addressee Name:	Addressee Organization:	Author Name:	Author Organization:
691466	06/25/2014	ADMINISTRATIVE RECORD INDEX FOR OU2 FOR THE RINGWOOD MINES / LANDFILL SITE	16	[INDEX]			[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]
212537	01/01/1111	PUBLIC HEALTH ASSESSMENT - PUBLIC COMMENT RELEASE FOR THE RINGWOOD MINES / LANDFILL SITE	98	[REPORT]	R2-0000001	R2-0000098	[]	[]	[,]	[NJ DEPT OF HEALTH AND SENIOR SERVICES]
212582	01/01/1111	COMMENTS FROM THE SOCIAL ACTION COMMITTEE OF TEMPLE SHALOM IN FAVOR OF FULL REMEDIATION FOR REMEDIATION FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0000099	R2-0000099	[GOWERS, JOSEPH]	[EPA, REGION 2]	[RUBINSTEIN, ALLAN]	[SOCIAL ACTION COMMITTEE OF TEMPLE SHALOM]
212583	01/01/1111	COMMENTS FROM COMMUNITY ADVISORY GROUP MEMBER FOR THE FULL REMOVAL OF ALL TOXIC WASTE FROM THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0000100	R2-0000100	[GOWERS, JOSEPH]	[EPA, REGION 2]	[YAROSSI, ANITA]	[PUBLIC CITIZEN]
212584	01/01/1111	COMMENTS SUPPORTING A FULL CLEANUP OF TOXIC WASTE AND THAT CAPPING IS NOT A VIABLE OPTION FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0000101	R2-0000101	[GOWERS, JOSEPH]	[EPA, REGION 2]	[YAROSSI, ANITA]	[PUBLIC CITIZEN]
212542	09/21/2005	ADMINISTRATIVE ORDER ON CONSENT AND SETTLEMENT AGREEMENT FOR INVESTIGATIVE WORK CERCLA NO. 02-2005-2013 FOR THE RINGWOOD MINES / LANDFILL SITE	60	[ORDER]	R2-0000102	R2-0000161	[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]
212543	09/21/2005	ADMINISTRATIVE ORDER FOR INVESTIGATIVE WORK CERCLA NO. 02-2005-2033 FOR THE RINGWOOD MINES / LANDFILL SITE	47	[ORDER]	R2-0000162	R2-0000208	[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]
206775	10/03/2005	RESULTS OF THE FIELD RECONNAISSANCE SURVEY FOR THE RINGWOOD MINES/LANDFILL SITE	47	[REPORT]	R2-0000209	R2-0000255	[,]	[FORD MOTOR CO]	[,]	[ARCADIS G&M, INC.]
212549	09/12/2006	REVISED DRAFT PLAN FOR THE INVESTIGATION OF THE RINGWOOD MINES / LANDFILL SITE	22	[REPORT]	R2-0000256	R2-0000277	[,]	[FORD MOTOR CO]	[,]	[ARCADIS G&M, INC.]
212550	09/12/2006	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS REGARDING PLAN FOR THE INVESTIGATION OF THE O'CONNOR DISPOSAL AREA MODULE 7 (REVISED DRAFT) FOR THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0000278	R2-0000279	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

06/25/2014 **REGION ID: 02**

Site Name: RINGWOOD MINES/LANDFILL
CERCLIS ID: NJD980529739
OUID: 02
SSID: 0262
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Beginning Bates:	Ending Bates:	Addressee Name:	Addressee Organization:	Author Name:	Author Organization:
212680	10/13/2006	TECHNICAL MEMORANDUM FOR POST EXCAVATION ANALYTICAL RESULTS FOR SLUDGE REMOVAL AREAS 1 AND 2 FOR THE RINGWOOD MINES/LANDFILL SITE	20	[MEMORANDUM]	R2-0000280	R2-0000299	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]
212551	11/09/2006	U.S. ENVIRONMENTAL PROTECTION AGENCY AND NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION APPROVAL OF THE SEPTEMBER 2006 REVISED O'CONNOR DISPOSAL AREA INVESTIGATON WORK PLAN FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0000300	R2-0000300	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206800	03/13/2007	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 09/26/2006 - 10/05/2006 FOR THE RINGWOOD MINES/LANDFILL SITE	105	[MEMORANDUM]	R2-0000301	R2-0000405	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ALBRIGHT, GREGORY R, ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212689	04/13/2007	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 9 FOR THE RINGWOOD MINES/LANDFILL SITE	24	[MEMORANDUM]	R2-0000406	R2-0000429	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]
212692	06/18/2007	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 11 FOR THE RINGWOOD MINES/LANDFILL SITE	13	[MEMORANDUM]	R2-0000430	R2-0000442	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]
212690	09/19/2007	TECHNICAL MEMORANDUM FOR REMOVAL ACTIVITIES - WESTERN AREA IN SLUDGE REMOVAL AREA 9 FOR THE RINGWOOD MINES/LANDFILL SITE	9	[MEMORANDUM]	R2-0000443	R2-0000451	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]
206801	10/25/2007	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 04/02/2007 - 04/18/2007 FOR THE RINGWOOD MINES/LANDFILL SITE	125	[MEMORANDUM]	R2-0000452	R2-0000576	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ALBRIGHT, GREGORY R, ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212691	12/01/2007	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 10 FOR THE RINGWOOD MINES/LANDFILL SITE	13	[MEMORANDUM]	R2-0000577	R2-0000589	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]

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206806	02/20/2008	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 10/08/2007 - 10/17/2007 FOR THE RINGWOOD MINES/LANDFILL SITE	97	[MEMORANDUM]	R2-0000590	R2-0000686	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212685	04/10/2008	REVISED TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 10 FOR THE RINGWOOD MINES/LANDFILL SITE	9	[MEMORANDUM]	R2-0000687	R2-0000695	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS G&M, INC.]
206789	06/09/2008	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE TEST PIT INVESTIGATION FOR THE RINGWOOD MINES/LANDFILL SITE	118	[MEMORANDUM]	R2-0000696	R2-0000813	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212683	06/18/2008	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 6 FOR THE RINGWOOD MINES/LANDFILL SITE	30	[MEMORANDUM]	R2-0000814	R2-0000843	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206802	10/29/2008	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 04/28//2008 - 05/09/2008 FOR THE RINGWOOD MINES/LANDFILL SITE	54	[MEMORANDUM]	R2-0000844	R2-0000897	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206807	01/14/2009	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 09/08/2008 - 09/22/2008 FOR THE RINGWOOD MINES/LANDFILL SITE	130	[MEMORANDUM]	R2-0000898	R2-0001027	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212531	03/19/2009	DRAFT TECHNICAL MEMORANDUM - PETERS MINE PIT INVESTIGATION FOR THE RINGWOOD MINES / LANDFILL SITE	197	[MEMORANDUM]	R2-0001028	R2-0001224	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206804	09/28/2009	DRAFT TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 06/30/2009 - 07/17/2009 FOR THE RINGWOOD MINES/LANDFILL SITE	209	[MEMORANDUM]	R2-0001225	R2-0001433	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212681	03/25/2010	TECHNICAL MEMORANDUM FOR BACKFILL ON MINE TAILING REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 3 FOR THE RINGWOOD MINES/LANDFILL SITE	3	[MEMORANDUM]	R2-0001434	R2-0001436	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS INCORPORATED]

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212686	03/30/2010	TECHNICAL MEMORANDUM FOR BACKFILL / RESTORE ON MINE TAILINGS REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 4 FOR THE RINGWOOD MINES/LANDFILL SITE	3	[MEMORANDUM]	R2-0001437	R2-0001439	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS INCORPORATED]
212682	04/01/2010	TECHNICAL MEMORANDUM FOR BACKFILL ON MINE TAILING REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 3 FOR THE RINGWOOD MINES/LANDFILL SITE	3	[MEMORANDUM]	R2-0001440	R2-0001442	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS INCORPORATED]
212687	04/01/2010	TECHNICAL MEMORANDUM FOR MINE TAILING REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 7 FOR THE RINGWOOD MINES/LANDFILL SITE	3	[MEMORANDUM]	R2-0001443	R2-0001445	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS INCORPORATED]
212688	05/07/2010	TECHNICAL MEMORANDUM FOR MINE TAILING REMOVAL ACTIVITIES - SCRAP AREA RESULTS IN SLUDGE REMOVAL AREA 7 FOR THE RINGWOOD MINES/LANDFILL SITE	3	[MEMORANDUM]	R2-0001446	R2-0001448	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS INCORPORATED]
206770	06/01/2010	FINAL DATA SUMMARY REPORT FOR RINGWOOD BIOLOGICAL SAMPLING EFFORTS FOR 2006 THROUGH 2009 FOR THE RINGWOOD MINES/LANDFILL SITE	662	[REPORT]	R2-0001449	R2-0002110	[]	[]	[COOKE, DAN , SPRENGER, MARK]	[EPA/ERT, LOCKHEED MARTIN/REAC]
212530	06/07/2010	US EPA AND NJ DEP APPROVAL WITH PROVISIONS OF THE 03/19/2010 PETERS MINE PIT INVESTIGATION TECHNICAL MEMORANDUM FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0002111	R2-0002111	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206774	06/22/2010	TECHNICAL MEMORANDUM FOR CANNON MINE PIT INVESTIGATION FOR THE RINGWOOD MINES/LANDFILL SITE	64	[MEMORANDUM]	R2-0002112	R2-0002175	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206791	07/08/2010	DRAFT TECHNICAL MEMORANDUM FOR SUPPLEMENTAL TEST TRENCH INVESTIGATION FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	72	[MEMORANDUM]	R2-0002176	R2-0002247	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212544	07/22/2010	UNILATERAL ADMINISTRATIVE ORDER FOR REMEDIAL INVESTIGATION AND FEASIBILITY STUDY CERCLA NO. 02-2010-2026 FOR THE RINGWOOD MINES / LANDFILL SITE	49	[ORDER]	R2-0002248	R2-0002296	[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]

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212684	08/24/2010	TECHNICAL MEMORANDUM ADDENDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES IN SLUDGE REMOVAL AREA 6 FOR THE RINGWOOD MINES/LANDFILL SITE	36	[MEMORANDUM]	R2-0002297	R2-0002332	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206805	09/28/2010	TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER SAMPLING FOR 05/25/2010 - 06/30/2010 FOR THE RINGWOOD MINES/LANDFILL SITE	147	[MEMORANDUM]	R2-0002333	R2-0002479	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212527	01/03/2011	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS REGARDING THE OCTOBER 2011 REVISED SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR THE PETERS MINE AREA AT THE RINGWOOD MINES / LANDFILL SITE	250	[LETTER]	R2-0002480	R2-0002729	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206773	02/10/2011	APPROVAL OF THE TECHNICAL MEMORANDUM FOR CANNON MINE PIT INVESTIGATION DATED 06/22/2010 FOR THE RINGWOOD MINES/LANDFILL SITE	2	[LETTER]	R2-0002730	R2-0002731	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206790	11/18/2011	APPROVAL OF THE TECHNICAL MEMORANDUM FOR SUPPLEMENTAL TEST TRENCH INVESTIGATION FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	3	[LETTER]	R2-0002732	R2-0002734	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206803	12/07/2011	TECHNICAL MEMORANDUM FOR SITE-WIDE GROUNDWATER AND SURFACE WATER SAMPLING FOR 05/16/2011 - 06/10/2011 FOR THE RINGWOOD MINES/LANDFILL SITE	120	[MEMORANDUM]	R2-0002735	R2-0002854	[BUSSA, BRIAN , GOWERS, JOSEPH]	[EPA, REGION 2, FORD MOTOR CO]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212538	12/13/2011	HEALTH CONSULTATION - CANCER INCIDENCE (1979-2008) IN THE POPULATION LIVING NEAR THE RINGWOOD MINES / LANDFILL SITE	19	[REPORT]	R2-0002855	R2-0002873	[]	[]	[,]	[NJ DEPT OF HEALTH AND SENIOR SERVICES]
212539	12/13/2011	HEALTH CONSULTATION - CHILDHOOD BLOOD LEAD DATA (JULY 1999 - DECEMBER 2010) IN THE POPULATION LIVING NEAR THE RINGWOOD MINES / LANDFILL SITE	15	[REPORT]	R2-0002874	R2-0002888	[]	[]	[,]	[NJ DEPT OF HEALTH AND SENIOR SERVICES]
212522	03/01/2012	REVISED BASELINE HUMAN HEALTH RISK ASSESSMENT FOR PETERS MINE PIT AREA OF CONCERN AT THE RINGWOOD MINES / LANDFILL SITE	219	[REPORT]	R2-0002889	R2-0003107	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]

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212528	03/07/2012	US EPA COMMENTS ON THE JANUARY 2012 REVISED SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR THE PETERS MINE AREA AT THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0003108	R2-0003109	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212523	03/24/2012	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS ON THE NOVEMBER 2011 BASELINE HUMAN HEALTH RISK ASSESSMENT FOR PETERS MINE PIT AREA OF CONCERN AT THE RINGWOOD MINES / LANDFILL SITE	6	[LETTER]	R2-0003110	R2-0003115	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212575	04/24/2012	RESOLUTION TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY NATIONAL REMEDY REVIEW BOARD FOR THE RINGWOOD MINES / LANDFILL SITE	3	[OTHER]	R2-0003116	R2-0003118	[]	[]	[,]	[RINGWOOD MINES/LANDFILL COMMUNITY ADVISORY GROUP]
212521	04/25/2012	US EPA APPROVAL OF THE MARCH 2012 REVISED BASELINE HUMAN HEALTH RISK ASSESSMENT FOR THE PETERS MINE PIT FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003119	R2-0003119	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212593	05/01/2012	COMMENTS APPEALING FOR A COMPLETE CLEAN-UP AND RECLAMATION OF ALL CONTAMINATED AREAS AT THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0003120	R2-0003121	[GOWERS, JOSEPH]	[EPA, REGION 2]	[MILLIGAN, VIVIAN]	[PUBLIC CITIZEN]
212571	05/03/2012	"48 HOUR NOTICE OF COUNCIL MEETING" ON 5/10/2012 FOR THE RINGWOOD MINES / LANDFILL SITE	1	[NOTICE]	R2-0003122	R2-0003122	[]	[]	[,]	[OFFICE OF THE MUNICIPAL CLERK, RINGWOOD, NJ]
206419	05/08/2012	MAPS FOR THE RINGWOOD MINES/LANDFILL SITE	8	[MAP]	R2-0003123	R2-0003130	[]	[]	[]	[]
212587	05/08/2012	COMMENTS AGAINST FORD CAPPING THE TOXIC WASTE AND SUPPORTING A FULL AND COMPLETE CLEAN UP AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003131	R2-0003131	[GOWERS, JOSEPH]	[EPA, REGION 2]	[CANZANO, JEAN]	[PUBLIC CITIZEN]
212585	05/10/2012	COMMENTS FROM THE RAMAPOUGH LENAPE NATION SUPPORTING A FULL REMEDIATION AND COMPLETE REMOVAL OF ALL WASTES FROM THE RINGWOOD MINES / LANDFILL SITE	3	[LETTER]	R2-0003132	R2-0003134	[GOWERS, JOSEPH]	[EPA, REGION 2]	[DeFREEZE, CHARLENE]	[RAMAPOUGH LENAPE NATION]

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212586	05/10/2012	COMMENTS FROM THE CHIEF OF THE RAMAPOUGH LENAPE NATION SUPPORTING A FULL REMEDIATION AND COMPLETE REMOVAL OF ALL WASTES FROM THE RINGWOOD MINES / LANDFILL SITE	3	[LETTER]	R2-0003135	R2-0003137	[GOWERS, JOSEPH]	[EPA, REGION 2]	[CHIEF MANN,]	[RAMAPOUGH LENAPE NATION]
212576	05/12/2012	CORRESPONDENCE SUPPORTING A RESOLUTION CALLING FOR THE FULL REMOVAL OF ALL WASTE FROM THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003138	R2-0003138	[,]	[NATIONAL REMEDY REVIEW BOARD]	[,]	[COMMON GOOD PRODUCTIONS]
212574	05/14/2012	TRANSMITTAL OF THE RESOLUTION TO THE NATIONAL REMEDY REVIEW BOARD FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003139	R2-0003139	[GOWERS, JOSEPH]	[EPA, REGION 2]	[,]	[RINGWOOD MINES/LANDFILL COMMUNITY ADVISORY GROUP]
212591	05/14/2012	COMMENTS REQUESTING THE FULL REMOVAL OF ALL WASTE AND NOT CAPPING AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003140	R2-0003140	[GOWERS, JOSEPH]	[EPA, REGION 2]	[CAROL, RITA]	[PUBLIC CITIZEN]
212592	05/14/2012	COMMENTS ASKING TO MAKE A DECISION ON THE RESIDENTS LIVES NOT MONEY AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003141	R2-0003141	[GOWERS, JOSEPH]	[EPA, REGION 2]	[MILLIGAN, VIVIAN]	[PUBLIC CITIZEN]
212581	05/15/2012	CORRESPONDENCE REGARDING THE SIERRA CLUB'S OPPOSITION TO THE CURRENT PLAN FOR REMEDIATION FOR THE RINGWOOD MINES / LANDFILL SITE	3	[LETTER]	R2-0003142	R2-0003144	[ENCK, JUDITH A]	[EPA, REGION 2]	[TITTEL, JEFF]	[SIERRA CLUB]
212588	05/15/2012	COMMENTS SUPPORTING A REMEDY THAT WILL FULLY AND EFFECTIVELY PROTECT HUMAN HEALTH AND THE ENVIRONMENT AND OPPOSING CAPPING AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003145	R2-0003145	[GOWERS, JOSEPH]	[EPA, REGION 2]	[MARAZITI, JOSEPH]	[MARAZATI FALCON & HEALEY]
212577	05/16/2012	CORRESPONDENCE SUPPORTING THE FULL REMEDIATION OF THE RINGWOOD MINES / LANDFILL SITE	4	[LETTER]	R2-0003146	R2-0003149	[GOWERS, JOSEPH]	[EPA, REGION 2]	[,]	[EDISON WETLANDS ASSOCIATIONS, INC.]
212579	05/17/2012	CORRESPONDENCE REGARDING THE RINGWOD MINES/LANDFILL COMMUNITY ADVISORY GROUP DOES NOT AGREE WITH OR SUPPORT ALL STATEMENTS MADE BY OR ON BEHALF OF THE COMMUNITY ADVISORY GROUP FOR THE RINGWOOD MINES / LANDFILL SITE	6	[LETTER]	R2-0003150	R2-0003155	[GOWERS, JOSEPH]	[EPA, REGION 2]	[SCHAFFER, LINDA]	[MAYOR, BOROUGH OF RINGWOOD]

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212580	05/17/2012	CORRESPONDENCE REGARDING COLLECTIVE INTEREST IN HAVING ALL TOXIC MATERIALS REMOVED FROM THE SITE FOR THE HEALTH AND WELL-BEING OF THE NATIVE AMERICAN RAMAPOUGH COMMUNITY FOR THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0003156	R2-0003157	[JACKSON, LISA]	[EPA, REGION 2]	[LAUTENBERG, FRANK R, MENENDEZ, ROBERT]	[UNITED STATES SENATE]
212589	05/17/2012	COMMENTS FROM A MEMBER OF THE SOCIAL ACTION COMMITTEE OF TEMPLE SHALOM SUPPORTING A FULL AND EFFECTIVE REMOVAL OF WASTE AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0003158	R2-0003158	[GOWERS, JOSEPH]	[EPA, REGION 2]	[CAROL, RITA]	[PUBLIC CITIZEN]
212572	05/18/2012	OVERVIEW OF SITE CONDITIONS AND FEASIBLE REMEDIAL ACTION ALTERNATIVES FOR PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT AT THE PETERS MINE PIT AREA, O'CONNOR DISPOSAL AREA, AND CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	20	[REPORT]	R2-0003159	R2-0003178	[,]	[NATIONAL REMEDY REVIEW BOARD]	[,]	[BOROUGH OF RINGWOOD]
212573	05/18/2012	CORRESPONDENCE REGARDING STAKEHOLDER SUBMISSION TO THE EPA NATIONAL REMEDY REVIEW BOARD FOR THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0003179	R2-0003180	[GOWERS, JOSEPH]	[EPA, REGION 2]	[,]	[BOROUGH OF RINGWOOD]
212578	05/18/2012	PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT THROUGH SOURCE REMOVAL, CAPPING, AND BENEFICIAL REUSE FOR THE RINGWOOD MINES / LANDFILL SITE	20	[REPORT]	R2-0003181	R2-0003200	[,]	[NATIONAL REMEDY REVIEW BOARD]	[,]	[FORD MOTOR CO]
212524	07/02/2012	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS ON THE REVISED REMEDIAL INVESTIGATION REPORT FOR THE PETERS MINE AREA AT THE RINGWOOD MINES / LANDFILL SITE	580	[LETTER]	R2-0003201	R2-0003780	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206788	08/01/2012	REVISED SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT REPORT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	211	[REPORT]	R2-0003781	R2-0003991	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]

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206787	08/24/2012	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE 06/2012 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	2	[LETTER]	R2-0003992	R2-0003993	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206786	09/13/2012	APPROVAL OF THE 08/2012 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0003994	R2-0003994	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212693	09/19/2012	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES - REQUEST FOR COMPLETION APPROVAL OF EXCAVATION ACTIVITIES IN SLUDGE REMOVAL AREA 13 FOR THE RINGWOOD MINES/LANDFILL SITE	53	[MEMORANDUM]	R2-0003995	R2-0004047	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212525	11/27/2012	US EPA APPROVAL OF THE JULY 2012 REVISED REMEDIAL INVESTIGATION REPORT FOR THE PETERS MINE PIT AREA AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0004048	R2-0004048	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212518	01/17/2013	US EPA APPROVAL OF THE DECEMBER 2012 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT (SLERA) FOR THE CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0004049	R2-0004049	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212520	02/01/2013	SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR THE CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	133	[REPORT]	R2-0004050	R2-0004182	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
212529	02/01/2013	US EPA APPROVAL WITH PROVISIONS OF THE DECEMBER 2012 REVISED BASELINE ECOLOGICAL RISK ASSESSMENT FOR THE PETERS MINE PIT AREA AT THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0004183	R2-0004183	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212519	02/07/2013	FORD MOTOR COMPANY RESPONSE TO US EPA PROVISIONAL APPROVAL REGARDING THE DECEMBER 2012 REVISED SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT FOR THE CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0004184	R2-0004184	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]

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212526	02/22/2013	FORD MOTOR COMPANY RESPONSE TO CONDITIONAL APPROVAL OF THE DECEMBER 2012 REVISED BASELINE ECOLOGICAL RISK ASSESSMENT FOR THE PETERS MINE PIT AREA AT THE RINGWOOD MINES / LANDFILL SITE	33	[LETTER]	R2-0004185	R2-0004217	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212694	03/07/2013	TECHNICAL MEMORANDUM FOR SURFICIAL PAINT SLUDGE REMOVAL ACTIVITIES - REVISED REQUEST FOR COMPLETION APPROVAL OF EXCAVATION ACTIVITIES IN SLUDGE REMOVAL AREA 14 FOR THE RINGWOOD MINES/LANDFILL SITE	6	[MEMORANDUM]	R2-0004218	R2-0004223	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212515	05/21/2013	BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) FOR THE CANNON MINE PIT (CMP) FOR THE RINGWOOD MINES / LANDFILL SITE	56	[LETTER]	R2-0004224	R2-0004279	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
212517	05/21/2013	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS REGARDING THE FEBRUARY 2013 BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) FOR THE CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	11	[LETTER]	R2-0004280	R2-0004290	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
205782	05/22/2013	POSITION PAPER ON REMEDY SELECTION FOR THE RINGWOOD MINES/LANDFILL SITE	4	[REPORT]	R2-0004291	R2-0004294	[]	[]	[]	[]
205783	05/22/2013	COMMENTS ON FORD MOTOR COMPANY FOR THE RINGWOOD MINES/LANDFILL SITE	1	[E MAIL MESSAGE]	R2-0004295	R2-0004295	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BOLASCI, JANE S]	[NONE]
205784	05/23/2013	COMMENTS ON FORD MOTOR COMPANY FOR THE RINGWOOD MINES/LANDFILL SITE	1	[E MAIL MESSAGE]	R2-0004296	R2-0004296	[GOWERS, JOSEPH]	[EPA, REGION 2]	[NEMETH, JOHN]	[NONE]
205785	05/23/2013	COMMENTS FOR THE RINGWOOD MINES/LANDFILL SITE	1	[E MAIL MESSAGE]	R2-0004297	R2-0004297	[GOWERS, JOSEPH]	[EPA, REGION 2]	[PINCHES, MICHAEL]	[NONE]
206417	05/23/2013	OVERVIEW OF SITE CONDITIONS AND FEASIBLE REMEDIAL ACTION ALTERNATIVES FOR PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT AT THE RINGWOOD MINES / LANDFILL SITE	17	[REPORT]	R2-0004298	R2-0004314	[]	[]	[]	[]

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205786	05/28/2013	TRANSMITTAL OF THE PATH TO A FINAL REMEDY FOR CONSIDERATION BY THE NATIONAL REMEDY REVIEW BOARD (NRRB) FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0004315	R2-0004315	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
205787	05/28/2013	COMMENTS FOR THE NATIONAL REMEDIATION REVIEW BOARD FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0004316	R2-0004316	[]	[]	[MILLIGAN, VIVIAN]	[NONE]
205788	05/28/2013	THE PATH TO A FINAL REMEDY FOR CONSIDERATION BY THE NATIONAL REMEDY REVIEW BOARD (NRRB) FOR THE RINGWOOD MINES/LANDFILL SITE	48	[REPORT]	R2-0004317	R2-0004364	[,]	[NATIONAL REMEDY REVIEW BOARD]	[,]	[FORD MOTOR CO]
206411	05/28/2013	CORRESPONDENCE REGARDING FEASIBLE SOLUTION FOR THE RINGWOOD MINES/LANDFILL SITE	2	[E MAIL MESSAGE]	R2-0004365	R2-0004366	[GOWERS, JOSEPH]	[EPA, REGION 2]	[MCCAFFREY, EDWARD J]	[NONE]
206412	05/28/2013	PUBLIC COMMENTS ON CAPPING FOR THE RINGWOOD MINES/LANDFILL SITE	1	[E MAIL MESSAGE]	R2-0004367	R2-0004367	[GOWERS, JOSEPH]	[EPA, REGION 2]	[JAGIELLO, CAROL]	[NONE]
206414	05/28/2013	CORRESPONDENCE REGARDING OPPOSITION TO REMEDIATION OF RINGWOOD MINES FOR THE RINGWOOD MINES/LANDFILL SITE	3	[LETTER]	R2-0004368	R2-0004370	[ENCK, JUDITH A]	[EPA, REGION 2]	[TITTEL, JEFF]	[SIERRA CLUB]
206418	05/28/2013	FACTORING THE FINDINGS OF THE GROUNDWATER REMEDIAL INVESTIGATION INTO REMEDIAL ACTION DECISION MAKING FOR THE RINGWOOD MINES/LANDFILL SITE	16	[OTHER]	R2-0004371	R2-0004386	[,]	[NATIONAL REMEDY REVIEW BOARD]	[,]	[BOROUGH OF RINGWOOD]
206416	06/01/2013	SYNOPSIS OF EXPERIENCE AND QUALIFICATIONS FOR THE RINGWOOD MINES/LANDFILL SITE	17	[OTHER]	R2-0004387	R2-0004403	[]	[]	[CHAPIN, RICHARD W]	[NONE]
206782	06/01/2013	REVISED REMEDIAL INVESTIGATION REPORT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	725	[REPORT]	R2-0004404	R2-0005128	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
206792	06/01/2013	REVISED REMEDIAL INVESTIGATION REPORT FOR CANNON MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	457	[REPORT]	R2-0005129	R2-0005585	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
206772	06/07/2013	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE 01/2013 DRAFT REMEDIAL INVESTIGATION REPORT FOR CANNON MINE PIT FOR THE RINGWOOD MINES/LANDFILL SITE	4	[LETTER]	R2-0005586	R2-0005589	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]

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206413	06/09/2013	COMMENTS FOR THE NATIONAL REMEDIATION REVIEW BOARD FOR THE RINGWOOD MINES/LANDFILL SITE	3	[LETTER]	R2-0005590	R2-0005592	[GOWERS, JOSEPH]	[EPA, REGION 2]	[GUINAN, JAMES]	[NONE]
206781	06/10/2013	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE REVISED REMEDIAL INVESTIGATION REPORT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	4	[LETTER]	R2-0005593	R2-0005596	[GOWERS, JOSEPH]	[EPA, REGION 2]	[ZIMMERMAN, ERICH]	[ARCADIS U.S., INC]
206415	06/11/2013	COMMENTS FOR THE NATIONAL REMEDIATION REVIEW BOARD FOR THE RINGWOOD MINES/LANDFILL SITE	8	[LETTER]	R2-0005597	R2-0005604	[GOWERS, JOSEPH]	[EPA, REGION 2]	[SPIEGEL, ROBERT , TITTEL, JEFF]	[EDISON WETLANDS ASSOCIATIONS, INC., SIERRA CLUB]
206771	06/28/2013	APPROVAL OF THE 06/2013 REMEDIAL INVESTIGATION REPORT FOR CANNON MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0005605	R2-0005605	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206780	06/28/2013	APPROVAL OF THE 06/2013 REMEDIAL INVESTIGATION REPORT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0005606	R2-0005606	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
212552	06/28/2013	FORD MOTOR COMPANY'S SUPPLEMENTAL INFORMATION IN RESPONSE TO UNITED STATES GEOLOGICAL SURVEY (USGS) COMMENTS ON THE PETERS MINE PIT AREA REMEDIAL INVESTIGATION REPORT FOR THE RINGWOOD MINES / LANDFILL SITE	67	[LETTER]	R2-0005607	R2-0005673	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
212540	07/01/2013	FINAL ENVIRONMENTAL JUSTICE ASSESSMENT FOR THE RINGWOOD MINES / LANDFILL SITE	18	[REPORT]	R2-0005674	R2-0005691	[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]
212541	07/01/2013	ADDENDUM TO THE ENVIRONMENTAL JUSTICE ASSESSMENTAND EPA'S FOLLOW UP ACTIONS FOR THE RINGWOOD MINES / LANDFILL SITE	3	[REPORT]	R2-0005692	R2-0005694	[]	[]	[,]	[US ENVIRONMENTAL PROTECTION AGENCY]
212516	07/02/2013	US EPA APPROVAL OF THE MAY 2013 BASELINE ECOLOGICAL RISK ASSESSMENT FOR THE CANNON MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0005695	R2-0005695	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]

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212570	07/17/2013	CORRESPONDENCE REGARDING PROPOSED EXCAVATION REMEDIES AT O'CONNOR'S DISPOSAL AREA AND PETER'S MINE PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	9	[LETTER]	R2-0005696	R2-0005704	[GENGEL, GARY P]	[LATHAM & WATKINS]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
206784	07/23/2013	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE BASELINE ECOLOGICAL RISK ASSESSMENT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	4	[LETTER]	R2-0005705	R2-0005708	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
206785	07/23/2013	BASELINE ECOLOGICAL RISK ASSESSMENT FOR O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	54	[MEMORANDUM]	R2-0005709	R2-0005762	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
206783	08/12/2013	APPROVAL OF THE 07/2013 BASELINE ECOLOGICAL RISK ASSESSMENT FOR THE O'CONNOR DISPOSAL AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0005763	R2-0005763	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206795	09/01/2013	REVISED FEASIBILITY STUDY REPORT FOR CANNON MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	427	[REPORT]	R2-0005764	R2-0006190	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
206798	09/01/2013	REVISED FEASIBILITY STUDY REPORT FOR PETERS MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	204	[REPORT]	R2-0006191	R2-0006394	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
212545	09/11/2013	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS REGARDING DRAFT BASELINE HUMAN HEALTH RISK ASSESSMENT FOR THE CANNON MINE PIT AREA OF CONCERN FOR THE RINGWOOD MINES / LANDFILL SITE	334	[REPORT]	R2-0006395	R2-0006728	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
212548	09/11/2013	FORD MOTOR COMPANY RESPONSE TO US EPA COMMENTS REGARDING DRAFT BASELINE HUMAN HEALTH RISK ASSESSMENT FOR THE O'CONNOR DISPOSAL AREA OF CONCERN FOR THE RINGWOOD MINES / LANDFILL SITE	432	[LETTER]	R2-0006729	R2-0007160	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
212546	09/12/2013	US EPA APPROVAL OF THE SEPTEMBER 2012 BASELINE HUMAN HEALTH RISK ASSESSMENT FOR THE CANNON MINE PIT AREA OF CONCERN FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0007161	R2-0007161	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]

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212547	09/12/2013	US EPA APPROVAL OF THE SEPTEMBER 2013 BASELINE HUMAN HEALTH RISK ASSESSMENT FOR THE O'CONNOR DISPOSAL AREA OF CONCERN FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0007162	R2-0007162	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206797	09/18/2013	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE 10/2011 DRAFT FEASIBILITY STUDY REPORT FOR PETERS MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	7	[LETTER]	R2-0007163	R2-0007169	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
206794	09/19/2013	ARCADIS U.S. INCORPORATED'S RESPONSE TO US EPA COMMENTS ON THE 04/2012 DRAFT FEASIBILITY STUDY REPORT FOR CANNON MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	7	[LETTER]	R2-0007170	R2-0007176	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
206793	09/20/2013	APPROVAL OF THE 09/2013 FEASIBILITY STUDY REPORT FOR CANNON MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0007177	R2-0007177	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
206796	09/20/2013	APPROVAL OF THE 09/2013 FEASIBILITY STUDY REPORT FOR PETERS MINE PIT AREA FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0007178	R2-0007178	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
205781	09/25/2013	QUALITATIVE ASSESSMENT OF FUTURE RECYCLING CENTER WORKER AT THE O'CONNER DISPOSAL AREA OF CONCERN FOR THE RINGWOOD MINES/LANDFILL SITE	15	[MEMORANDUM]	R2-0007179	R2-0007193	[GOWERS, JOSEPH]	[EPA, REGION 2]	[WEAVER, ALISSA]	[NONE]
205780	09/26/2013	CORRESPONDENCE REGARDING REVIEW OF QUALITATIVE ASSESSMENT OF FUTURE RECYCLING CENTER WORKER AT THE O'CONNER DISPOSAL AREA OF CONCERN FOR THE RINGWOOD MINES/LANDFILL SITE	1	[LETTER]	R2-0007194	R2-0007194	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
692122	09/26/2013	FORD MOTOR COMPANY'S RESPONSE TO US EPA COMMENTS REGARDING THE DRAFT MAY 2012 FEASIBILITY STUDY REPORT AND TRANSMITTAL OF REVISED SEPTEMBER 2013 FEASIBILITY STUDY REPORT FOR THE O'CONOR DISPOSAL AREA OF CONCERN AT THE RINGWOOD MINES / LANDFILL SITE	5	[LETTER]	R2-0007195	R2-0007199	[GOWERS, JOSEPH]	[EPA, REGION 2]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]

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692123	09/26/2013	FEASIBILITY STUDY REPORT - REVISED SEPTEMBER 2013 FOR THE O'CONNOR DISPOSAL AREA OF CONCERN AT THE RINGWOOD MINES / LANDFILL SITE	224	[REPORT]	R2-0007200	R2-0007423	[]	[]	[BONSTEEL, JEFFREY]	[ARCADIS U.S., INC]
692124	09/27/2013	US EPA HAS COMPLETED REVIEW OF ARCADIS' FEASIBILITY STUDY REPORT - REVISED SEPTEMBER 2013 FOR THE O'CONNOR DISPOSAL AREA OF CONCERN AT THE RINGWOOD MINES / LANDFILL SITE	1	[REPORT]	R2-0007424	R2-0007424	[BUSSA, BRIAN]	[FORD MOTOR CO]	[GOWERS, JOSEPH]	[EPA, REGION 2]
692130	09/30/2013	NATIONAL REMEDY REVIEW BOARD COMMENTS FOR THE RINGWOOD MINES / LANDFILL SITE	6	[MEMORANDUM]	R2-0007425	R2-0007430	[MUGDAN, WALTER E]	[EPA, REGION 2]	[LEGARE, AMY R]	[EPA]
692127	09/30/2013	US EPA RESPONSES TO NATIONAL REMEDY REVIEW BOARD RECOMMENDATIONS FOR THE RINGWOOD MINES / LANDFILL SITE	8	[MEMORANDUM]	R2-0007431	R2-0007438	[LEGARE, AMY R]	[EPA]	[MUGDAN, WALTER E]	[EPA, REGION 2]
692129	09/30/2013	PROPOSED PLAN FOR OU2 FOR THE RINGWOOD MINES / LANDFILL SITE	32	[PLAN]	R2-0007439	R2-0007470				[US ENVIRONMENTAL PROTECTION AGENCY]
172924	10/03/2005	RESULTS OF FIELD RECONNAISSANCE SURVEY FOR THE RINGWOOD MINES / LANDFILL SITE	44	[REPORT]	R2-0007471	R2-0007514	[,]	[FORD MOTOR CO]	[,]	[ARCADIS G&M, INC.]
172921	12/23/2005	PLAN FOR INVESTIGATION - MODULE 3: PETERS MINE PIT AREA - FOR THE RINGWOOD MINES / LANDFILL SITE	27	[PLAN]	R2-0007515	R2-0007541	[,]	[FORD MOTOR CO]	[,]	[ARCADIS G&M, INC.]
172918	10/11/2006	GEOPHYSICAL REPORT FOR CANNON MINE PIT/NEW LONDON PIT AREA FOR THE RINGWOOD MINES / LANDFILL SITE	44	[REPORT]	R2-0007542	R2-0007585	[,]	[ARCADIS]	[,]	[VIBRA-TECH ENGINEERS, INC.]
172920	11/28/2006	DRAFT VIBRATION MONITORING REPORT FOR THE RINGWOOD MINES / LANDFILL SITE	105	[REPORT]	R2-0007586	R2-0007690	[,]	[ARCADIS G&M, INC.]	[,]	[VIBRA-TECH ENGINEERS, INC.]
172922	07/30/2007	PLAN FOR INVESTIGATION - INVESTIGATION OF CANNON MINE PIT AREA - FOR THE RINGWOOD MINES / LANDFILL SITE	88	[PLAN]	R2-0007691	R2-0007778	[,]	[FORD MOTOR CO]	[,]	[ARCADIS U.S., INC]
212590	05/17/2012	COMMENTS FROM A MEMBER OF THE SOCIAL ACTION COMMITTEE OF TEMPLE SHALOM SUPPORTING A FULL AND EFFECTIVE REMOVAL OF WASTE AT THE RINGWOOD MINES / LANDFILL SITE	2	[LETTER]	R2-0007779	R2-0007780	[GOWERS, JOSEPH]	[EPA, REGION 2]	[CAROL, RITA]	[PUBLIC CITIZEN]

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DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Beginning Bates:	Ending Bates:	Addressee Name:	Addressee Organization:	Author Name:	Author Organization:
255076	12/05/2013	OTHER ANIMAL SPECIES WITHIN ONE MILE OF THE PROJECT SITE BASED ON ADDITIONAL SPECIES TRACKED BY ENDANGERED AND NONGAME SPECIES PROGRAM FOR THE RINGWOOD MINES / LANDFILL SITE	2	[LIST]	R2-0007781	R2-0007782	[]	[]	[]	[]
255073	05/07/2014	SITE DRAWING: RINGWOOD RECYCLING CENTER INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM BOROUGH OF RINGWOOD, PASSAIC COUNTY, NJ FOR THE RINGWOOD MINES / LANDFILL SITE	3	[DRAWING]	R2-0007783	R2-0007785	[]	[]	[,]	[ENGINEERING & LAND PLANNING ASSOCIATES, INC.]
255074	05/07/2014	TREATMENT WORKS APPROVAL ENGINEER'S TECHNICAL REPORT FOR THE RINGWOOD MINES / LANDFILL SITE	36	[REPORT]	R2-0007786	R2-0007821	[,]	[BOROUGH OF RINGWOOD]	[,]	[ENGINEERING & LAND PLANNING ASSOCIATES, INC.]
255070	05/14/2014	HIGHLAND PRESERVATION AREA APPROVAL PRE-APPLICATION MEETING CHECKLIST FOR THE RINGWOOD MINES / LANDFILL SITE	29	[FORM]	R2-0007822	R2-0007850	[]	[]	[,]	[NJ DEPT OF ENVIRONMENTAL PROTECTION]
255075	05/19/2014	TRANSMITTAL OF THE HIGHLAND PRESERVATION AREA APPROVAL PRE-APPLICATION MEETING AND TWA APPLICATION FOR THE RINGWOOD MINES / LANDFILL SITE	1	[FORM]	R2-0007851	R2-0007851	[CHIN MONAHAN, WANDA]	[SEDITA, CAMPISANO & CAMPISANO LLC]	[INGRAM, WAYNE]	[ENGINEERING & LAND PLANNING ASSOCIATES, INC.]
255071	05/21/2014	SUBMITTAL OF THE HIGHLAND'S PRESERVATION AREA APPROVAL PRE-APPLICATION MEETING FOR BROWNFIELD/REDEVELOPMENT AREA DESIGNATION AND TREATMENT WORKS APPROVAL ENGINEER'S TECHNICAL REPORT FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0007852	R2-0007852	[GOWERS, JOSEPH , PETRONE, KEN]	[NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, US ENVIRONMENTAL PROTECTION AGENCY]	[CHIN MONAHAN, WANDA]	[SEDITA, CAMPISANO & CAMPISANO LLC]
255072	05/21/2014	SUBMITTAL OF THE HIGHLAND'S PRESERVATION AREA APPROVAL PRE-APPLICATION MEETING FOR BROWNFIELD/REDEVELOPMENT AREA DESIGNATION AND TREATMENT WORKS APPROVAL ENGINEER'S TECHNICAL REPORT FOR THE RINGWOOD MINES / LANDFILL SITE	1	[LETTER]	R2-0007853	R2-0007853	[GENGEL, GARY P]	[LATHAM & WATKINS]	[CHIN MONAHAN, WANDA]	[SEDITA, CAMPISANO & CAMPISANO LLC]

APPENDIX V – State Letter of Concurrence

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION PROGRAM
Mail Code 401-06
P. O. Box 420
Trenton, New Jersey 08625-0420
Tel. #: 609-292-1250
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CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

June 27, 2014

Mr. Walter Mugdan, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

Re: Ringwood Mines/Landfill Superfund Site
Record of Decision
EPA ID# NJD980529739
DEP PI# G000004537

Dear Mr. Mugdan:

The New Jersey Department of Environmental Protection (DEP) has completed its review of the "Record of Decision, Ringwood Mines/Landfill Superfund Site, Borough of Ringwood, Passaic County, New Jersey" prepared by the U.S. Environmental Protection Agency (EPA) Region II in June 2014 and concurs with the selected remedy to address contaminated waste as part of Operable Unit Two (OU2) of this site.

DEP supports this Record of Decision and selected remedies to address waste contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the site. The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the Administrative Record file for this site. The response action selected in this Record of Decision is necessary to protect public health and the environment from actual releases of hazardous substances into the environment.

The response action described in this Record of Decision addresses waste contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the site. It represents the second of three planned remedial phases, or operable units, for the site. The third phase (OU3) addresses ground water across the Site. A remedial investigation/feasibility study for OU3 is nearing

completion and will serve as the basis for the selection of a remedy for site-wide ground water. A remedy for OU1 was originally intended to comprehensively address contamination at the site. However, subsequent to the completion of the OU1 remedy and deletion of the site from the National Priorities List, additional contamination was found at the site that resulted in the need for further evaluation of conditions at the site and implementation of OU2 and OU3.

The major components of the selected remedy for each of the disposal areas are documented in the OU2 declaration for the Record of Decision and the full Record of Decision and attachments, including the responsiveness summary.

DEP appreciates the opportunity to participate in the decision making process to select an appropriate remedy and is looking forward to future cooperation with EPA at this site.

If you have any questions, please call me at 609-292-1250.

Sincerely,

Mark J. Pedersen
Assistant Commissioner
Site Remediation Program

C: Ken Kloo, Director, Division of Remediation Management, DEP
Ed Putnam, Assistant Director, Publicly Funded Response Element, DEP
Carole Petersen, Chief, New Jersey Remediation Branch, EPA Region II

APPENDIX VI – Responsiveness Summary

APPENDIX VI

RESPONSIVENESS SUMMARY

INTRODUCTION

This Responsiveness Summary provides a summary of the significant comments and concerns submitted by the public on the September 2013 Proposed Plan for the Ringwood Mines/Landfill Superfund Site, and EPA's responses to those comments and concerns. All comments summarized in this document have been considered in EPA's final decision for the selection of a remedy to address contamination in the OU2 areas of the Site.

This Responsiveness Summary is divided into the following sections:

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS: This section provides the history of community involvement and concerns regarding the Site.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES: This section includes summaries of comments received by EPA during the November 7, 2013, public meeting and in writing during the public comment period, as well as responses to these comments.

The Responsiveness Summary includes attachments which document public participation in the remedy selection process for the Site. These attachments are as follows:

Attachment A - September 2013 Proposed Plan for the Ringwood Mines/Landfill Site;

Attachment B - Public Notice published in The Record and The Herald News on October 2, 2013;

Attachment C - Transcripts of the November 7, 2013, Public Meeting; and

Attachment D - Written comments received by EPA during the public comment period.

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

EPA's Proposed Plan for cleanup of the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site, as well as supporting documentation, were released to the public for comment on October 2, 2013. These documents were made available to the public in the administrative record file maintained at the Ringwood Public Library, located at 30 Cannici Drive, Ringwood, New Jersey, and in the EPA Region II Records Center at 290 Broadway, New York City. Furthermore, a notice of availability of the above-referenced documents was published in The Record and The Herald News on October 2, 2013.

On October 2, 2013, EPA opened a sixty-day public comment period on the Proposed Plan which was originally scheduled to extend through December 2, 2013. However, EPA received requests from the public to extend the public comment period to allow adequate time for consideration of and comment on the Proposed Plan. In response to these requests, the EPA provided two extensions to the public comment period, which resulted in a public comment period that extended from October 2, 2013 through February 5, 2014.

In addition, EPA held a public meeting on November 7, 2013 at 7:00 pm at the Martin J. Ryerson Middle School in Ringwood, New Jersey, to present the findings of the RI/FSs and EPA's Proposed Plan to the community and local officials. At this meeting, representatives of the EPA listened to and answered questions concerning the remedial alternatives developed as part of the RI/FSs.

In order to ensure community involvement at the Site, the EPA has facilitated the formation of a Community Advisory Group (CAG), comprised of community members, local officials and other Site stakeholders. Representatives of the EPA and NJDEP routinely attend CAG meetings, which have generally been held on a monthly basis, in order to share Site information with the community. Furthermore, Site-related documents have been shared with the CAG and their technical advisor prior to finalization in order to allow for consideration of their concerns.

In response to concerns raised by the Upper Ringwood community regarding the potential of adverse Site impacts, in July 2013, the EPA finalized an Environmental Justice (EJ) Assessment for the Site. The EJ Assessment concluded that the Upper Ringwood community had been adversely impacted by the Site, and recommended actions that could be taken by the EPA and the State and local government to help identify and address potential impacts. As noted in the Addendum to the Environmental Justice Assessment, EPA has addressed all of the recommendations identified in the EJ Assessment.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES

Over 40 comment letters were received by EPA via the U.S. Postal Service and electronic mail during the public comment period. The following is a summary of the significant comments contained in these letters and during the public meeting held on November 7, 2013, and EPA's responses to these comments.

The entire transcript for the public meeting is attached (Attachment C) to this document. A copy of the transcript of the public meeting is also available in the Administrative Record, which is available in the above-reference information repositories.

Comments were received during the public comment period from numerous groups and individuals, including the Borough of Ringwood, the CAG and individual CAG members, local residents, various environmental groups, professors from area colleges, the Ford Motor Company and other interested parties. The majority of comments received were supportive of cleanup alternatives which completely remove waste from the Site, and opposed cleanup alternatives that provide for the containment of waste in place. Comments from the Ford Motor Company and

the Borough of Ringwood were supportive of cleanup alternatives that provide for containment of waste at the Site, and opposed the cleanup alternatives that provide for excavation and off-site disposal of waste. The following is a summary of these comments and EPA responses are grouped under common topics:

- Remedial Investigation
- Risk Assessment
- Remedial Alternatives
- Preferred Remedy
- Groundwater
- Paint Sludge
- Other Comments
- Environmental Justice Assessment

Remedial Investigation

Comment #1: A commenter noted an apparent discrepancy in that the Cannon Mine Pit Area Feasibility Study, Alternative 5 estimates that the volume of fill material, excluding blast rock at the bottom of the pit, is 29,500 cubic yards, while the Cannon Mine Pit Area Investigation section of the Proposed Plan indicates that the volume of fill material is 46,000 tons.

Response #1: EPA acknowledges that the Cannon Mine Pit Area Feasibility Study indicates that the volume of fill material, excluding blast rock at the bottom of the pit, is 29,500 cubic yards or over 44,000 tons, assuming that a cubic yard of fill weighs 1.5 tons. The ROD notes that the amount of fill material in the Cannon Mine Pit, excluding the blast rock, is approximately 44,000 tons.

Comment #2: A commenter indicates that the Proposed Plan does not present any information on mine tailings and how mine tailings are more prevalent than paint sludge and are the primary source of arsenic at the Site.

Response #2: The ROD acknowledges the presence of elevated levels of arsenic in both mine tailing and paint sludge samples collected from the Site. Specifically the ROD indicates that "…levels of arsenic above New Jersey background soil levels have been found in some samples of mine tailings collected from the Site. Given that arsenic has also been found at elevated levels in some paint sludge samples collected from the Site, the EPA believes that paint sludge is also a source of arsenic in other media at the Site." Therefore, the ROD clearly acknowledges that both mine tailings and paint sludge are potential sources of arsenic at the Site. It should be noted, however, that studies of the mine tailings conducted for the Site have found that arsenic associated with the mine tailings is strongly bound within the mineral apatite and does not readily move into other media and is not readily bioavailable.

Risk Assessment

Comment #3: A commenter asserts that the three areas of concern addressed under Operable Unit Two pose little to no risk to human health and the environment, as established in the Administrative Record by multiple risk assessments approved by EPA.

Response #3: As noted in the ROD, the results of the human health risk assessments for the OU2 areas indicate that the potential cancer risk for game hunters and gathers of wild plants in the Peters Mine Pit area, Cannon Mine Pit area and O'Connor Disposal Area falls at the upperbound of the EPA's risk management range of 10^{-4} to 10^{-6} for the reasonable maximum exposure expected to occur. These results indicate that there may be an unacceptable risk to these receptors due primarily to arsenic in plant and game tissue at the Site. Furthermore, blood lead levels for the young child hunter following exposure to lead in game and plant tissue in the OU2 areas were also predicted to exceed 10 ug/dl in more than five percent of this population, indicating potential unacceptable risk due to exposure to lead at the Site.

Comment #4: A commenter contends that the hunter scenario evaluated in the risk assessment is unrealistic, in that the 22 acres comprising the three areas of concern could not provide enough plant and game to support a local hunter's subsistence diet.

Response #4: The HHRAs estimated risks and hazards to the reasonably maximum exposed (RME) individual hunter/gatherer, using exposure information ascertained from both community members and EPA's *Exposure Factors Handbook* (EPA/600/P-95/002Fa, b, c). It is EPA's belief that the areas of investigation are able to support both animal (tissue) and plant populations to allow for the ingestion rate for the RME individual included in the HHRAs.

Comment #5: A commenter questions why the cumulative effects to all contaminants are not taken into account.

Response #5: The HHRAs evaluated exposure to multiple contaminants assuming additivity of effects from exposure to these multiple chemicals. This is consistent with EPA guidance on conducting risk assessment, a process that has been peer-reviewed by risk assessment experts and is used in risk assessments across the country. This process uses toxicity information that is developed to account for sensitive subpopulations, including those with increased susceptibility for disease. Toxicity information used in the HHRAs has also been peer-reviewed by experts, and these values are used in risk assessments nationally. Taking into account these considerations results in a risk assessment that evaluates exposure over a lifetime, using exposure scenarios that reflect activities and behaviors of the local populations, and is protective of public health and not likely to underestimate the actual risk at a site.

Comment #6: A commenter notes that scientists are becoming increasingly aware that lower amounts of toxins adversely affect humans, animals and plants, and questions whether this has been considered when selecting a remedy for the Site.

Response #6: When EPA selects a remedy where hazardous substances remain on site above levels which permit unrestricted use and unlimited exposure, CERCLA or EPA policy require that a five-year review of the remedy be conducted to determine whether it remains protective of human health and the environment. Generally, these reviews are performed five years following

the initiation of the selected remedy, and are repeated every succeeding five years so long as future uses remain restricted. During these reviews, EPA will evaluate whether new toxicological information effects the protectiveness of the remedy. If EPA determines that the remedy is no longer protective, actions will be taken to restore the protectiveness of the remedy.

Comment #7: A commenter notes that the Proposed Plan does not mention that while arsenic in game and plants drives the risks to the hunter, EPA's Biota Sampling Report (2010) indicates that the concentrations of arsenic in game and plants are consistent with reference locations. The commenter indicates that, based on this information, the Proposed Plan cannot conclude that additional risks are a result of paint sludge/waste.

Response #7: The results of EPA's Biota Study are discussed in the Summary of Site Characteristics section of the ROD. As noted in this section of the ROD, while EPA's Biota Study clearly indicated that lead was accumulating in small mammals and plants at the Site, other Site-related metals were not found to be substantively entering the food chain. In addition to evaluating potential carcinogenic and non-cancer risks to Site receptors, anticipated blood lead levels in Site receptors were also evaluated to determine whether exposure to lead in media at the Site presents an unacceptable risk. Based upon this evaluation, which is discussed in the Summary of Operable Unit Two Risks section of the ROD, EPA concluded that exposure to lead at the Site presented a potentially unacceptable risk to Site receptors.

Comment #8: A commenter notes that EPA's Biota Study concluded that metals, other than lead, were not found to be entering the food chain. However, the human health risk assessments determined that there may be an unacceptable potential cancer risk for the hypothetical hunter in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site due primarily to ingestion of arsenic found in plant and game tissue. The commenter notes that these two finding appear to be inconsistent.

Response #8: EPA's Biota Study provided for the collection of plants and animals from the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site as well as off-Site reference locations which have not been impacted by contaminants at the Site. A comparison of the results of biota samples collected at the Site to the results of biota samples collected at the reference locations found no observable difference in the detected levels of arsenic. Therefore, Site-related arsenic was not found to be entering the food chain. However, the human health risk assessments for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas determined that there may be an unacceptable potential cancer risk for the hypothetical hunter in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site due primarily to ingestion of arsenic found in plant and game tissue, irrespective of its source.

It should also be noted that EPA's Biota Study clearly determined that Site-related lead is moving into the food chain at the Site. Furthermore, the human health risk assessments for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site all determined that there is a potentially unacceptable risk due to exposure to lead at the Site.

Comment #9: A commenter notes that the Proposed Plan discusses the Screening Level Ecological Risk Assessments (SLERAs) in the present tense and recommends that the SLERAs be

discussed in the past tense with an explanation of how the SLERA findings prompted the preparation of Baseline Ecological Risk Assessments (BERAs).

Response #9: The Summary of Operable Unit Two Risks section of the ROD clearly explains the manner in which potential ecological risks were assessed at the Site. As detailed in this section of the ROD, SLERAs were conducted for the Peters Mine Pit area, Cannon Mine Pit area and O'Connor Disposal Area of the Site. The results of these SLERAs indicate that constituents are present in media in all three of these areas at levels which exceed ecologically based screening levels, which indicates a potential risk to ecological receptors. The results of these SLERAs prompted the performance of BERAs for these three areas of the Site. These BERAs concluded that constituents in the Peters Mine Pit, Cannon Mine Pit, and O'Connor Disposal Areas of the Site present a low risk to ecological receptors.

Comment #10: A commenter asserts that the Proposed Plan should summarize the conclusions of the ecological risk assessments and the human health risk assessments, and have a separate section that describes EPA's judgment with regards to the need for implementation of cleanup actions.

Response #10: A summary of the findings of the human health risk assessments (HHRAs) and ecological risk assessments for the Peters Mine Pit area, Cannon Mine Pit area and the O'Connor Disposal Area were presented in the Summary of Operable Unit 2 Risks sections of the Proposed Plan, and are also summarized in the ROD. The HHRA's for the Peters Mine Pit area, Cannon Mine Pit area and O'Connor Disposal Area demonstrate that unacceptable excess lifetime cancer risks may be associated with the consumption of game and plants collected from these areas of the Site. Furthermore, blood lead levels for the hypothetical young child hunter exposed to lead in plants and game collected from these areas were also expected to exceed EPA's target threshold, indicating potential unacceptable risk due to exposure to lead. Therefore, the response action selected in this ROD is necessary to protect public health, welfare or the environment from actual or threatened releases of hazardous substances, pollutants or contaminants from the Site. The Basis for Remedial Action in the Decision Summary of this ROD documents EPA's judgment with regards to the need for cleanup actions.

Comment #11: A commenter asserts that EPA has erroneously indicated that non-cancer HIs are less than one when mechanisms of action are considered for the Hunter/Gatherer RME scenario in the Cannon Mine Pit Area HHRA and the Hunter/Gatherer and Resident RME scenarios in the O'Connor Disposal Area HHRA.

Response #11: The HHRAs were developed consistent with EPA guidance and policy, including the estimation of the non-cancer hazard index. According to EPA guidance, *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual* (DPA/540/1-89-002), "The hazard index is equal to the sum of the hazard quotients,….When the hazard index exceeds unity, there may be concern for potential health effects." The guidance then provides additional direction on how to proceed when the hazard index is greater than 1: "If the HI is greater than unity as a consequence of summing several hazard quotients of similar value, it would be appropriate to segregate the compounds by effect and by mechanism of action and to derive separate hazard indices for each group." The process used by EPA when considering the

conclusions of the HHRAs in risk management decisions is consistent with this guidance: when the HI value was determined to exceed unity, HI values were then derived based on target organ. In instances where this target organ-specific HI value exceeded unity, consideration was then given to the mechanism of action identified in the toxicological profile to determine whether there may be concern for potential health effects. Although the HQ for copper slightly exceeds unity, the copper concentrations in game tissue was determined to be consistent with that of the reference area.

Remedial Alternatives

Comment#12: A commenter notes that Alternative 3 for the Peters Mine Pit Area fails to indicate that this alternative would impact wetlands and that wetlands mitigation would be required.

Response #12: Comment noted. Any wetlands impacted by remedies implemented at the Site will need to be restored; this has been explicitly identified in the ROD.

Comment #13: A commenter notes that the Proposed Plan estimates that more than 28,700 truck trips would be required to transport waste material off site if Alternative 7 for the Peters Mine Pit Area was implemented. The commenter requests that the approach to calculating this value be identified.

Response #13: EPA assumed that each tandem dump truck used for transporting waste off site would hold approximately 12 tons of waste material. Furthermore, each truck would make a trip into the Site to receive waste, and another trip out of the Site to transport the waste to the disposal facility. These assumptions result in an estimate that more than 28,700 truck trips would be required to transport waste off site if Alternative 7 was implemented.

Comment #14: A commenter notes that Alternative 5 for the Cannon Mine Pit Area, as presented in the Proposed Plan, states that blast rock at the bottom of the pit would not be removed, while Alternative 5 in the Feasibility Study for the Cannon Mine Pit Area indicates that neither mine tailings nor the blast rock at the bottom of the pit would be removed.

Response #14: Comment noted. The description of Alternative 5 included in the ROD clarifies that neither mine tailings nor the blast rock at the bottom of the pit would be removed under this alternative.

Comment #15: A commenter notes that the Proposed Plan estimates that 7,800 truck trips through the Ringwood community would be required to transport waste off site if Alternative 5 for the Cannon Mine Pit Area was implemented, while the Feasibility Study for the Cannon Mine Pit Area estimates that more than 2,100 truck trips would be required to transport waste material off site, and an additional 2100 truck trips would be required to import clean fill.

Response #15: EPA assumed that each tandem dump truck used for transporting waste off site would hold approximately 12 tons of waste material. Furthermore, each truck would make a trip into the Site to receive waste, and another trip out of the Site to transport the waste to the disposal facility. These assumptions result in an estimate that approximately 7,800 truck trips

would be required to transport stabilized waste off site if Alternative 5 was implemented. The number of truck trips required to implement this alternative could be reduced if larger trucks were made available to transport waste off site, as was assumed in the Feasibility Study for the Cannon Mine Pit Area.

Comment #16: A commenter notes that in the Implementability section on page 20 of the Proposed Plan, EPA erroneously references Alternative 4 rather than Alternative 6 as the alternative that would provide for the construction of an engineered cap as well as that transportation of mine tailings from the O'Connor Disposal Area to the Cannon Mine Pit Area.

Response #16: Comment noted. The Implementability discussion for the Cannon Mine Pit Area alternatives which is included in the ROD references the correct alternatives.

Comment #17: A commenter notes that Alternative 5A, as presented in the Feasibility Study for the O'Connor Disposal Area, requires the removal and off-site disposal or on-site reuse of mine tailings at the bottom of the O'Connor Disposal Area, while Alternative 5A, as presented in the Proposed Plan, allows for the potential reuse of these mine tailings as fill for the Peters Mine Pit Area, but does not require their removal.

Response #17: Subsequent to submittal of the Final Feasibility Study Report, EPA determined that it would be appropriate to modify Alternative 5A to allow for the on-Site reuse of the debris-free mine tailings as fill for the Peters Mine Pit Area. Reuse of the mine tailings in this manner would reduce the amount of clean fill that would have to be transported to the Site and the associated truck traffic. In addition, reuse of the mine tailings could reduce the cost to implement the selected remedy, with no additional long-term risk to human health or the environment. Therefore, Alternative 5A for the O'Connor Disposal Area, as presented in the Proposed Plan and the Record of Decision, provides the option for reuse of debris-free mine tailings as fill for the Peters Mine Pit Area of the Site, but does not require their removal.

Comment #18: A commenter notes that Alternative 5B for the O'Connor Disposal Area, as presented in the Proposed Plan, states that undisturbed mine tailings located beneath the fill material would be left in place in the O'Connor Disposal Area, while the same alternative, as presented in the Feasibility Study for the O'Connor Disposal Area, indicates that the undisturbed mine tailings would be transported off site for disposal.

Response #18: Subsequent to submittal of the Final Feasibility Study Report, EPA determined that it would be appropriate to modify Alternative 5B to allow for undisturbed, debris-free mine tailings to remain in place in the O'Connor Disposal Area. In the Summary of Remedial Alternatives section of the Proposed Plan, EPA noted that Alternatives 5A and 5B for the O'Connor Disposal Area had been modified (relative to the descriptions in the Feasibility Study Report). It should be noted that mine tailings, which are ubiquitous at the Site, would be covered with topsoil as part of this alternative to allow for revegetation of the O'Connor Disposal Area. Therefore, leaving mine tailings in place in the O'Connor Disposal Area as part of Alternatives 5A and 5B would not result in an unacceptable risk to human health or the environment.

Comment #19: A commenter notes that Alternative 5B for the O'Connor Disposal Area, as presented in the Proposed Plan, is estimated to have a Present Net Worth cost of $26,191,800 and a construction duration of 18 - 20 months, while the Feasibility Study for the O'Connor Disposal Area indicates a Present Net Worth cost of $54,509,400 and a construction duration of 28-29 months for the same alternative.

Response #19: As noted above and in the Proposed Plan, subsequent to submittal of the Final Feasibility Study Report for the O'Connor Disposal Area, EPA determined that it would be appropriate to modify Alternative 5B to allow for undisturbed, debris-free mine tailings to remain in place in the O'Connor Disposal Area. Therefore, the cost to implement and construction duration for Alternative 5B was modified in the Proposed Plan to reflect this determination.

Comment #20: A commenter indicates that the volume estimates for contaminated soil/fill to be excavated and mine tailings that could be excavated and used as fill as part of Alternative 5A for the O'Connor Disposal Area differ from those estimates provided in the final Feasibility Study for the O'Connor Disposal Area.

Response #20: Comment noted. Volume estimates for this alternative included in the Proposed Plan were obtained from the draft Feasibility Study Report for the O'Connor Disposal Area. However, volume estimates for soil/fill to be excavated which are included in the ROD reflect the estimates provided in the final Feasibility Study Report for the O'Connor Disposal Area. EPA notes that the draft and Final Feasibility Study Reports were made available to the public.

Comment #21: A commenter indicates that while the cost and duration of the work for each alternative is presented, no such numerical detail is provided concerning an alternative's impact on health risks. The commenter requests that the anticipated health improvement levels associated with each of the alternatives be provided.

Response #21: The human health risk assessments conducted at Superfund sites provide the basis for taking an action and identify the contaminants and exposure pathways that need to be addressed by the remedial action. Remedial alternatives are then developed with the intent of eliminating the pathways by which people can be exposed to contaminants at the site. For instance, the potential for human exposure to waste at a site can be eliminated by either removing the waste from the site, treating the waste so that the contaminants are either immobilized or destroyed, or by containing the waste under an engineered cap. All of these remedial options may eliminate the potential for exposure to site-related contaminants and would, therefore, be protective of human health and the environment.

With respect to the alternatives evaluated for Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site, all of the alternatives considered by EPA which would provide for containment, stabilization and/or removal of the impacted fill material would eliminate the pathways by which humans could be potentially exposed to contaminants in the fill material, and are all considered to be protective of human health and the environment.

Comment #22: A commenter requests that EPA address the permanence of each alternative.

Response #22: As noted in this ROD, long-term effectiveness and permanence is one of the nine evaluation criteria which each alternative was screened against in order to select the best cleanup alternative for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site. In general, containment alternatives remain effective in the long-term if they undergo routine monitoring and maintenance. Therefore, routine monitoring and maintenance is included as a component of all containment alternatives evaluated in the ROD. Alternatives which provide for complete removal of fill material are expected to remain protective without the need for long-term monitoring and maintenance. EPA is confident that the remedy selected for the Site, whether it requires complete removal of impacted fill material or containment of fill material, can be implemented in a manner that is protective in the long term.

Comment #23: A commenter inquired about the stabilizing agent that would be used if in-situ stabilization was implemented at the Site

Response #23: The specific stabilizing agent used to stabilize waste at the Site would be determined during the design of the remedy, if in-situ stabilization was the selected remedy for any of the OU2 areas of the Site. Typical stabilizing agents include Portland cement, lime, limestone, clay and gypsum.

Preferred Remedy

Comment #24: A commenter indicated that capping of the Peters Mine Pit Area or the O'Connor Disposal Area would render the areas protective of human health and would satisfy all chemical-specific, action specific and location specific ARARs. Furthermore, this commenter indicated that the EPA approved risk assessments and feasibility studies confirm that capping would meet or exceed all nine threshold and balancing criteria in all three areas of concern.

Response #24: As discussed in the ROD, the EPA conducted a detailed analysis of the viable remedial alternatives for each area of the Site pursuant to the NCP, 40 CFR § 300.430(e)(9), the EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies,* and OSWER Directive 9355.3-01. This detailed analysis consisted of an assessment of the individual alternatives against each of nine evaluation criteria at 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis focusing upon the relative performance of each alternative against the criteria. The first two criteria considered by EPA are whether the individual alternatives would provide overall protection of human health and the environment and comply with applicable or relevant and appropriate requirements (ARARs). These criteria are considered "threshold criteria" because they are the minimum requirements that each alternative must meet in order to be eligible for selection as a remedy. As noted in the ROD, EPA has determined that capping alternatives can be implemented in a manner that would be protective of human health and the environment and comply with ARARs.

However, in addition to the above "threshold criteria", 40 C.F.R. § 300.430(e)(9)(iii) identifies seven additional criteria against which remedial alternatives are to be screened. The next five of these criteria are considered "primary balancing criteria". These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given

site-specific data and conditions. These factors include: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume of contaminants through treatment; short-term effectiveness; implementability and cost. Additional factors to be considered include whether the Ringwood community or the State of New Jersey accept the selected remedy. Therefore, all alternatives that satisfy the "threshold criteria" must be evaluated against these additional criteria to ensure that the best cleanup option is selected from those alternatives which would be protective of human health and the environment and comply with ARARs. As described in the Rationale for the Selected Remedy section of the ROD, EPA determined that the selected remedies for the Peters Mine Pit (PMP), Cannon Mine Pit (CMP) and the O'Connor Disposal Area (OCDA) presented the best options for addressing contamination at these areas of the Site.

As noted in the ROD, EPA has determined that for the PMP Area and the OCDA, remedies which employ excavation of impacted fill material provide the best balance of tradeoffs among the remedial alternatives with respect to the nine evaluation criteria. For the PMP Area, Alternative 6A is expected to provide a greater degree of long-term effectiveness and permanence and will provide for a reduction of toxicity, mobility, or volume of contaminants, when compared to alternatives that employ only containment. Similarly, for the OCDA, Alternative 5A is expected to provide a greater degree of long-term effectiveness and permanence and will provide for a reduction of toxicity, mobility, or volume of contaminants, when compared to capping alternatives.

Comment #25: A commenter asserts that, for the Peters Mine Pit and the O'Connor Disposal Areas, EPA failed to conduct a complete and meaningful evaluation of the alternatives in accordance with the NCP. The commenter asserts that, under the NCP, EPA is required to determine a remedial alternative's cost effectiveness by evaluating the following three balancing criteria to evaluate effectiveness: long-term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; and short-term effectiveness. The commenter asserts that EPA did not engage in this mandatory balancing analysis.

Response #25: As noted in the "Cost Effectiveness" section of the ROD, EPA evaluated the overall effectiveness of the alternatives by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, or volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness. The relationship of the overall effectiveness of the selected remedy for each of these areas was determined to be proportional to costs and hence, EPA believes that these alternatives represent a reasonable value for the money to be spent.

For the Peters Mine Pit Area, EPA has determined that Alternative 6A provides a greater degree of long-term effectiveness and permanence, and more reduction in toxicity, mobility, or volume through treatment than alternatives that provide for containment alone, due to the removal of approximately 22,000 tons of impacted fill. While Alternative 6A is expected to have a greater potential for risks to the Ringwood community and workers during construction than alternatives that provide for containment alone, EPA believes that these risks can be minimized through air monitoring, dust suppression, truck decontamination procedures and on-Site traffic controls.

Therefore, EPA believes that Alternative 6A will have greater overall effectiveness than alternatives that involve containment alone.

Similarly, for the O'Connor Disposal Area, EPA has determined that Alternative 5A provides a greater degree of long-term effectiveness and permanence, and more reduction in toxicity, mobility, or volume through treatment than alternatives that provide for containment, as an estimated 106,000 tons of impacted fill will be permanently removed from the Site. While Alternative 5A is expected to have a greater potential for risks to the Ringwood community and workers during construction than alternatives that provide for containment, EPA believes that these risks can be minimized through air monitoring, dust suppression and truck decontamination procedures. Therefore, EPA believes that Alternative 5A will have greater overall effectiveness than alternatives that involve containment. However, as indicated in the ROD, EPA believes that many of its concerns regarding the long-term effectiveness of containment alternatives in the OCDA would be addressed if the Borough of Ringwood reused a portion of this area as its recycling center. Therefore, Alternative 4A has been identified as the contingency remedy for the OCDA.

Comment #26: Two commenters noted that the traffic study conducted by Sam Schwartz Engineering for Arcadis indicates an increase in the number of expected crashes related to the removal of fill materials. In addition, the Borough of Ringwood noted that their Chief of Police has expressed concern that the increase in traffic associated with the cleanup action will result in an increase of wait times at intersections as well as impede emergency response from Borough Hall and negatively impact public safety.

Response #26: All appropriate actions will be taken during implementation of the selected remedy to mitigate any risk to the Ringwood community and workers associated with the off-site disposal of contaminated fill from the Site. EPA will require that the construction contractor document in the construction plans the steps to be taken to ensure that truck traffic associated with implementation of the selected remedy does not result in undue risk to the community. It should be noted that during some of the previous paint sludge removal actions conducted at the Site, the construction contractor escorted trucks off of the Site to ensure that speed limits were adhered to. Similar actions can be considered during implementation of the selected remedy to ensure that traffic accident risks are minimized. Furthermore, all proposed traffic routes for off-site disposal of the fill will be identified in the construction plans and will be shared with the Borough of Ringwood prior to implementation of the selected remedy. EPA will consider any comments or concerns the Borough may have regarding the traffic routes identified by the construction contractor.

Comment #27: A commenter asserts that there is no rational basis under the NCP's Cost-Effectiveness balancing formula for the selection of excavation remedies which collectively are over $37 million more than capping alternatives.

Response #27: As noted in the Statutory Determinations section of the ROD, EPA has evaluated the cost effectiveness of each of the alternatives, as required by the NCP. For the Peters Mine Pit Area, EPA has determined that its selected remedy, Alternative 6A, is effective in that it provides for a greater degree of long-term effectiveness and permanence, and more reduction in toxicity,

mobility, or volume of contaminants at the Site than alternatives that provide for containment alone, due to the removal of approximately 22,000 tons of impacted fill. EPA believes that the additional costs associated with implementation of Alternative 6A rather than alternatives that employ only containment is warranted by the greater effectiveness associated with this remedy. EPA also notes that the fill to be excavated under the selected remedy is expected to contain paint sludge, based on the historic presence of paint sludge in the Peters Mine Pit Area. Therefore, excavation of this fill is consistent with the NCP's preference to address areas with high concentrations of toxic compounds with technologies other than engineering and institutional controls. Alternative 6A also provides for the segregation and reuse of non-hazardous soil or fill as fill for the excavated area and/or Peters Mine Pit, which could significantly reduce the cost of the selected remedy.

EPA has also determined that its selected remedy for the O'Connor Disposal Area, Alternative 5A, is effective in that it provides for a greater degree of long-term effectiveness and permanence, and more reduction in toxicity, mobility, or volume of contaminants at the Site than alternatives that provide for containment alone, due to the removal of approximately 106,000 tons of impacted fill from the Site. EPA believes that the additional costs associated with implementation of Alternative 5A rather than alternatives that employ containment is warranted by the greater effectiveness associated with this remedy. EPA also notes that the O'Connor Disposal Area has been the location of several paint sludge removal actions and that paint sludge is still likely present in this area of the Site. Therefore, excavation of this fill is not inconsistent with the NCP's preference to address areas with high concentrations of toxic compounds with technologies other than engineering and institutional controls. However, as indicated in the ROD, EPA believes that many of its concerns regarding the long-term effectiveness of containment alternatives in the OCDA would be addressed if the Borough of Ringwood reused a portion of this area as its recycling center. Construction of a recycling center in the OCDA would result in this area being capped with asphalt, which would mitigate concerns regarding damage to the cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property. Therefore, Alternative 4A has been identified as the contingency remedy for the OCDA.

Comment #28: A commenter noted that the Borough of Ringwood, the elected legal entity representing the Ringwood community, has publicly concluded that capping is the most appropriate remedy for all three areas of concern.

Response #28: Comment noted. The Borough of Ringwood's comments concerning EPA's selected remedy for OU2 are addressed in this Responsiveness Summary.

Comment #29: A commenter notes that the installation of engineered caps over the areas of concern would reduce the mobility of residual wastes and associated constituents.

Response #29: As noted in the ROD, EPA agrees that the installation of engineered caps over the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, may reduce the mobility of contaminants by reducing the infiltration of precipitation through the fill material. However, as provided for in the NCP, all of the remedial alternatives developed for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas were screened against nine evaluation

criteria at 40 C.F.R. § 300.430(e)(9)(iii) in order to identify the best cleanup option for each area of the Site. As discussed in the Selected Remedy section of the ROD, the results of this evaluation have led EPA to determine that cleanup options which involve excavation and off-site disposal of fill material from the Peters Mine Pit and the O'Connor Disposal Areas are better cleanup options for this Site than alternatives which rely solely on containment.

Comment #30: A commenter asserts that capping is effective in the short-term and can be implemented quickly with little disruption to the local community, and with less impact and shorter duration than excavation remedies. The commenter further notes that capping technologies are proven, reliable, and use standard construction techniques, and take less time to implement than excavation.

Response #30: EPA agrees that capping can be an effective remedy to address contamination at Superfund sites. Furthermore, containment remedies can often be implemented in a shorter time frame and with less potential for impact during construction than remedies which involve excavation of waste. However, EPA is also required to evaluate all alternatives against eight additional criteria when identifying preferred alternatives for site cleanups. The outcome of that evaluation is described in Response #24 and in the Selected Remedy section of the ROD.

It should also be noted that actions will be taken during construction of these remedies to mitigate any short-term impacts and potential risks to the Ringwood community and workers. Air monitoring will be conducted to ensure that the community and workers are not exposed to contaminants at unsafe levels. Dust suppression will be conducted, as necessary, to mitigate the potential for exposure to contaminants in dust. Furthermore, trucks and equipment will be decontaminated, as appropriate, before leaving the Peters Mine Pit and O'Connor Disposal Areas to ensure that contaminated fill is not tracked into the Ringwood community.

Comment #31: Two commenters assert that contamination remaining in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas would meet EPA's definition of "Low Level Threat Waste" and that none of the fill material is "Principal Threat Waste". These commenters further assert that EPA's selected remedy for the Peters Mine Pit and O'Connor Disposal Areas is not consistent with EPA's Presumptive Remedy for Low Level Threat Waste and landfill sites, which is containment using Engineering Controls and an Institutional Control such as a Deed Notice, and is not based on regulations governing the selection of remedies. Therefore, these commenters oppose excavation of fill from either the O'Connor Disposal Area or the Peters Mine Pit Area.

Response #31: EPA acknowledges that it has identified containment as a presumptive remedy for CERCLA municipal landfill sites. EPA identifies presumptive remedies as an attempt to use EPA's past experiences to streamline site investigation and to speed up selection of cleanup actions at Superfund sites. However, given the history of inadequate investigation and cleanup actions at the Site, as well as the extensive community interest in the Site, a streamlined presumptive remedy process was not deemed appropriate for this Site. EPA further notes that its selected remedy for the Peters Mine Pit and the O'Connor Disposal Areas is consistent with the NCP, in that EPA believes that wastes that do not meet the definition of "Low Level Threat Waste" are still present in these areas of Site. EPA notes that paint sludge has previously been

identified and excavated from the Peters Mine Pit and O'Connor Disposal Areas, and it is likely that additional paint sludge is located within fill material in these areas. Given the high levels of contaminants contained in the paint sludge, as well as its characterization as a hazardous waste, EPA has consistently required its removal from the Site. Furthermore, the NCP recognizes that a combination of remedial technologies may need to be utilized to address sites where wastes with high levels of contaminants and "Low Level Threat Wastes" are both present. EPA's remedies for the Peter's Mine Pit and O'Connor Disposal Areas provide for the excavation and off-site disposal of those wastes which present the greatest risk to human health and the environment, and for the Peters Mine Pit Area, containment of those wastes which humans and ecological receptors are less likely to be exposed to. Therefore, EPA's selected remedies are not inconsistent with regulations and the NCP.

Comment #32: A commenter questions whether the fact that the Ramapo Fault is still active, and that published reports call for an increase in activity at the Ramapo Fault warrant the complete excavation of contaminated fill materials to prevent future contamination of groundwater.

Response #32: EPA notes that low magnitude earthquakes occur frequently in northern New Jersey and have occurred since the Ringwood Mines/Landfill Site was listed on the National Priorities List in 1983. During this timeframe, only limited groundwater impacts at the Site have been observed by EPA. Therefore, EPA believes that future seismic activity in the vicinity of the Site will have little impact on site-wide groundwater quality. Furthermore, in the unlikely event that an engineered soil cap were to be impacted by an earthquake, any damage would be identified and addressed as part of long-term monitoring and maintenance of the implemented remedy.

Comment #33: Several commenters assert that capping of the OU2 areas is an insufficient remedy, given the Site's proximity to the Wanaque Reservoir.

Response #33: EPA notes that groundwater and surface water quality have been monitored at and downgradient of the Site since the 1980s, with no indication that a groundwater contaminant plume has emanated from the Site and with no observed impact on water quality in the Wanaque Reservoir. Regardless, any remedy implemented in the Peters Mine Pit, Cannon Mine Pit or O'Connor Disposal Areas will be executed in a manner which mitigates impacts to groundwater and surface water quality. EPA's selected and contingency remedies for these areas of the Site require that groundwater monitoring be conducted until a groundwater remedy is selected for the Site. Furthermore, the selected remedies for the Peters Mine Pit Area and Cannon Mine Pit Area and the contingency remedy for the O'Connor Disposal Area require long-term monitoring and maintenance of the capped area to ensure the integrity of the cap and to ensure that the contained fill does not impact nearby brooks.

Comment #34: Several commenters indicate that the Ramapough Mountain People have experienced health issues due to exposure to Site-related contamination, and believe that additional health issues will be experienced if remedies are implemented which do not provide for the complete removal of impacted fill from the Site.

Response #34: EPA's regulations require that remedies implemented at Superfund sites must be

protective of human health and the environment. In performing the risk assessment for the Site, EPA considered the Ramapough Mountain People's cultural and traditional uses of the land in evaluating potential exposures. The remedies selected for the Site, whether they require complete removal of fill, partial removal of fill and/or containment, will be implemented in a manner that addresses unacceptable risks identified in the risk assessment and therefore will be protective of the health and well-being of the Ramapough Mountain People and the surrounding Ringwood community. The containment remedies selected for the Peters Mine Pit and Cannon Mine Pit Areas, as well as the contingency remedy identified for the O'Connor Disposal Area, will protect human health and the environment by containing the fill material under a thick engineered soil cap. The installation of these soil caps will prevent people and ecological receptors from being exposed to the underlying fill material. In addition, these soil caps will function to prevent erosion of fill material, thereby protecting nearby waterways and the Wanaque Reservoir. All of the selected containment remedies also require long-term monitoring and maintenance of the soil caps to ensure that they remain protective in the long term. Where containment remedies are implemented, institutional controls will be required to ensure that the capped area is not used in a manner which could compromise the integrity of the cap. Furthermore, groundwater monitoring will be conducted as a component of all of the selected remedies and the contingency remedy, to ensure that impacts to groundwater remain minimal.

Comment #35: A commenter indicates that the NJDEP requires that the owner of properties where deed restrictions are proposed provide correspondence which allows for the use of a deed restriction.

Response #35: EPA notes that the NCP sets forth the procedure EPA is required to follow in selecting a remedy for Superfund sites. The procedure noted by the commenter relating to the establishment of Institutional Controls is inconsistent with the remedy selection procedure described in the NCP. Neither the NCP nor any guidance relating to the NCP requires that EPA seek or obtain approval from the owner of a Superfund site for Institutional Controls that may be required for a remedy before a ROD is issued. It should be noted that the NJDEP has concurred with the selected remedy for the Site (see Appendix V).

Comment #36: A commenter asks whether a sufficiently thick cap can be designed to ensure its long-term viability and to eliminate the need for fences in order to allow the impacted areas to be used by the public.

Response #36: EPA notes that the selected remedy for the Peters Mine Pit Area of the Site provides for the installation of a thick soil cap to allow the restoration of this area with a variety of trees and other vegetation which are indigenous to the Ringwood area, with the intent of making this an area that can be used for recreational purposes as part of Ringwood State Park. Therefore, public access to this area of the Site should not be restricted after implementation of the selected remedy. Furthermore, the contingency remedy for the O'Connor Disposal, if it were implemented, would provide for the installation of asphalt/concrete over a large portion of the capped area which would allow for its reuse as a recycling center. However, the installation of a sufficiently thick soil cap over the Cannon Mine Pit Area to allow for use by the public would result in a steeply mounded area that would be of limited use to the public and may require significant maintenance to address erosion concerns.

Comment #37: One commenter noted that EPA should continue monitoring at the Site.

Response #37: The selected remedy provides for the continuation of groundwater monitoring until a groundwater remedy is selected for the Site. In addition, monitoring of the engineered soil caps will continue as long as the selected remedy remains in place.

Comment #38: A commenter expressed concern that underground fires would occur if impacted fill material was contained at the Site.

Response #38: While fires in the OU2 areas are known to have occurred in the 1960s and 1970s, EPA is unaware of recent fires in these areas. Regardless, the selected remedy would provide for the installation of a thick soil cap over any impacted fill that remains at the Site, making ignition of these materials very unlikely. Furthermore, much of the fill material consists of soil, mine tailings, rock and concrete, which are not flammable. It should also be noted that impacted fill material which would remain in the Peters Mine Pit Area after the selected remedy is implemented will be saturated as it will be located below the water table.

Comment #39: A commenter asks why complete removal of the fill material is not the appropriate remedy for the Peters Mine Pit and Cannon Mine Pit Areas, if it is for the O'Connor Disposal Area.

Response #39: EPA notes that waste disposal in the Peters Mine Pit and Cannon Mine Pit Areas occurred in deep mine pits, as opposed to the surface disposal of waste which occurred in the O'Connor Disposal Area. Therefore, excavation of fill material from these deep pits could result in implementability issues which would not be encountered during excavation of fill in the O'Connor Disposal Area. For instance, the excavation of fill to a depth of approximately 90 feet below ground surface in the Peters Mine Pit could require the use of specialized equipment. Furthermore, the heterogeneity of the fill material, including the potential presence of concrete structures and metal, and the potential structural instability of the pit would complicate excavation of fill material. Therefore, EPA believes that remedies which do not require deep excavation of impacted fill material are most appropriate for these areas of the Site.

In contrast, EPA believes that any cap that would be installed over the O'Connor Disposal Area would require extensive maintenance efforts in perpetuity if a routine presence were not maintained in this area. EPA believes, and past evidence indicates, that it is highly likely that unauthorized access to this area would continue to occur after installation of an engineered cap. All-terrain vehicles (ATVs) are routinely used in the surrounding area, and fencing currently installed at the Site has not proven effective in restricting ATV users from these areas. Therefore, the EPA believes that the likely use of ATVs across the capped area would harm the cap, requiring repeated maintenance efforts. However, if the Borough utilizes the property as a recycling center, the portion of the O'Connor Disposal Area that would be used for the recycling facility would be capped with asphalt which would mitigate concerns regarding damage to the cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property.

EPA also notes that in the years since disposal of wastes at the O'Connor Disposal Area of the Site ended, this area has become wooded. Until sampling activities were recently carried out in furtherance of the RI, this portion of the Site looked much like, and was used by the local community in the same manner as, the immediately adjacent Ringwood State Park. Members of the local community have long been accustomed to enter this area and have used it for recreation and, among other purposes, for game hunting and gathering plants that have cultural and traditional significance and nutritional value. All of the considered containment alternatives for this area would allow wastes to remain on this portion of the Site, and include engineering and institutional controls which would thus inhibit or restrict use by the local community for these culturally and traditionally significant activities.

Comment #40: A commenter notes that the Center for Disease Control (CDC) recently changed the blood lead level of concern from 10 micrograms per dL to 5 micrograms per dL. The commenter requests that the design of the selected remedy be adjusted to accommodate this recent change.

Response #40: As specified in the ROD, one of EPA's remedial action objectives for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas is to limit direct exposure to soil and fill materials containing constituent levels above NJDEP's direct contact cleanup levels. It should be noted that NJDEP's residential direct contact cleanup level for lead in soil is currently 400 part per million (ppm). Furthermore, EPA currently believes that cleanup of residential properties to a lead level of 400 ppm is protective.

It should be noted that EPA's selected remedy for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas provides for the off-site disposal or containment of **all** fill material disposed of at the Site by the Ford Motor Company. Therefore, revision of the aforementioned soil cleanup levels based upon CDCs current blood lead level of concern would not impact which remedy is selected for these areas.

Comment #41: Several commenters indicate that because EPA's Biota Study concluded that lead is entering the food chain at the Site, all impacted fill must be removed from the Site in order to protect wildlife and plants which serve as a food source for the local community.

Response #41: EPA notes that while the Biota Study concluded that lead is entering the food chain at the Site, lead was not found to be accumulating in game reportedly consumed by the local community. Regardless, EPA believes that its selected remedy will effectively mitigate the potential for biota to be exposed to impacted fill material at the Site. EPA's selected remedy for the Peter's Mine Pit will protect biota by providing for the installation of a soil cap with a thickness of greater than ten feet over the impacted fill material. Furthermore, if the contingency remedy for O'Connor Disposal Area is implemented, a layer of asphalt and/or concrete will be installed over much of the capped area as part of the new recycling center. All caps installed at the Site as part of the implemented remedy will be routinely maintained to ensure that they remain protective. Therefore, EPA believes that the selected and contingency remedies can be implemented in a manner which is protective of biota and the local community.

Comment #42: A commenter indicates that it is indefensible that EPA select a remedy that is not supported by the community. The commenter notes that community acceptance is one of EPA's nine evaluation criteria against which remedial alternatives are screened.

Response #42: EPA acknowledges that community acceptance is one of the nine evaluation criteria against which remedial alternatives considered in this ROD have been screened. Specifically, community acceptance is viewed as a "modifying criteria" because new information or comments from the state or the community on the Proposed Plan may result in modification of the preferred alternative or cause another response measure to be considered. After careful consideration of how well each of the remedial alternatives addresses all nine evaluation criteria, EPA has determined that its selected remedy best satisfies these evaluation criteria and is the best remedy for the OU2 areas of the Site. Community interests have been taken into account during the development and selection of a remedy for the OU2 areas. Given that the Peters Mine Pit Area is located in the Ringwood State Park, the proposed engineered cap will be designed to allow reuse of this area for recreational purposes as part of the Park. In addition, EPA notes that the O'Connor Disposal Area (OCDA) has historically been used by the community for recreation and, among other purposes, for game hunting and gathering plants that have cultural and traditional significance and nutritional value. EPA's selected remedy for the OCDA will restore this area to a condition which will not inhibit or restrict its continued use for these activities. EPA notes that if the Contingency Remedy is implemented, approximately seven acres of the OCDA could not be used for these purposes as it would be restricted to use as a recycling center.

Comment #43: A commenter asked why the Ford Motor Company can't be held responsible for leaving the Upper Ringwood community the way they found it.

Response #43: The statute under which EPA regulates Superfund Sites is the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), which, in addition to establishing the burden for proving liability of a party responsible for a cleanup, also prescribes the goals to be attained by a cleanup and the criteria for measuring those goals. CERCLA does not require that sites be restored to pristine condition, but rather requires that EPA evaluate and select remedies that are protective of human health and the environment upon comparison against the nine criteria set forth in the NCP. (See Response to Comment #24). It is EPA's policy to locate parties responsible for site contamination, known as potentially responsible parties (PRPs), and hold them responsible for cleanup of the site. For the Ringwood Mines/Landfill Site, the Ford Motor Company and the Borough of Ringwood have been identified as PRPs and EPA expects that Ford and the Borough of Ringwood will take responsibility for implementation of the selected remedy. Upon issuance of this ROD, EPA expects to initiate negotiations with Ford and the Borough of Ringwood for their performance of the selected remedy. If the PRPs refuse to finance and implement the selected remedy, EPA can issue an order to require their performance of the work.

Comment #44: A commenter asked how EPA's plan to revegetate the OU2 areas as part of the selected remedy compares to a healthy intact forest ecology.

Response #44: The selected remedy for the Peters Mine Pit Area will provide for the capped area to be restored with a variety of trees and other vegetation which are indigenous to the Ringwood

area, with the intent of making this an area that can be used for recreational purposes as part of Ringwood State Park. Therefore, EPA intends for this area to be restored to a condition which is similar to that of surrounding areas of the Ringwood State Park. EPA's selected remedy for the O'Connor Disposal Area provides for the area to be restored to a condition which is similar to that which existed before Ford's disposal activities. Furthermore, the restoration of any wetlands in the O'Connor Disposal Area that are disturbed during implementation of the remedy, will be conducted in coordination with the NJDEP's Land Use Program. The selected remedy for the Cannon Mine Pit Area provides for the restoration of the capped area with vegetation in order to stabilize the surface of the soil cap. However, the capped area will not be restored with trees or deep rooted vegetation which could compromise the integrity of the cap. The specific details for restoration of the OU2 areas will be determined during design of the selected remedy.

Comment #45: A commenter asks why impact on humans at the Site is not a top consideration when selecting a remedy.

Response #45: Addressing a site's impact on human health and the environment is EPA's primary concern when selecting and implementing a remedy. As noted in the ROD, a cleanup alternative must be considered to be protective of human health and the environment, once implemented, in order to be eligible for selection as a remedy. Furthermore, short-term risks to the community during implementation of potential cleanup actions have also been taken into consideration when selecting a remedy for the Peter's Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas.

Peter's Mine Pit

Comment #46: Two commenters indicated that EPA had failed to provide any justification for the fill material which the National Remedy Review Board (NRRB) recognized to be "similar to the approximately 100,000 cubic yards of fill and debris already found below the water table in the pit" to be disposed of off-site rather than its consolidation within the Peters Mine Pit. These commenters noted that they agreed with the NRRB's assessment that the fill material located above the water table in the "collar" area of the pit should be consolidated within the Peter's Mine Pit and protected beneath the cap which EPA proposes to encompass the entire Peter's Mine Pit.

Response #46: EPA Region 2 responded to the above-referenced NRRB recommendation in a September 30, 2013 memorandum entitled, "Responses to National Remedy Review Board Recommendations for the Ringwood Mines Superfund Site, Borough of Ringwood, New Jersey". As noted in EPA Region 2's response, EPA believes that the off-site disposal of the fill material in the collar area of the Peters Mine Pit is appropriate based upon the fact that paint sludge in this collar area has previously been identified and excavated, and it is likely that additional paint sludge is located within this fill material. The excavation of this fill material will remove from the Site the contaminated fill which people and biota have the greatest chance of coming into contact with and which therefore presents the greatest risk of exposure to humans and ecological receptors. However, EPA recognizes that some of the fill material located above the water table in the Peters Mine Pit Area may not be hazardous in nature. Therefore, EPA has modified the description of Alternative 6A in the final Proposed Plan and the Record of Decision to indicate that segregated non-hazardous soil or fill, if suitable, may be reused as fill for the

excavated area and/or the Peters Mine Pit. Alternative 6A provides for the potential segregation of clean soil from the impacted fill to be considered during the design of this remedy. If the segregation of the clean soil from the fill is determined to be practical and cost effective, the segregated soil could then be used as backfill for the Peters Mine Pit or the excavated area.

Comment #47: Two commenters disagreed with the excavation of Historical Fill surrounding the Peter's Mine Pit Pond, asserting that the excavation of the fill within this area creates undue risks without providing any added protection to human health and the environment when compared to consolidation and capping alone. One of these commenters asserts that EPA's selection of excavation and capping rather than capping alone does not indicate that EPA has fully taken into account, as required under CERCLA Section 121(b)(1)(G) the potential threat to human health and the environment associated with excavation, transportation and re-disposal of this Historic Fill.

Response #47: As indicated in the ROD, all of the remedial alternatives for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas have been screened against the short-term effectiveness criterion, as well as eight other screening criteria identified at 40 C.F.R. § 300.430(e)(9)(iii). In addition, a comparative analysis was conducted which focused on the relative performance of each alternative against the criteria. As noted in the ROD, EPA recognizes that excavation of the fill material may present a greater potential risk of exposure to contaminated fill material during construction of the selected remedy than remedies that employ only containment of the fill material. EPA also acknowledges that workers and the community could potentially be exposed to fill material during the excavation, segregation, loading and off-site disposal of the contaminated fill. However, in the long term, EPA believes that excavation and off-site disposal of contaminated fill located above the water table will provide for greater protection of human health and the environment by removing from the Peters Mine Pit Area the contaminated fill which people and biota have the greatest chance of coming into contact with and which therefore presents the greatest risk of exposure to humans and ecological receptors.

It should also be noted that actions will be taken during construction of the remedy to mitigate any potential risks to the Ringwood community and workers. Air monitoring will be conducted to ensure that the community and workers are not exposed to contaminants at unsafe levels. Dust suppression will be conducted, as necessary, to mitigate the potential for exposure to contaminants in dust. Furthermore, trucks and equipment will be decontaminated, as appropriate, before leaving the Peters Mine Pit Area.

Finally, EPA notes that NJDEP's regulations and guidance regarding the handling of fill which it defines as "Historic Fill" are not applicable to the investigatory and cleanup actions being conducted at the Site under CERCLA authority.

Comment #48: A commenter indicated that over fifty percent of any excavation in the Peters Mine Pit Area would entail the removal of the original soil cap, which was installed in this area in the 1970s, and which still provides a protective barrier against direct contact and ingestion risks.

Response #48: EPA disagrees that any soil cover installed over the Peters Mine Pit Area in the early 1970s provides a protective barrier against direct contact and ingestion of contaminated materials in this area of the Site. Deposits of paint sludge were identified at depths as shallow as six inches below ground surface in the collar area of the Peters Mine Pit Area during performance of the Remedial Investigation. In addition, various forms of debris have routinely been found at or near the surface in this area of the Site. In 2005, Arcadis discovered a near surface drum disposal area within the Peters Mine Pit Area which was designated as the SR-5 area. Several of these drums were clearly visible at the ground surface. Given the historic presence of waste and fill materials at or near the surface of the Peters Mine Pit Area, EPA does not believe that any soil cover installed over this area in the early 1970s is serving as an effective barrier to direct contact and ingestion of contaminated fill.

Comment #49: A commenter noted that they do not agree with the selection of Alternative 6A for the Peters Mine Pit Area because it includes excavation of "historic fill" surrounding the Peters Mine Pond. The commenter asserts that approximately 50% of the "historic fill" that would be excavated as part of this alternative is soil that was used to cap the Peters Mine Pit in the 1970s. The commenter further asserts that the balance of the historic fill is fill mixed with debris which is not highly contaminated, and therefore removal of this fill would not result in a substantial reduction in risk.

Response #49: EPA has determined that the off-site disposal of the fill material in the collar area of the Peters Mine Pit is appropriate based upon the fact that paint sludge and drums were previously identified and excavated from this collar area, and it is likely that additional paint sludge and/or drums are located within this fill material. The excavation of this fill material will remove from the Site the contaminated fill which people and biota have the greatest chance of coming into contact with and which therefore presents the greatest risk of exposure to humans and ecological receptors. However, EPA recognizes that some of the fill material located in the collar area of the Peters Mine Pit may not be hazardous in nature. Therefore, EPA's selected remedy for the Peters Mine Pit Area, Alternative 6A, indicates that segregated non-hazardous soil or fill, if suitable, may be reused as fill for the excavated area and/or the Peters Mine Pit. Alternative 6A provides for the potential segregation of clean soil from the impacted fill to be considered during the design of this remedy. If the segregation of the clean soil from the fill is determined to by practical and cost effective, the segregated soil could then be used as backfill for the Peters Mine Pit or the excavated area.

Comment #50: A commenter notes that following excavation of the "historic fill" to the water table, that the area will still be capped as part of the selected remedy. The commenter further notes that the cap will extend over the excavated area, and asserts that the excavation of this material is little more than a superficial ceremonious exercise with no additional environmental protection benefit.

Response #50: For the Peters Mine Pit Area, EPA has determined that Alternative 6A is a better cleanup option than alternatives which provide for containment alone because it will provide for greater protection of human health and the environment by permanently removing from the Site shallow fill materials and wastes that would present the greatest potential for exposure to human and ecological receptors. In addition, the selected remedy will allow for the installation of a very

thick soil cap over the Peters Mine Pit Area without creating a substantial change in existing elevation, which will allow for the establishment of trees and allow this area to return to a state similar to that of the surrounding area of the Ringwood State Park. Therefore, implementation of the selected remedy will allow for the recreational use of the Peters Mine Pit Area by Ringwood State Park visitors.

Comment #51: A commenter asserts that excavation of the "historic fill" may affect the stability of mine shafts that extend throughout the area surrounding the Peters Mine and up into Sheehan Drive.

Response #51: EPA notes that paint sludge removal actions conducted in and in the vicinity of the Peters Mine Pit Area have involved extensive excavation of soils without associated subsidence issues. Furthermore, vibration studies conducted during the performance of these removal actions demonstrated that associated excavation work did not cause significant vibrations on nearby properties. Therefore, EPA does not believe that excavation of the "historic fill" will result in subsidence issues in the nearby residential neighborhood.

Comment #52: A commenter asserts that after remediation, the Peters Mine Pit will be a moderately sloping mound without trees which is surrounded by boulders and fences and contains methane vents. The commenter further questions the types of recreation this area would support and how the area would be maintained after restoration.

Response #52: As noted in the ROD, the selected remedy for the Peters Mine Pit Area will include the installation of a thick, permeable soil cap over the Peters Mine Pit Area without creating a substantial change in elevation, which will permit the establishment of trees, including those with deep tap roots. This will allow revegetation of this area with native trees endemic to the Ringwood State Park. It should be noted that given the depth of the soil cap, EPA does not believe that this area will need to be fenced to mitigate the risk of exposure to contaminated fill material. Furthermore, while the need for methane vents will be evaluated during the design of the remedy, EPA does not currently believe that such vents will be necessary given the permeable nature of the cap. In addition, EPA has only specified the use of boulders as an example of measures to be considered during the design.

Comment #53: A commenter notes that the Proposed Plan indicates that the need for methane management in the Peters Mine Pit Area and the Cannon Mine Pit Area will be determined during the design. This commenter asserts that the need for methane management should be determined prior to remedy selection, as the requirement for a passive venting system could impact the future use of these areas of the Site.

Response #53: While the selected remedy does provide for the need for methane management to be determined during the design of the remedy, it should be noted that the need for methane collection is generally not a concern when a permeable cap is utilized. However, if the need for methane venting is determined to be appropriate during design of the remedy, the venting system would be designed to minimize any potential safety issues and to allow for recreational use of the Peters Mine Pit Area to the maximum extent practical, and potential reuse of the Cannon Mine Pit Area.

Comment #54: A commenter notes that as part of the selected remedy, material within the Peters Mine Pit will be dewatered and then compacted. The commenter asserts that after these materials are compacted, groundwater will saturate these materials again, recreating the organic muck that is currently present and which has poor structural support capabilities. The commenter believes that this situation will result in settling and failure of the cap, and should be taken into consideration prior to remedy selection.

Response #54: EPA acknowledges that settling of the cap may occur after construction, and such concerns have already been taken into account in the Feasibility Study for the Peters Mine Pit Area. It should be noted that the cost estimates for the capping alternatives were revised in the final Feasibility Study Report to provide for additional costs to address subsidence issues. It should also be noted that, as part of the selected remedy, the organic material at the bottom of the Peters Mine Pit Pond will be compacted dry after dewatering to form a stable base for construction of the permeable cap. However, additional evaluation of this issue will be conducted during the design phase of this remedy to ensure that appropriate measures are incorporated into the cap design.

Comment #55: A commenter questions how the selected remedy will address shallow groundwater contamination emanating from the Peters Mine Pit, and whether the likelihood of buried drums in the pit has been considered.

Response #55: As indicated in the Proposed Plan and the ROD, groundwater contamination at the Site is being addressed as a separate operable unit (OU3). Investigations to date indicate limited impacts to the groundwater at the site. EPA expects that implementation of the selected remedy will complement any groundwater remedy as this selected remedy will reduce the potential for contaminants in soil or fill materials to migrate into groundwater and surface water by reducing the amount of precipitation moving through these materials. Furthermore, while the results of the remedial investigation did not indicate that drums were present at depth in the pit, the selected remedy does include a provision that if drums of waste or paint sludge are encountered during removal of fill material, the excavation would continue until these materials are removed.

Comment #56: A commenter questions how leaving waste in place in the Peters Mine Pit Area as part of the selected remedy can be justified if an on-going groundwater/surface water study finds that the Peters Mine Pit Area is discharging contaminants to the Park Brook.

Response #56: Surface water sampling results collected from the Park Brook since the 1980s do not indicate that Site-related contaminants are emanating from the Site at levels which exceed drinking water standards. EPA does not anticipate that the results of the aforementioned groundwater/surface water study will alter this finding. The intent of this study is to evaluate connectivity between overburden, surface waters and bedrock at the Site, which will provide additional information for evaluation of groundwater alternatives under OU3.

Comment #57: A commenter asked how long will the long term monitoring of the engineering controls associated with the selected remedy last and what financial assurance mechanisms are

required for this monitoring.

Response #57: Long-term monitoring of the engineering controls associated with the selected remedy will continue as long as the selected remedy remains in place. For costing purposes and consistent with EPA policy, the ROD assumes that long-term monitoring will be conducted for a period of 30 years. Furthermore, any enforcement agreement which EPA issues or enters into with Ford or the Borough of Ringwood for performance of this work will require that these parties demonstrate that they have the financial ability to perform the work.

Comment #58: A commenter states that Alternative 6A, as presented in the Feasibility Study for the Peters Mine Pit Area, has an impermeable cap, while the description of this alternative in the Proposed Plan includes a permeable cap. This commenter asks that the basis for this change be provided.

Response #58: As directed by EPA, Alternative 6A was revised in the final Feasibility Study Report for the Peters Mine Pit Area to provide for the installation of a permeable cap in lieu of an impermeable cap. The use of a permeable cap in this area of the Site will allow for the area to be restored with native vegetation, including trees, which are indigenous to this area and will allow for this area to be reused for recreational purposes as part of the Ringwood State Park. In addition, the permeable cap will be protective of human health and the environment because it will mitigate the potential for human or ecological receptor exposure to fill material remaining beneath the cap in the Peters Mine Pit Area. Furthermore, the cap will help reduce the potential for contaminants in fill materials to migrate into groundwater by minimizing the amount of precipitation that passes through the fill material.

Comment #59: A commenter indicates that as part of the selected remedy for the Peters Mine Pit area, geofabric is being placed atop the wastes that will remain in the pit to provide structural stability to the soil cap, and that trees with deep tap roots will puncture that fabric.

Response #59: The current design of the cap to be installed as part of the selected remedy calls for greater than 10 feet of fill to be installed on top of the geofabric over most of the area to be capped. It should be noted that the vast majority of tree roots are expected to be contained within the filled zone above the geofabric. While a deep tap root has the potential to puncture the geofabric, it should be noted that the geofabric would be installed primarily to prevent the loss of fine particulates from the soil cap to the underlying fill, not to provide structural stability to the soil cap.

Comment #60: A commenter questions whether trees whose roots penetrate into the waste in the Peters Mine Pit Area are expected to survive.

Response #60: EPA notes that large trees have and continue to grow in the fill area which surrounds the Peters Mine Pit Pond as well as the O'Connor Disposal Area. Therefore, EPA fully expects that trees will survive on the permeable cap, even if deep tap roots penetrate into the impacted fill material.

Comment #61: A commenter expressed concern regarding the specific concentrations of contaminants that will be allowed to be present in the segregated non-hazardous soil and fill which EPA has indicated can be reused as fill for the Peters Mine Pit Area. This commenter also requests that the specific testing protocols be identified.

Response #61: Fill material containing hazardous waste (i.e. paint sludge) and other material unsuitable for reuse as fill material which are excavated from the area surrounding the Peters Mine Pit Pond will not be reused as fill for the Peters Mine Pit Area. The specific testing protocols for this fill material will be determined during design of the selected remedy.

Comment #62: A commenter questions whether it is legal to restrict public access to State Park land and whether the New Jersey Department of Environmental Protection has approved Ford's taking of this public resource.

Response #62: EPA notes that the selected remedy for the Peters Mine Pit Area of the Site provides for the restoration of the Peters Mine Pit Area with a variety of trees and other vegetation which are indigenous to the Ringwood area, with the intent of making this an area that can be used for recreational purposes as part of Ringwood State Park. Therefore, public access to this area of the Site for uses consistent with those currently allowed in the Park, should not be restricted after implementation of the selected remedy. It should also be noted that the NJDEP has concurred with the selected remedy for the Peters Mine Pit Area (see Appendix 5).

Comment #63: Several commenters indicate that implementing a remedy which leaves waste in the Ringwood State Park would constitute a takings of State Parkland and would require approval from NJDEP's Green Acres Program and State House Commission Approval.

Response #63: EPA notes that the selected remedy for the Peters Mine Pit Area provides for its restoration for recreational use as part of the Ringwood State Park. Regardless, EPA has been notified by the State of New Jersey that State House Commission Approval will not be required to implement EPA's selected remedy within the Ringwood State Park. Furthermore, the NJDEP has concurred with the selected remedy for this area of the Site (see Appendix V).

O'Connor Disposal Area

Comment #64: A commenter expressed concern that conditions in the OCDA after implementation of Alternative 5A would result in a steeply sloping crevasse that would result in an increase in risk to human health and the environment and public safety. The commenter believes that the location of this slope immediately adjacent to several hundred feet of the Peters Mine Road would create a potential hazard to the long-term stability of the road and drivers utilizing the roadway. In addition, the commenter asserts that implementation of Alternative 5A would result in the OCDA being restored as a low-lying wetland that would be unsuitable for productive use by either the residents of Ringwood or the Borough.

Response #64: EPA believes that implementation of the selected remedy for the O'Connor Disposal Area will result in the area being restored to a condition similar to that of the property prior to disposal of Ford's waste. As such, the ground surface will slope from the Peter's Mine

Road down to the Park Brook and associated wetlands, similar to conditions that already exist in the northern section of the O'Connor Disposal Area. Furthermore, the remedy will be designed in a manner that ensures that implementation of the remedy does not compromise the long-term stability of the Peter's Mine Road.

It should also be noted that many in the Upper Ringwood community have expressed support for restoration of O'Connor Disposal Area as provided for in the selected remedy. These community members believe that implementation of the selected remedy will result in this area being restored in a manner that will allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be present if a cap or cover were selected as the remedy. However, it should be noted that this land is owned by the Borough and the Borough could place restrictions on the use of the property.

Comment #65: A commenter notes that Alternative 5A, as presented in the Feasibility Study for the O'Connor Disposal Area, provides for the removal and off-site disposal of mine tailings at the bottom of the O'Connor Disposal Area, while Alternative 5A, as presented in the Proposed Plan, allows for the potential reuse of the mine tailings as fill for the Peters Mine Pit Area.

Response #65: Subsequent to submittal of the Final Feasibility Study Report, EPA determined that it would be appropriate to modify Alternative 5A to allow for the on-Site reuse of the debris-free mine tailings as fill for the Peters Mine Pit Area. Reuse of the mine tailings in this manner would reduce the amount of clean fill that would have to be transported to the Site and the associated truck traffic. In addition, reuse of the mine tailings could reduce the cost to implement the selected remedy, with no additional long-term risk to human health or the environment. Therefore, Alternative 5A for the O'Connor Disposal Area, as presented in the Proposed Plan and the Record of Decision, provides the option for reuse of debris-free mine tailings as fill for the Peters Mine Pit Area of the Site.

Comment #66: A commenter notes that the State of New Jersey did not concur on EPA's preferred remedy for the O'Connor Disposal Area in its comments to the National Remedy Review Board.

Response #66: In its comments to the NRRB, the State of New Jersey indicated that it did not have any comments on the preferred remedy for the O'Connor Disposal Area at that time. However, please note that the State of New Jersey's Letter of Concurrence with the selected remedy has been included in Appendix V of the ROD.

Comment #67: A commenter indicates that excavation of the OCDA would expose mine tailings prior to placement of topsoil, which could result in the movement of mine tailings into area surface water, regardless of the protections that may be put into place.

Response #67: Comment noted. An Erosion and Sediment Control Plan (Plan) will be developed prior to the implementation of the selected remedy in order to identify actions to be taken to mitigate the potential of erosion of fill, soil or tailings during implementation of the remedy. This Plan will be provided to the Hudson Essex Passaic Soil Conservation District for

their review and approval prior to implementation of the selected remedy. All appropriate actions identified in the approved Plan will be implemented to mitigate the potential of erosion of soil, fill or mine tailings into surface water bodies at the Site. It should be noted that an Erosion and Sediment Control Plan would be developed regardless of which remedial alternative is implemented in the O'Connor Disposal Area.

Comment #68: One commenter notes that prior to becoming a local dumping ground, the O'Connor Disposal Area was the site of a large slurry pond for mining operations. This commenter further asserts that EPA has no authority under CERCLA to require that the OCDA be restored to pre-mining conditions.

Response #68: CERCLA provides the EPA the authority to require the implementation of remedial response actions that permanently and significantly reduce the dangers associated with the release of hazardous substances. To that end, EPA has selected a remedy for the O'Connor Disposal Area which requires the excavation and off-site disposal of all impacted fill materials down to the top of the mine tailings. EPA's selected remedy does not require the cleanup of debris-free mine tailings which are a remnant of mining operations. Therefore, EPA's selected remedy does not provide for the O'Connor Disposal Area to be restored to pre-mining conditions. However, the selected remedy does provide the option for debris-free mine tailings to be used as fill for the Peters Mine Pit Area.

Following the excavation and disposition of the fill and tailings, six inches of topsoil will be placed throughout the excavated area to enable revegetation of the O'Connor Disposal Area. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands will be restored within the O'Connor Disposal Area. The restoration of these wetlands will be coordinated with NJDEP's Land Use Program.

Comment #69: One commenter indicated that access to the OCDA would be restricted under any remedial scenario, including Alternative 5A, as the OCDA is private property. Furthermore, the commenter noted that the strategic placement of trees, thorny bushes and boulders around the perimeter of the capped area could also serve to address EPA's concerns regarding the impact of trespassers on a cap's integrity.

Response #69: Under Alternative 5A, all impacted fill material will be removed from the O'Connor Disposal Area. Therefore, the installation of a fence will not be required in order for the remedy to be protective of human health and the environment. Furthermore, the selected remedy will not require restrictions on the future use of the property. While EPA acknowledges that the strategic placement of trees, thorny bushes and boulders around the perimeter of the O'Connor Disposal Area could discourage trespassing if a containment alternative was implemented, it is EPA's expectation that trespassing would still occur. All-terrain vehicles (ATVs) are routinely used in the surrounding area, and fencing currently installed at the Site has not proven effective in restricting ATV users from investigation areas. EPA has also noted at least one instance where a boulder was moved out of the way at the Site to allow for ATV access. Therefore, EPA believes that regardless of the engineering controls implemented, trespassing would continue to occur in the O'Connor Disposal Area. The use of ATVs across the capped area would harm the cap, requiring repeated maintenance efforts in perpetuity.

Comment #70: Two commenters assert that Alternative 4A is fully protective of human health and the environment and results in a level ground surface so the land can be beneficially and productively reused. These commenters note that the alternative is fully protective, minimizes additional risks to human health and the environment associated with excavation of fill below the water table and transportation of this material through the Ringwood community, and enables preservation and/or reuse by the community of the existing land where the existing outdated Recycling Center is currently located.

Response #70: As noted in the ROD, among EPA's primary reasons for selection of Alternative 5A over containment options, such as Alternative 4A, are concerns regarding the potential for unauthorized access to the area and associated damage to any cap which may result if a containment alternative was selected. While access to the O'Connor Disposal Area would be restricted under the evaluated containment alternatives through the use of engineering controls, such as a fence, the EPA believes that it is highly likely that unauthorized access to this area would occur. ATVs are routinely used in the surrounding area, and fencing currently installed at the Site has not proven effective in restricting ATV traffic from investigation areas. Therefore, the EPA believes that the likely use of ATVs across the capped area would harm the cap, requiring repeated maintenance efforts in perpetuity.

However, if the Borough of Ringwood were to pursue its current plan to move its recycling center to the O'Connor Disposal Area, many of EPA's concerns that inform selection of Alternative 5A would be addressed with respect to that reused portion of this area. Under the Borough's current plan, the portion of the O'Connor Disposal Area that would be used for the recycling facility would be capped with asphalt which would mitigate concerns regarding damage to the cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property.

If the O'Connor Disposal Area is reused as proposed by the Borough, EPA believes that with respect to the portion of the O'Connor Disposal Area on which the recycling facility would be located, Alternative 4A would best satisfy the nine evaluation criteria and EPA's objective to advance environmental protection while facilitating reuse of sites as valuable community assets. Therefore, EPA is including in the ROD that Alternative 4A could be selected as a contingency remedy for that portion of the O'Connor Disposal Area to be used for the proposed recycling center, under conditions defined in the ROD.

Comment #71: A commenter indicated that they concur with the selection of Alternative 5A as the selected remedy for the O'Connor Disposal Area. The commenter notes that removal of the fill from this area would eliminate long-term risks from the midst of a residential area and provide significant benefits to the community living next to the O'Connor Disposal Area.

Response #71: Comment noted.

Comment #72: A commenter asserts that the introduction of Alternative 4A as a contingency remedy for the O'Connor Disposal Area is unacceptable as it was first presented to the Community Advisory Group in September 2013, and demands that all actions on the Proposed

Plan be delayed until the community has been provided the full details of the information EPA utilized to propose the contingency remedy, and adequate time to review that information. The commenter further questions how long EPA knew of the Borough of Ringwood's intention to construct a new recycling center in the O'Connor Disposal Area, given that it had time to review Arcadis' qualitative assessment of risk to a potential future recycling center worker prior to issuance of the Proposed Plan.

Response #72: The Borough of Ringwood first presented EPA with a written conceptual plan for construction of a new recycling center in the O'Connor Disposal Area during a September 11, 2013, meeting at EPA's offices in New York City. Information obtained during this meeting was promptly shared with the Community Advisory Group during a September 24, 2013 meeting, prior to release of the Proposed Plan. EPA also presented its Proposed Plan for OU2 of the Site, including the contingency remedy for the O'Connor Disposal Area, to the public during a November 7, 2013, public meeting. Documents which provide the basis for EPA's Proposed Plan were incorporated into EPA's Administrative Record, which was made available to the public in the Ringwood Public Library in October 2013. Furthermore, EPA provided the public with a period of four months (October 2, 2013 – February 5, 2014) to review documents which provide the basis for EPA's Proposed Plan and to submit comments to EPA concerning its Proposed Plan. Therefore, EPA has made available to the public the information which it relied upon to develop its Proposed Plan, including the contingency remedy for the O'Connor Disposal Area, and has provided the public with sufficient time to review and comment on its Proposed Plan.

Subsequent to the above-referenced September 11, 2013 meeting, EPA directed Ford and the Borough of Ringwood to conduct a qualitative analysis of risk to a potential future recycling center worker in the O'Connor Disposal Area. This analysis was necessary to determine whether the operation of a new recycling center within the O'Connor Disposal Area would present an unacceptable risk to recycling center workers. This analysis was documented in a Technical Memorandum entitled "Qualitative Assessment of Future Recycling Center Worker at the O'Connor Disposal Area of Concern", which was approved by EPA on September 26, 2013, and incorporated into the Administrative Record.

Comment #73: A commenter notes that the selected remedy for the O'Connor Disposal Area, Alternative 5A, costs approximately $6,000,000 more than Alternative 5B because of the cost of moving mine tailings to the Peters Mine Pit. However, using these mine tailings as fill for the Peters Mine Pit will reduce the cost to implement the selected remedy for the Peters Mine Pit Area. The commenter inquired as to where credit is taken for these reduced costs.

Response #73: The selected remedy for the O'Connor Disposal Area, Alternative 5A, provides for the *optional* use of mine tailings as fill for the Peters Mine Pit. Therefore, in order to provide a conservative estimate of costs associated with implementation of Alternative 5A, the cost estimate for this Alternative includes costs associated with the use of mine tailings as fill for the Peters Mine Pit. However, the selected remedy for the Peters Mine Pit Area, Alternative 6A, does not require the use of mine tailings as fill for the Peters Mine Pit. Therefore, in order to provide a conservative estimate of costs associated with implementation of Alternative 6A, the cost estimate for this Alternative assumes that imported fill will be used to backfill the Peters

Mine Pit. However, EPA believes that an overall cost savings would be realized if mine tailings from the O'Connor Disposal Area were used as fill for the Peters Mine Pit in lieu of using imported fill.

Comment #74: A commenter notes that using mine tailings from the O'Connor Disposal Area as fill for the Peters Mine Pit Area will reduce truck traffic through the residential area of the Site, and asks where this reduced truck traffic is quantified.

Response #74: EPA agrees that the use of mine tailings as fill for the Peters Mine Pit would reduce truck traffic through the Site, as fewer trucks would be required to import fill to the Peters Mine Pit Area of the Site. However, in order to provide a conservative estimate of the potential short-term impacts related to implementation of the selected remedy for the Peters Mine Pit Area, EPA has assumed that imported fill in lieu of mine tailings will be used to backfill the Peters Mine Pit.

Comment #75: A commenter indicates that EPA's use of the term "contingency" for Alternative 4A indicates that EPA foresees problems with Alternative 5A, the selected remedy for the O'Connor Disposal Area. The commenter requests that EPA identify any implementability issues it believes may be associated with Alternative 5A.

Response #75: EPA's identification of Alternative 4A as a contingency remedy was not prompted by concerns with the implementability of the selected remedy, Alternative 5A, but by the Borough of Ringwood's intent to reuse the land which comprises the O'Connor Disposal Area for a new recycling center. As indicated in the ROD, if a portion of the O'Connor Disposal Area were to be reused as the Borough's recycling center, many of EPA's concerns that inform selection of Alternative 5A would be addressed with respect to that reused portion. Among the primary reasons for EPA's selection of Alternative 5A are concerns regarding the potential for unauthorized access to the area and associated damage to the cap which may result if a containment alternative was selected. However, under the Borough's recent proposal, the portion of the O'Connor Disposal Area that would be used for the recycling facility would be capped with asphalt which would mitigate concerns regarding damage to the cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property. The Borough has also communicated its view that the existing recycling facility property would be a better greenspace asset than the steeply sloped property that would remain at the O'Connor Disposal Area if Alternative 5A were to be implemented.

It should also be noted that consideration of the future use of a site is an integral component of EPA's remedy selection process. While it is not EPA's role to specify how a municipality or other property owner may reuse a remediated site, EPA endeavors to work with communities and property owners to ensure that implemented remedies do not create barriers for safe, viable reuse of site properties. If the property is reused as proposed by the Borough, EPA believes that with respect to the portion of the O'Connor Disposal Area on which the recycling facility would be located, Alternative 4A would best satisfy the nine evaluation criteria and EPA's objective to advance environmental protection while facilitating reuse of sites as valuable community

assets. Therefore, EPA has concluded that Alternative 4A should be the contingency remedy for the O'Connor Disposal Area.

Comment #76: Several commenters urged EPA to implement its selected remedy for the O'Connor Disposal Area, Alternative 5A, in order to provide for long-term protection of the Wanaque Reservoir water supply.

Response #76: EPA notes that groundwater and surface water quality have been monitored at and downgradient of the Site since the 1980s, with no indication that a groundwater contaminant plume has emanated from the Site and with no observed impact on water quality in the Wanaque Reservoir. Regardless, any remedy implemented in the O'Connor Disposal Area will be executed in a manner which mitigates potential impacts to groundwater and surface water quality. EPA's selected remedy and contingency remedy both require that groundwater monitoring be conducted in the O'Connor Disposal Area until a groundwater remedy is selected for the Site. Furthermore, the contingency remedy requires long-term monitoring and maintenance of the capped area to ensure the integrity of the cap and to ensure that the contained fill does not impact the Park Brook.

Comment #77: A commenter expressed concern that if a new recycling center was to be constructed in the O'Connor Disposal Area, the operation of heavy trucks hauling recycling materials and excavation equipment for composting would destroy the soil cap called for under the contingency remedy. The commenter further asks who will be responsible for paying to monitor and maintain the cap.

Response #77: The Borough of Ringwood's current plans for the new recycling center provide for the installation of an asphalt/concrete surface over the soil cap in the area of the O'Connor Disposal Area which would be used as the recycling center. This surface will better withstand the operation of heavy trucks and excavation equipment while effectively preventing exposure to the underlying fill material. It should be noted that EPA anticipates that the Ford Motor Company and the Borough of Ringwood will enter into enforcement agreements with EPA which require the construction and maintenance of the selected remedy. Under these agreements, the Ford Motor Company and the Borough of Ringwood would be responsible for the cost of monitoring and maintaining the cap.

Comment #78: A commenter asserts that there is no need to move the recycling center to the O'Connor Disposal Area.

Response #78: The Borough of Ringwood, as the operator of the recycling center and the owner of the property which comprises the O'Connor Disposal Area, is responsible for the decision to move the recycling center to the O'Connor Disposal Area. As noted in the ROD, consideration of the intended future use of a site is an integral part of EPA's remedy selection process. EPA endeavors to work with communities and property owners to ensure that implemented remedies do not create barriers to safe, viable reuse of site properties. To that end, EPA has identified Alternative 4A as a contingency remedy for the O'Connor Disposal Area, given that the Borough of Ringwood has indicated that this alternative is the most compatible with its intended use of this property.

Comment #79: One commenter believes that EPA's remedy for the O'Connor Disposal Area should not be based upon promises or plans presented by the Borough of Ringwood, as these plans may not be implemented. Other commenters questioned whether EPA was taking steps to ensure that the Borough of Ringwood's proposal to move the recycling center to the O'Connor Disposal Area was legitimate and would not delay remediation of the Site.

Response #79: The ROD indicates that the contingency remedy for the O'Connor Disposal Area will only be implemented if the following occurs:

(A) The Borough provides EPA with the following within six months of the date of this ROD: (1) detailed engineering plans for the new recycling center; (2) financial assurance(s) indicating that sufficient funds will be available for construction of the recycling center; and (3) assurances and supporting documentation which indicates that the construction of the contingency remedy, including the recycling center, can and will be completed within either a shorter or, at least within a comparable timeframe than it would take to implement the selected remedy for the O'Connor Disposal Area; and

(B) EPA determines that the information and assurance(s) that the Borough has submitted to EPA, as described above, are sufficient to allow the contingency remedy to be implemented.

Comment #80: One commenter asks whether the costs for maintaining the cap provided for as part of the contingency remedy is expected to exceed the cost for complete removal of fill material, as provided for under EPA's selected remedy for the O'Connor Disposal Area.

Response #80: The costs for cap maintenance are not expected to exceed the cost for complete removal of fill material under the selected remedy for the O'Connor Disposal Area. The estimated total present net worth cost for construction and 30 years of maintenance of the contingency remedy is $5,350,000, while the total present net worth cost for implementation of the selected remedy is $32,605,900.

Comment #81: A commenter questions what would happen if the contingency remedy was implemented and the Borough of Ringwood decides to shut down the new recycling center at some point in the future.

Response #81: EPA's identified contingency remedy is Alternative 4A, Site Grading and Permeable Engineered Cap. As a component of this remedy, long-term monitoring and maintenance of the capped area will be required as long as the remedy remains in place. If the Borough of Ringwood were to shut down the recycling center at some time in the future, monitoring and maintenance of the capped area would continue to be required.

Comment #82: A commenter asks why EPA didn't insist that Upper Ringwood residents be present when the Borough of Ringwood formally presented its plans for the new recycling center.

Response #82: EPA was not aware that the Borough of Ringwood would be formally presenting plans for a new recycling center at a September 11, 2013, meeting until it received a PowerPoint

presentation on September 10, 2013. It should be noted that EPA shared the Borough's plans with the Upper Ringwood community at the September 24, 2013, Community Advisory Group meeting.

Cannon Mine Pit Area

Comment #83: A commenter notes that based upon the results of extensive remedial investigation activities completed in the Cannon Mine Pit Area, that they agree with EPA's selection of Alternative 3A as the remedy for the Cannon Mine Pit Area.

Response #83: Comment noted.

Comment #84: Several commenters indicated that they believe Alternative 5, Removal and Off-Site Disposal of All Industrial and Municipal Fill Material within the Cannon Mine Pit Area, should be the selected remedy for the Cannon Mine Pit Area of the Site. These commenters expressed concern that the selected remedy, Alternative 3A, would leave the potential for future exposure of adults and children to impacted fill.

Response #84: EPA notes that during evaluation of alternatives for the Cannon Mine Pit Area, EPA determined that implementation of Alternative 5 would have greater potential impacts on the surrounding community and workers than Alternative 3A. EPA estimates that over 7,800 truck trips through the Upper Ringwood community would be required to transport all of the impacted fill material off site as part of Alternative 5. In addition, the extensive excavation, loading and transportation of contaminated fill would put the community at greater risk for exposure to dust and air emissions. Implementation of Alternative 3A, Permeable Engineering Cap of Cannon Mine Pit Area, will result in fewer impacts on the community as extensive excavation, loading and transportation of contaminated fill will not be required. Furthermore, Alternative 3A will mitigate the potential for future exposure to contaminated fill by containing this fill material under a vegetated permeable cap. In addition, engineering controls, such as a fence, will be installed to protect the cap and to further minimize the potential for exposure to the fill material. Monitoring and maintenance of the permeable cap will be conducted for the life of this selected remedy to ensure that Alternative 3A remains protective. After consideration of these factors, EPA has determined that Alternative 3A can be implemented in a manner which provides for long-term protection of human health and the environment with less risk of community or worker exposure to contaminated fill than Alternative 5, and provides the best balance of tradeoffs among the remedial alternatives with respect to EPA's nine evaluation criteria.

Comment #85: A commenter notes that the selected remedy does not address restoration of this area of the Site for community use and questions why this was not a factor for the Cannon Mine Pit Area but was for the O'Connor Disposal Area remedy selection process.

Response #85: Given its small size and location at the top of a ridge, EPA believes that this area of the Site would be of limited use to the community. Furthermore, widespread historic use of this area has not been observed by EPA. The O'Connor Disposal Area is almost three times the size of the Cannon Mine Pit area, and is located in close proximity to numerous residences, the

Peters Mine Road and the Ringwood State Park, making it more accessible and more likely to be used by the community.

Comment #86: A commenter indicated that the selected remedy will result in a closed landfill abutting a residential neighborhood, and will result in the Cannon Mine Pit Area looking exactly as it does today.

Response #86: The selected remedy will result in a landscaped soil cap being installed over the Cannon Mine Pit Area, which will improve the aesthetics of this area of the Site. During the remedial design, EPA will seek input from the community on the landscaping and fencing of the Cannon Mine Pit Area.

Groundwater

Comment #87: A commenter notes that 30 years of groundwater data collected from the Site documents that any groundwater contamination associated with the Site has not reached the Wanaque Reservoir. The commenter further notes that much of this data was collected before any remediation of the Site began, and asserts that it is therefore unreasonable, and technically unjustifiable, to believe that after remediation of the Site groundwater impacts to the Wanaque Reservoir would suddenly occur.

Response #87: EPA agrees that, based upon years of monitoring and evaluation, there is no evidence that the Wanaque Reservoir has been impacted, or will be impacted by the Site. It should be noted, however, that groundwater contamination across the entire Site is being addressed as part of a separate operable unit (OU3) and is not addressed in this ROD. A RI/FS for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater. That remedy will address long-term groundwater monitoring for the entire Site. In the interim, continued groundwater monitoring will also be implemented as a component of the selected remedy for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area. EPA anticipates that implementation of the OU2 remedy will be consistent with future OU3 remedial actions.

Comment #88: A commenter notes that groundwater quality within and immediately downgradient of the O'Connor Disposal Area indicates no impact to groundwater in this area.

Response #88: Site-wide groundwater is being addressed as part of a separate operable unit (OU3) and is not addressed in this ROD. A RI/FS for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater. Any impacts to groundwater in the O'Connor Disposal Area will be evaluated in the OU3 RI/FS. The OU3 remedy will address long-term groundwater monitoring for the entire Site. In the interim, continued groundwater monitoring will also be implemented as a component of the selected remedy for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area. EPA anticipates that implementation of the OU2 remedy will be consistent with future OU3 remedial actions.

Comment #89: A commenter questions why the Proposed Plan indicates that it will take a few years to complete a ROD for groundwater at the Site.

Response #89: It should be noted that the RI/FS process for groundwater is currently ongoing, and that the feasibility study report and risk assessments necessary for remedy selection have yet to be prepared. Therefore, given the current stage of the groundwater evaluation, the Proposed Plan included a very conservative estimate for completion of the groundwater ROD. However, language included in the OU2 ROD concerning the groundwater evaluation has been revised to indicate that a RI/FS for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater.

Comment #90: Several commenters expressed concern that groundwater contamination is being addressed as a separate component of the Site cleanup. These reviewers believe that a holistic view of Site impacts is necessary in order to ensure that appropriate remedies are selected. Other commenters allege that EPA has admitted that it did not look at the effects of Site-related contamination on water quality in the area.

Response #90: As noted in this ROD, EPA often segregates cleanup activities at a site into different phases or operable units (OUs), so that cleanup of environmental media or areas that have been characterized can occur while the nature and extent of contamination in other media or areas is being investigated. Such a phased approach provides for site contamination to be addressed in a more expeditious manner. In keeping with this approach, the EPA is addressing cleanup of the Site through immediate actions to address imminent threats to human health, known as removal actions, and longer term actions that are the subject of OU2 and OU3.

OU2, which is the subject of this ROD, addresses waste, fill material and soil located in the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas. Remedial options which limit direct exposure to contaminated soil and fill material and mitigate their potential to serve as a source of contamination to groundwater and surface water have been considered as the objectives for the aforementioned areas of the Site. While groundwater contamination will be addressed as a separate OU, sufficient groundwater quality data currently exists for EPA to determine whether each of these areas of the Site appear to be serving as a significant source of groundwater contamination. This data indicates that groundwater contaminants are only consistently detected in the Peters Mine Pit Area of the Site. Furthermore, only localized, low concentration groundwater impacts are noted in the Peters Mine Pit Area. Therefore, EPA does not believe that the OU2 areas are currently serving as significant sources of groundwater contamination.

It should be noted that the selected remedy for each of these areas of the Site is expected to help reduce the migration of precipitation through the fill material, thereby mitigating the potential migration of contaminants to groundwater and surface water. Therefore, EPA anticipates that implementation of the OU2 remedy will be consistent with future OU3 remedial actions.

Comment #91: A commenter questions whether natural resource damages have been recovered for Site-related impacts to the lands and waters of New Jersey.

Response #91: EPA has been informed that the State of New Jersey has not filed claims for natural resource damages related to the Site.

Comment #92: A commenter asked whether contamination dumped in the mines at the Site can leak into other nearby mines.

Response #92: As previously noted, groundwater contamination across the entire Site is being addressed as part of a separate operable unit (OU3). A RI/FS for OU3 is nearing completion and will serve as the basis for the selection of a remedy for Site-wide groundwater. However, the results of groundwater investigations conducted to date do not indicate that off-site migration of groundwater contamination has occurred.

Paint Sludge

Comment #93: A commenter questions whether paint sludge has been removed from the mine shafts associated with the Peters and Cannon Mines.

Response #93: The presence of paint sludge has not been identified in the mine shafts associated with the Peters Mine and Cannon Mine. Video logging of the accessible shafts associated with the Peters Mine and Cannon Mine was conducted by inserting a video camera into the flooded shafts and recording observations at depth. Paint sludge or drums were not observed during these events.

Comment #94: A commenter asked whether EPA was sure that paint sludge had not been dumped in other mines in New York and New Jersey.

Response #94: EPA cannot say with certainty that paint sludge related to operations at Ford's former Mahwah facility has not been disposed of in other mines in New York and New Jersey. It should be noted that paint sludge originating from Ford's Mahwah facility has been disposed of at several other locations outside of the Ringwood Mines/Landfill Site. In all of these cases, State or Federal regulatory agencies have or are in the process of coordinating the cleanup of this paint sludge. If additional paint sludge disposal areas are identified in the future, they will be addressed under the oversight of a State of Federal regulatory agency with jurisdictional authority in that matter.

Comment #95: A commenter asked where the waste excavated from the Site has been taken and where future waste removed from the Site would be disposed of.

Response #95: Wastes excavated from the Site have been sampled to determine whether they display hazardous characteristics, as defined in 40 CFR Part 261 Subpart C. Wastes which displayed these characteristics (ignitability, corrosivity, reactivity or toxicity) were disposed of at landfills permitted to accept hazardous wastes pursuant to Subtitle C of the Resource Conservation and Recovery Act (RCRA). Wastes which did not display hazardous characteristics as defined in 40 CFR Part 261 Subpart C, were disposed of at various non-hazardous landfills regulated under subtitle D of RCRA. EPA anticipates that the

characterization and off-site disposal of wastes to be addressed through implementation of the selected remedy will be conducted in a similar manner.

Other Comments

Comment #96: A commenter asks why EPA has not encouraged the development of treatment technologies.

Response #96: EPA has a history of promoting the development of new and innovative treatment technologies that could be used to address contamination at Superfund sites, beginning with the Superfund Innovative Technology Evaluation (SITE) Program. The SITE program was an integral part of EPA's research into alternative cleanup methods for hazardous waste sites around the nation. The SITE Program was created to encourage the development and routine use of innovative treatment and monitoring and measurement technologies. Under this program, EPA entered into cooperative agreements with technology developers. These developers researched and refined their innovative technologies at bench- or pilot-scale and then, with EPA's support, demonstrated them at hazardous waste sites. Today, EPA continues to promote various initiatives and partnerships dedicated to developing, supporting, and increasing awareness of innovative hazardous waste characterization, monitoring, and remediation technologies. EPA's Technology Innovation and Field Services Division has established a webpage, www.clu-in.org that summarizes its current efforts with respect to promoting innovative technologies.

It should be noted that all available treatment technologies were considered when developing remedial alternatives for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas.

Comment #97: Several commenters indicated that permanent relocation of residents living at the Site should have been a component of the selected remedy.

Response #97: EPA's preference is to address risk to human health posed by contamination at a Site by using well-designed methods of cleanup which allow people to remain safely in their homes. Because of this preference, EPA does not routinely include permanent relocation as a component of a potential remedy. EPA believes that the implementation of the remedy can be performed in a manner that is protective of human health and the environment. It should also be noted that from 2011 through 2013, EPA utilized its removal authority to clean up residential properties at the Site so that residents could remain safely in their homes. Furthermore, EPA believes that its selected remedy, once implemented, will address any potential risks to nearby residents which may be presented by contamination in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site.

Environmental Justice Assessment

Comment #98: A commenter asserts that EPA has not conducted an adequate Environmental Justice Assessment for the Site and is not in compliance with Executive Order 12898.

Response #98: The Environmental Justice (EJ) Assessment for the Site was conducted through the use of EPA's "Toolkit for Assessing Potential Allegations of Environmental Injustice",

which is EPA's latest guide for assessing potential allegation of environmental injustice. This EJ Assessment concluded, based on evidence and supporting data, that the Upper Ringwood community is an adversely impacted area, and recommended actions that should be taken by EPA to address EJ concerns. Actions recommended in the EJ Assessment included: restoration of the Site to the National Priorities List; establishment of a CAG; facilitate the availability of a Technical Assistance Grant (TAG); EPA/NJDEP coordination on Site cleanup efforts; facilitate the collection of health data; and improve communications with Site stakeholders. As noted in EPA's July 2013 Addendum to the Environmental Justice Assessment for the Ringwood Mines/Landfill Site, EPA has taken actions since issuance of the EJ Assessment to address all of the above-referenced recommendations. Therefore, EPA believes that it has conducted an appropriate EJ Assessment for the Site and is in compliance the requirements of Executive Order 12898.

Comment #99: A commenter asserts that a finding of environmental injustice might influence the decision about what remedial actions are appropriate for the Site.

Response #99: As noted in the EJ Assessment and the ROD, EPA has determined that the Upper Ringwood community is an adversely impacted area, and that implementation of cleanup actions at the Site are required to address potential risks to the Upper Ringwood community and the local environment. It should be noted that EPA worked closely with members of the Upper Ringwood community to obtain specific information concerning their use of the land and plants and game at the Site, which was reflected in the Site-specific exposure assumptions used in the HHRAs for the Site. Given the HHRA's finding that contamination at the Site may present an unacceptable risk to human health, EPA has determined that the response action selected in the ROD is necessary to protect public health and the environment.

ATTACHMENT A – Proposed Plan

ATTACHMENT A – Proposed Plan

Superfund Program
Proposed Plan

U.S. Environmental Protection Agency, Region 2

Ringwood Mines/Landfill Superfund Site Operable Unit Two
September 2013

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the Preferred Alternatives to address waste contained in three disposal areas of the Ringwood Mines/Landfill Superfund Site (Site), located in the Borough of Ringwood, Passaic County, New Jersey, and provides a rationale for these preferences. These three disposal areas, known as the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, comprise Operable Unit Two (OU2) of the Site.

The U.S. Environmental Protection Agency's (EPA's) Preferred Alternative to address waste contained in the Peters Mine Pit Area of the Site is Alternative 6A, which provides for the removal and off-site disposal of historic fill surrounding Peters Mine Pit, backfilling of the Peters Mine Pit and installation of a permeable engineered cap over the Peters Mine Pit. The EPA's Preferred Alternative for the Cannon Mine Pit Area is Alternative 3A, which will provide for the installation of a permeable engineered cap over the Cannon Mine Pit Area. The EPA's Preferred Alternative for the O'Connor Disposal Area is Alternative 5A, which will provide for the excavation of all soil/fill material from the O'Connor Disposal Area down to the top of the underlying mine tailings and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities. The undisturbed mine tailings at the bottom of the O'Connor Disposal Area which are not comingled with wastes and other fill materials could be removed and potentially reused onsite within the Peters Mine Pit Area in place of clean fill that would otherwise need to transported through the community.
The EPA is also proposing a contingency remedy for the O'Connor Disposal Area as a result of information that it has received from the Borough of Ringwood. The Borough has recently presented the EPA with planning documents for construction of a new recycling center in the O'Connor Disposal Area. If the Borough of Ringwood proceeds in a timely manner to formally adopt and obtain all necessary approvals to construct a new recycling center at the O'Connor Disposal Area, EPA's preferred alternative would then be Alternative 4A. This alternative would provide for the consolidation of fill materials from the fringe areas to the center of the O'Connor Disposal Area, followed by the installation of a two-foot thick soil cap over the fill materials. The excavated areas beyond the engineered cap where soil/fill would be moved for consolidation under the cap would be backfilled with 6 inches of certified clean fill and rough graded to ensure proper drainage prior to revegetation. The cleaned up fringe areas would encompass approximately 4 acres.

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:
October 2, 2013 – December 2, 2013
EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING: November 7, 2013
EPA will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Studies. Oral and written comments will also be accepted at the meeting. The meeting will be held in the Martin J. Ryerson Middle School, 130 Valley Road, Ringwood, NJ at 7:00 PM.

For more information, see the Administrative Record at the following locations:

U.S. EPA Records Center, Region 2
290 Broadway, 18th Floor.
New York, New York 10007-1866
(212) 637-4308
Hours: Monday-Friday - 9 am to 5 p.m., by appointment.

Ringwood Public Library
30 Cannici Drive
Ringwood, New Jersey 07456
Hours: Monday – Thurs. 10am to 9pm, Friday 10am – 5pm, Saturday 10am – 4pm

This Proposed Plan includes summaries of the cleanup alternatives for waste contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas. This document is issued by the EPA, the lead agency for Site activities, in consulation with the New Jersey Department of Environmental Protection (NJDEP), the support agency. The EPA, in consultation with NJDEP, will select the final remedies for OU2 after reviewing and considering all information submitted during a 60-day public comment period. The EPA, in consultation with NJDEP, may modify the preferred alternatives or select other response actions presented in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives presented in this document.

The EPA is issuing this Proposed Plan as part of its community relations program under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, commonly known as Superfund). Monthly Community Advisory Group Meetings have been held with the community since 2007. This Proposed Plan summarizes information that can be found in greater detail in the Remedial Investigations and Feasibility Studies (RI/FSs) and Risk Assessments for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas and other documents contained in the Administrative Record for the Site.

SITE DESCRIPTION

The Ringwood Mines/Landfill Superfund Site (Site) consists of approximately 500 acres in a historic mining district, and is approximately 1.5 miles long and 0.5 miles wide. Portions of the Site are currently used as State of New Jersey parkland (Ringwood State Park), utility corridors (Public Service Electric & Gas and Rockland Electric Company), Borough of Ringwood facilities, including a Recycling Center and a Public Works yard, a power sub-station and open space (Borough of Ringwood property). In addition, 48 residential properties are dispersed throughout the Site. Residents living within the boundaries of the Site currently receive their drinking water from the municipal water supply, which obtains water from well fields located in a different watershed approximately two miles southeast of the Site. The Site is drained by four streams that ultimately lead to the Wanaque Reservoir, located approximately one mile south of the Site. The Wanaque Reservoir serves as a source of drinking water for over two million New Jersey residents.

United States Census Bureau records indicate that 866 people live within one mile of the Site. At least 200 people are estimated to live within the 48 residences located within the Site boundaries. Many of the residents living within the boundaries of the Site are members of the Ramapough Lenape Indian Nation, which is recognized as a Native American tribe by the State of New Jersey. Members of this community have strong ties to the land and hunt game and consume vegetation gathered from the Site.

SITE HISTORY

The land which comprises the Site has been utilized for the mining of iron ore almost continuously from the mid-1700s to the early 1900s. Prior to 1940, the entire mine area was purchased by the U.S. Government and administered by the U.S. Government Defense Plant Corporation. The mine area was subsequently leased to the Alan Wood Steel Company as part of the World War II effort. In 1956, the U.S. Government sold the property to the Pittsburgh Pacific Company. It is believed that there was some use of the mines during the period of Pittsburgh Pacific Company ownership.

Mining operations conducted at the Site consisted of the crushing and grinding of the iron ore, with magnetic separation of the iron from the other ore constituents (tailings). It has been reported that much of the mine tailings was sold off as road dressing. However, mine tailings are found throughout the Site, including the O'Connor Disposal Area, which was used for the disposal of fine mine tailings (this "slime pond" area was utilized for the settlement of waste mine tailings from wet ore processing operations).

In January 1965, the Ringwood Realty Corporation, a wholly-owned subsidiary of the Ford Motor Company, purchased the mine area. Records indicate that in 1967, Ringwood Realty entered into a contract with the O'Connor Trucking and Haulage Corporation for the disposal of wastes generated at the Ford factory located in Mahwah, New Jersey. This contract provided for the disposal of these wastes, which included plant trash, paint sludge, drummed waste and other non-liquid plant wastes, at the Site.

In 1969, the Ringwood Realty Corporation began selling or donating portions of the Site. In 1970, 290 acres of the Site were donated to the Ringwood Solid Waste Management Authority. During the same year, additional acreage was sold to the Public Service Electric and Gas Company for use as a transmission line right of way. In 1973, 109 acres were donated to the New Jersey Department of Environmental Protection (NJDEP), this area was added to the Ringwood State Park. In that same year, Housing Operation with Training Opportunity (HOW TO) a New Jersey not for profit corporation, accepted the donation of over 35 acres of the Site. It is believed that by December 21, 1973, Ford no longer owned any portion of the Site.

The results of a July 1982 Site Inspection conducted by NJDEP identified levels of benzene, ethylbenzene, and xylene in water samples collected from the Peters Mine Airshaft, which led to the Site's inclusion on the National Priorities List (NPL) in 1983.

In March 1984, Ford entered into an Administrative Order on Consent (ACO) with the EPA which required the performance of a RI for the Site. The required RI was conducted by Ford's contractor in four phases between March 1984 and April 1988. In June 1987, the EPA issued Unilateral Orders (UAOs) to Ford which required the performance of a FS, and the removal and off-site disposal of paint sludge and associated soil. Pursuant to these UAOs, Ford completed a FS and removed over 7000 cubic yards of paint sludge and associated soil from the

Site in 1988. As part of this removal, pockets of paint sludge were removed from the northern portion of the Site near the Peters Mine Pit and the O'Connor Disposal Areas, and from an area near the Cannon Mine Pit.

In September 1988, the EPA issued a Record of Decision (ROD) which selected long-term monitoring of groundwater and surface water as the remedy for the Site. The ROD noted that the known areas of paint sludge had been removed from the Site.

Additional paint sludge deposits and drums were identified in the O'Connor Disposal Area in 1989, prompting the removal of 600 cubic yards of paint sludge and 54 drum remnants in 1990. Some of the drum contents were reported to have contained polychlorinated biphenyls (PCBs) at concentrations in excess of 50 parts per million (ppm).

The Site was deleted from the NPL in 1994, with the presumption that all paint sludge and drums of hazardous substances had been removed from the Site. The deletion was further supported by the determination that groundwater at the Site did not pose an unacceptable threat to human health and the environment.

From 1990 through 1995, Ford conducted a five-year Environmental Monitoring Program which provided for the sampling of monitoring wells and potable wells in the area of the Site. The results of this program indicated that groundwater contaminant levels had been reduced since paint sludge had been removed from the Site.

In 1995, the EPA was notified by a local resident of additional paint sludge located in a utility right-of-way near the Cannon Mine Pit Area, prompting the removal of an additional 5 cubic yards of paint sludge. In 1998, another resident notified the EPA of the presence of paint sludge in the O'Connor Disposal Area, prompting the removal of an additional 100 cubic yards of paint sludge and soil.

In September 2003, representatives of the Upper Ringwood residents wrote to the EPA regarding their concern over past exposures and paint sludge remaining at the Site, but provided no details regarding the location of remaining paint sludge. Additional paint sludge areas were subsequently identified during an April 2004 Site visit arranged by the residents' representatives.

In December 2004, Ford began the voluntary removal of surficial pockets of paint sludge identified at the Site. The discoveries of additional significant quantities of paint sludge at the Site prompted the EPA to restore the Site to the NPL in September 2006. Ford has removed over 53,500 tons of paint sludge and associated soil from 15 distinct areas of the Site, in addition to the O'Connor Disposal Area and the Peters Mine Pit Area, since December 2004.

In September 2005, Ford signed an ACO which requires the performance of an additional RI and risk assessment for the Site. In May 2010, Ford signed an ACO which requires the performance of FSs for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site, as well as Site-Related Groundwater Contamination. The Borough of Ringwood, which has also been identified as a Potentially Responsible Party for the Site, is coordinating with Ford on the performance of the RI/FSs for the Site.

The Site historically has contained and presently contains significant amounts of buried and surficial household wastes. From 1972 through 1976, the Borough of Ringwood operated a municipal landfill at the Site. Investigations conducted at the Site indicated that areas of the Site other than this municipal landfill were also used for the disposal of household wastes. Household refuse and construction debris was detected in 57% of test pits installed at the Site as part of a Site-wide Test Pit Investigation.

Due to the extensive mining activities formerly conducted at the Site, subsidence issues have historically been a concern. Subsidence issues reportedly occurred at the Site in 1961, 1979, 1998 and again in July 2005, when a sinkhole formed on a residential property located about 600 feet from a paint sludge disposal area. In 2006, additional sinkholes formed between two residential properties located near the former Cannon Mine Pit. Investigations conducted on these properties identified the presence of shallow voids related to mining activities, resulting in the Borough of Ringwood declaring the properties uninhabitable. The EPA has required that vibration monitoring be conducted during performance of remedial activities in areas near mine workings to mitigate the possibility of work-related subsidence issues.

SITE CHARACTERISTICS

The 500-acre Site is located in the northern portion of the Borough of Ringwood, Passaic County, New Jersey. The Site terrain is mountainous with peaks up to 900 feet above sea level and valleys which are generally below 500 feet in elevation. Bedrock in the valleys and other topographically low areas is covered by overburden which consists of unconsolidated and reworked glacial deposits and weathered bedrock.

The Peters Mine Pit Area is located in the north central part of the Site and is bound to the north by Park Brook. Most of the Peters Mine Pit Area falls within the Ringwood State Park, and is expected to remain in use as

part of the state park in the future. From 1967 through 1971, the 375-foot long, 200-foot wide and 90-foot deep mine pit was filled to the ground surface with waste from Ford's Mahwah facility. Since this time, settling of the fill in this area has occurred and a 300-foot long pond currently occupies what was once the deepest part of the mine pit. The pond is believed to be an expression of the water table.

The Cannon Mine Pit Area is located in the southwestern part of the Site. The pit was reportedly 180 feet long, 140 feet wide and 200 feet deep when mining operations ceased. Attempts were made to blast the pit closed when Ford purchased the property, which resulted in reducing the depth of the pit to approximately 60 feet. During the period of Ford ownership, the pit was reportedly filled to the ground surface with waste from Ford's Mahwah facility. Only minimal settling of the fill material has been noted in this area.

The 12-acre O'Connor Disposal Area is located to the south of the Peters Mine Pit Area along the Peters Mine Road. During the period of active mine operations, this area was utilized for the settling of waste mine tailings from wet ore processing operations. Subsequently, during the period of Ford ownership, the O'Connor Disposal Area was utilized for the disposal of waste from Ford's Mahwah facility. The results of investigations conducted in this area indicate that waste and fill materials are present to a maximum depth of approximately 20 feet below ground surface. In general, a layer of undisturbed mine tailings appears to underlay waste materials disposed of by Ford's contractor and other fill materials. The O'Connor Disposal Area generally slopes to the east toward the Park Brook.

Paint sludge and other drummed industrial wastes originating from Ford's former Mahwah facility are the primary sources of contamination at the Site. However, levels of arsenic above New Jersey background soil levels have been found in some samples of mine tailings collected from the Site. Given that arsenic has also been found at elevated levels in some paint sludge samples collected from the Site, the EPA believes that paint sludge is also a source of arsenic in other media at the Site.

Peters Mine Pit Area Investigation

A supplemental RI of the Peters Mine Pit Area was initiated in March of 2006. As part of this RI, two test trenches and seven test pits were installed in the fill material which surrounds the Peters Mine Pit pond to characterize the fill material and to define the perimeter of the fill area. The historic fill surrounding the pit extends to an average depth of approximately 10 feet. In addition, four directional (diagonal) borings were installed through the fill material in the pit to the sidewall or base of the pit. Soil/solid waste samples were collected from each 10-foot core recovered during the advancement of these borings (38 total samples) to characterize fill material contained within the Peters Mine Pit.

During these investigations, paint sludge was identified in both test trenches and two of the seven test pits installed in the pit. In addition, paint sludge was identified at depth in cores collected from one of the four directional borings. Lead and arsenic were detected in soil/solid waste samples collected from the subsurface borings at maximum concentrations of 8300 ppm and 82.9 ppm, respectively, which exceed the State of New Jersey's Residential Direct Contact Soil Remediation Standards (RDCSRSs) of 400 ppm and 19 ppm for lead and arsenic. Benzene was detected at a maximum concentration of 1.1ppm, which is below the RDCSRS of 2ppm. In addition, these investigations indicated that the Peters Mine Pit contains approximately 113,000 cubic yards of fill material, including approximately 23,700 cubic yards of mine tailings at the base of the pit.

The RI also included the installation and sampling of overburden and bedrock groundwater monitoring wells in the pit and in the vicinity of the pit. The results of these investigations indicated that benzene is present in groundwater in and downgradient of the pit at concentrations up to 5.5 parts per billion (ppb). In addition, benzene was detected in water contained in an airshaft to the east of the pit at concentrations as high as 33.2 ppb, which exceeds the New Jersey Ground Water Quality Standard (GWQS) of 1 ppb. The levels of benzene detected in groundwater in the Peters Mine Pit Area during this RI are consistent with levels detected during previous groundwater sampling events. Contaminants of concern were not detected at elevated levels in surface water samples collected from the Peters Mine Pit pond.

Cannon Mine Pit Area Investigation

A supplemental RI of the Cannon Mine Pit Area was initiated in October 2007. As part of this RI, 12 test pits were installed in and around the perimeter of the pit to characterize the fill material and the extent of the pit. In addition, six borings were installed within the pit into the underlying blast rock. Soil/solid waste samples were collected from each 10-foot core recovered during the advancement of these borings (31 total samples) to characterize the fill material contained within the Cannon Mine Pit. Ten surface soil samples were also collected from within the Cannon Mine Pit.

Paint sludge was not identified during the installation of the test pits and borings. However, 10 drums were removed from one test pit during these investigations.

The contents of two of these ten drums failed the Toxicity Characteristic Leaching Procedure (TCLP) for lead, and were required to be disposed of offsite as a hazardous waste. No contaminants were detected at concentrations above New Jersey's RDCSRSs in the surface soil samples collected during this RI. Lead and arsenic were detected in soil/solid waste samples collected from the borings at maximum concentrations of 9030 ppm and 56.7 ppm, respectively, which exceed New Jersey's RDCSRSs of 400 ppm and 19 ppm for lead and arsenic. In addition, these investigations indicated that the Cannon Mine Pit contains approximately 46,000 tons of fill material, excluding the blast rock located at the bottom of the pit.

The RI also included the installation and sampling of bedrock groundwater monitoring wells in the vicinity of the pit. The results of the groundwater investigation indicate that the Cannon Mine Pit sits on top of a small ridge with groundwater in shallow bedrock to the east of the pit flowing to the southeast and groundwater to the west of the pit flowing to the southwest. Lead and arsenic, which have sporadically been detected in groundwater in the Cannon Mine Pit Area at concentrations above the GWQSs of 5 ppb and 3ppb respectively, were not detected above GWQSs during the 2012 sampling event. Trichloroethene, which was detected in one monitoring well at concentrations above the GWQS of 1 ppb during sampling events conducted in 2008 and 2009, has not been detected in subsequent sampling events. A groundwater contaminant plume has not been identified in the Cannon Mine Pit Area.

O'Connor Disposal Area Investigation

A supplemental RI of the O'Connor Disposal Area (OCDA) was initiated in July 2006, and was conducted in two phases. The initial phase of the RI included the installation of 14 test trenches and 10 test pits in the OCDA in order to characterize the fill material and to delineate the extent of the fill. 29 soil samples were collected from the fill material and the bottom of the test pits and trenches. In addition, 15 surface soil samples were collected from the OCDA. The second phase of investigation, which was conducted in 2010, included the completion of eight additional test trenches (3169 linear feet), with the collection of 40 samples from the base of the trenches and 34 samples from the sidewalls of the trenches.

During performance of these investigations, paint sludge deposits were identified at the northern and southern ends of the OCDA. 2200 tons of this paint sludge was excavated and disposed of offsite by Ford during early 2010. In addition, five drums of waste were identified during this RI. Three of these drums were disposed of offsite as hazardous waste while the contents of the remaining two drums were disposed of offsite as Toxic Substances Control Act waste with concentrations of polychlorinated biphenyls (PCBs) in excess of 50 ppm. These investigations indicated that approximately 183,600 cubic yards of fill material and mine tailings are present within the OCDA.

Arsenic was detected in five of the 15 surface soil samples at concentration ranging from 42.4 ppm to 51.1 ppm, which exceed New Jersey's RDCSRS of 19 ppm. Arsenic was also detected above its RDCSRS in four of the 29 test pit/trench samples collected during the initial phase of investigation, and 29 of the 74 samples collected during the second phase of investigation. Lead was detected at concentrations above its RDCSRS of 400 ppm in one test pit/trench sample collected during the initial phase of investigation and one test trench sample collected during the second phase of investigation.

The RI also included the installation and sampling of overburden groundwater monitoring wells in the OCDA. Arsenic was detected above New Jersey's GWQS of 3 ppb in one well in the OCDA during the 2012 sampling event. No other contaminants were detected at concentrations above GWQSs during the 2012 sampling event. A groundwater contaminant plume has not been identified in the OCDA.

Biota Study

Given that the Upper Ringwood residents reported that they regularly consume plants and wildlife at the Site and their concern about the potential for contaminants to enter the food chain, biota sampling was conducted by the EPA's Environmental Response Team in 2006-2007 and again in 2009. This study involved the collection of frogs, crayfish, small mammals (mice, voles and shrews), eastern gray squirrel, rabbits, turkey, eastern white-tail deer, wild carrot, dandelion greens, mushrooms, strawberries and raspberries. The intent of this study was to assess the potential migration of Site-related contaminants into the food chain and to determine whether contaminants are present in biota consumed by the Upper Ringwood community.

The results of this study indicated that lead was accumulating in small mammals and wild carrot collected from the Site, particularly those collected from the O'Connor Disposal Area. However, lead accumulation was not observed in the larger wildlife which is consumed by the community. Other Site-related metals were not found to be substantively entering the food chain. In addition, Site-related organic contaminants were not found to be entering the food chain.

PRINCIPAL THREATS

The remedial alternatives being evaluated for the Peters Mine Pit, Cannon Mine Pit, and the O'Connor Disposal Area would address paint sludge and drummed industrial waste which likely remain in these areas of the Site. However, principal threat wastes have not been identified at the Site.

WHAT IS A "PRINCIPAL THREAT"?

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

SCOPE AND ROLE OF THE ACTION

The EPA is addressing the cleanup of this Site through immediate actions to address imminent threats to human health, and three phases of long-term cleanup.

Paint sludge and associated soil contamination located on non-residential properties outside of the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas are being addressed by Ford under removal authority. Furthermore, paint sludge and lead-contaminated soil located on residential properties at the Site are being addressed by the EPA under removal authority.

Operable Unit One (OU1) was originally intended to comprehensively address the Site. Subsequent to the restoration of the Site to the NPL, the EPA created two additional operable units, OU2 and OU3. OU2, which is the subject of this Proposed Plan, addresses waste, fill material and soil located in the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Areas. The FSs for these areas of concern evaluate a range of remedial options to limit direct exposure to contaminated soil and fill material and to mitigate their potential to serve as a source of contamination to groundwater and surface water.

A separate RI to evaluate groundwater contamination across the entire Site is now underway as part of a separate operable unit (OU3), and a separate Feasibility Study to evaluate remedial alternatives for Site-wide groundwater will follow. EPA expects that the RI and FS for OU3 will be completed and a proposed remedial plan for groundwater will be issued within the next few years. That plan and the subsequent record of decision will address long-term groundwater monitoring for the entire Site. In the interim, continued groundwater monitoring would also be implemented as a component of the remedial alternatives being proposed for the Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area. EPA intends to post the results of this groundwater monitoring on a publicly accessible website. EPA anticipates that implementation of the OU2 remedy will be consistent with future OU3 remedial actions.

SUMMARY OF OPERABLE UNIT 2 RISKS

As part of the RI/FSs for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas, baseline risk assessments were conducted to estimate the current and future effects of contaminants that currently exist at the site on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land, groundwater and surface water/sediment uses. The baseline risk assessment includes a human health risk assessment (HHRA).

Separate HHRAs have been completed for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site. While the EPA recognizes that individuals may spend only a portion of their time in a single area of the Site, the HHRAs calculate risk assuming that individuals confine their activities to a single area as it is possible that individuals may occasionally only spend time in a single area. In addition, in order to recognize that it is reasonable to assume people spend time at each area, the HHRAs include a second set of risk calculations which apportion exposures based upon the relative contribution of acreage of each area of concern to the total 22 acres of the three areas of concern at the Site.

The cancer risk and non-cancer health hazard estimates in the HHRAs are based on current and future reasonable maximum exposure scenarios. Consistent with risk assessment guidance that calls for characterizing activity patterns of site-specific populations (EPA, 1989) scenarios were developed based on conversations with Upper Ringwood community members who identified unique, site-specific exposure characterizations that address traditional and cultural uses of site plants and animals, as well as the land. In addition, EPA also evaluated default

assumptions regarding exposure that are consistently used in Superfund risk assessments. These sources of information – site-specific community input and traditional default information – were used to develop the exposure scenarios and assumptions that were carried into the HHRAs for the three areas, along with information on the toxicity of the chemicals of potential concern (COPCs). Cancer risks and non-cancer health hazard indices (HIs) for each of the areas of the Site are summarized below.

It is noted that areas of surficial paint sludge have been identified and removed as part of paint sludge removal actions conducted at the Site. As part of this paint sludge removal work, Ford also excavated buried paint sludge from within the Peters Mine Pit and O'Connor Disposal Areas. Because baseline risk assessments evaluates contamination that currently exists at the site, implementation of these removal actions has reduced the current and future risks that would have been identified had the removal actions not been conducted.

Peters Mine Pit Area Risk Assessment

The HHRA for the Peters Mine Pit Area evaluated Walker/Hiker/Dog Walker, Wader, Hunter and Current Outdoor Worker exposure scenarios, assuming an apportionment factor of 100%. This apportionment factor assumes that 100% of the receptors' exposure occurs within this area of the Site. The results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the Peters Mine Pit Area falls at the upperbound of the EPA's risk management range of 10^{-4} to 10^{-6}. The cumulative potential cancer risk for the hunter scenario for adult, young child and older child is 4×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to ingestion of arsenic in plant and game tissue. Potential risks associated with all other exposure scenarios fell within or below the EPA's risk management range. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter scenario, hazard indices were above the EPA's target HI of 1.0 for the circulatory system, skin, kidney and gastrointestinal tract. However, following the EPAs process for evaluating non-cancer hazards, when modes of action for the COPCs are considered, non-cancer HIs are less than the benchmark value of 1.0.

The HHRA for the Peters Mine Pit Area also evaluated Walker/Hiker/Dog Walker and Hunter exposure scenarios, assuming an apportionment factor of 23%. The cumulative potential cancer risk for these exposure scenarios is 1×10^{-4}. The apportioned potential non-cancer risk under the Walker/Hiker/Dog Walker scenario was at or below the EPA's target hazard index of 1 for all receptors. For the Hunter scenario, the hazard indices for the adult, youth and young child are all below 1 when assessed by target organ.

Anticipated blood lead levels in Site receptors were also evaluated to determine whether exposure to lead in media at the Site presents an unacceptable risk. Blood lead levels for the young child hunter following exposure to lead in game and plant tissue were predicted to exceed 10 micrograms per deciliter (ug/dl) in 14 percent of the hypothetically exposed population, which exceeds the EPA's target threshold of 5 percent, indicating potential unacceptable risk due to exposure to lead.

Cannon Mine Pit Area Risk Assessment

The HHRA for the Cannon Mine Pit Area evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Hunter, Current Outdoor Worker, Future Resident and Future Outdoor Worker exposure scenarios, assuming an apportionment factor of 100%. Results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the Cannon Mine Pit Area falls at the upperbound of the EPA's risk management range of 10^{-4} to 10^{-6}. The cumulative potential cancer risk for the hunter scenario for adult, young child and older child is 3×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to ingestion of arsenic found in plant and game tissue. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter scenario, hazard indices were above the EPA's target hazard index of 1.0 for the circulatory system and gastrointestinal tract. However, following the EPA's process for evaluating non-cancer hazards, when modes of action for the COPCs are considered, non-cancer HIs are less than the benchmark value of 1. Potential risks associated with all other exposure scenarios fell within or below the EPA's risk management range.

The HHRA for the Cannon Mine Pit Area also evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, and Hunter exposure scenarios, assuming an apportionment factor of 23%. The cumulative potential cancer risk for these exposure scenarios is 7×10^{-5}. The apportioned potential non-cancer risk under the Walker/Hiker/Dog Walker and Dirt Biker/ATV Rider scenarios was below the EPA's target hazard index of 1 for all receptors. For the Hunter scenario, the hazard indices for the adult, youth and young child are all below one when assessed by target organ.

Blood lead levels for the young child hunter following exposure to lead in game and plant tissue were also predicted to exceed 10 ug/dl in 5.6 percent of the hypothetically exposed population, which slightly exceeds the EPA's target threshold of 5 percent, indicating potential unacceptable risk due to exposure to lead.

O'Connor Disposal Area Risk Assessment

The HHRA for the O'Connor Disposal Area evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader, Hunter, Current Outdoor Worker and Resident exposure scenarios, assuming an apportionment factor of 100%. Results of the HHRA indicate that the potential cancer risk for game hunters and gathers of wild plants in the O'Connor Disposal Area falls at the upperbound of the EPA's risk management range of 10^{-4} to 10^{-6}. The cumulative potential cancer risk for the hunter scenario for adult, young child and older child is 3×10^{-4}, which indicates that there may be an unacceptable risk to these receptors due primarily to arsenic in plant and game tissue. Potential non-cancer risks were also estimated by calculating hazard indices. Under the Hunter scenario, hazard indices were above the EPA's target hazard index of 1.0 for the circulatory system, skin, kidney and gastrointestinal tract. Under the Resident scenario, hazard indices were above the EPA's target hazard index of 1.0 for the circulatory system and skin of the young child. However, following the EPAs process for evaluating non-cancer hazards, when modes of action for the COPCs are considered, non-cancer HIs are less than the benchmark value of 1.0. Potential risks associated with all other exposure scenarios fell within or below the EPA's risk management range.

The HHRA for the O'Connor Disposal Area also evaluated Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider, Wader and Hunter exposure scenarios, assuming an apportionment factor of 54%. The cumulative potential cancer risk for these exposure scenarios is 3×10^{-04}, which indicates that there would be an unacceptable risk to these receptors . The apportioned potential non-cancer risk under the Walker/Hiker/Dog Walker, Dirt Biker/ATV Rider and Wader scenarios was at or below the EPA's target hazard index of 1 for all receptors. For the Hunter scenario, the hazard index for the adult, youth and young child for the gastrointestinal tract is 2, which is slightly above the EPA's target index of 1. However, when modes of action for the COPCs are considered, non-cancer HIs are less than the benchmark value of 1.0.

Blood lead levels for the young child hunter following exposure to lead in game and plant tissue were also predicted to exceed 10 ug/dl in 5.6 percent of the hypothetically exposed population, which slightly exceeds the EPA's target threshold of 5 percent, indicating potential unacceptable risk due to exposure to lead.

Potential human health risk associated with exposure of a future recycling center worker to waste in the O'Connor Disposal Area was also qualitatively assessed, given the Borough of Ringwood's expressed intent to construct a recycling center in this area. The cancer risk to a future recycling center worker was estimated to be 2×10^{-5}, which is within EPA's risk management range. In addition, evaluation of the potential non-cancer risk to a future recycling center worker resulted in an HI of 0.2, which is below EPA's benchmark value of 1.0.

Ecological Risk

Separate ecological risk assessments have been completed for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas of the Site. The results of the Screening Level Ecological Risk Assessment (SLERA) for the Peters Mine Pit Area indicate that there are contaminants in soil and sediment that are present at concentrations greater than ecological based screening levels (EBSLs), which indicates a potential risk to terrestrial invertebrates, plants and aquatic invertebrates. The results of the SLERA prompted the performance of a Baseline Ecological Risk Assessment (BERA) which incorporated dose modeling for aquatic exposure pathways and refinements to dose modeling for soil. The results of dose modeling for soil indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole and the American robin) are low with no hazard quotient for any receptor exceeding 1. The results of dose modeling for sediment also indicated that risks associated with potential exposure of ecological receptors are low, with all Lowest Observed Adverse Effect Level (LOAEL) hazard quotients below 1, with the exception of copper in the tree swallow.

The SLERA for the Cannon Mine Pit Area indicates that there is a potential for adverse ecological impacts due to the presence of metals in soil at levels which exceed EBSLs. Furthermore, the results of food-chain modeling indicated that potential ecological risks within the Cannon Mine Pit Area were associated with exposures of metals in soil to the American robin, meadow vole and short-tailed shrew. The results of the SLERA prompted the performance of a BERA to provide an analysis of potential risks using more realistic exposure assumptions. The results of refined dose modeling for soil conducted as part of the BERA indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole and the American robin) are low, with no LOAEL hazard quotient exceeding 1.

The SLERA for the O'Connor Disposal Area concludes that there are potential risks to meadow vole, short-tailed shrew, American robin and the tree swallow associated with exposure to soil and sediment in the O'Connor Disposal Area. These potential risks are primarily associated with exposure to antimony, lead and nickel. In addition, this SLERA concludes that low levels of bis (2-

ethylhexyl)phthalate and cadmium in surface water, and metals in surface soil and sediment may pose a potential risk to plants and invertebrates in the O'Connor Disposal Area. The results of the SLERA prompted the performance of a BERA to provide an analysis of potential risks using more realistic exposure assumptions. The results of refined dose modeling for soil and sediment conducted as part of the BERA indicate that risks associated with potential exposure of ecological receptors (i.e. short-tailed shrew, meadow vole, American robin, red-tailed hawk and tree swallow) are low, with no LOAEL hazard quotient exceeding 1.

Conclusions of the Risk Assessments

It is the EPA's judgment that the Preferred Alternatives identified in this Proposed Plan for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas are necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) were developed for waste and soil contained in the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas to address the human health risks presented by potential exposure to these materials. The RAOs for these areas are as follows:

- Limit direct exposure to soil or fill materials containing constituent levels above NJDEP's direct contact cleanup levels;
- Limit or reduce exposures by residents, recreators, hunters, and/or hikers to an additional lifetime cancer risk range of between 1 x 10^{-4} and 1 x 10^{-6}, and lifetime non-carcinogenic hazard index less than 1.0; and
- Reduce the potential for contaminants in soil or fill materials to migrate into groundwater and surface water.

An additional RAO for the Peters Mine Pit Area is as follows:

- Permit recreational use of the Peters Mine Pit Area given its location within the Ringwood State Park.

WHAT IS RISK AND HOW IS IT CALCULATED?

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the contaminants of concern at the site in various media (i.e., soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil. Factors relating to the exposure assessment include, but are not limited to, the concentrations that people might be exposed to and the potential frequency and duration of exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response) are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects, such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health effects.

Risk Characterization: This step summarizes and combines exposure information and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the Exposure Assessment. Current Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of 10^{-4} to 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk). For noncancer health effects, a "hazard index" (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding reference doses. The key concept for a noncancer HI is that a "threshold level" (measured as an HI of less than 1) exists below which noncancer health effects are not expected to occur.

SUMMARY OF REMEDIAL ALTERNATIVES

Potential applicable technologies and process options were identified and screened using effectiveness, implementability and cost as the criteria, with the most emphasis on the effectiveness of the remedial technology. Those technologies and process options which passed the initial screening were assembled into remedial alternatives for waste and soil contained in the Peter Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas. It should be noted that Alternative 6A for the Peters Mine Pit Area has been modified in the Proposed Plan to allow for the segregation of nonhazardous soil and fill from the collar area of the pit and its reuse as fill for the Peters Mine Pit. In addition, Alternative 5A and 5B for the O'Connor Disposal have been modified so that they no longer require that undisturbed mine tailings from the bottom of the O'Connor Disposal Area which are not commingled with wastes and fill materials either be used as fill for the Peters Mine Pit or disposed of at an off-site permitted facility.

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Peters Mine Pit Area

Alternative 1 – No Action

No corrective action of any kind would be implemented under this alternative. The No Action Alternative was retained, as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and provides a baseline for comparison with other alternatives.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)
Total Present Net Worth	$0
Construction Duration	0 months

Alternative 2 – Institutional and Engineering Controls

Under this alternative institutional controls, such as a Deed Notice, would be implemented to help prevent potential exposure to contaminants in the fill material. In addition, engineering controls, such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to confirm that land use in the vicinity of the Peters Mine Pit Area is consistent with the selected remedy. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the entire site including the Peters Mine Pit Area. In the interim, for costing purposes, quarterly groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented EPA anticipates that the sampling frequency or number of wells sampled will be revised based on review of the groundwater analytical data.

Total Capital Cost	$17,800
Operation and Maintenance	$708,900 (Total)
Total Present Net Worth	$726,700
Construction Duration	1-2 months

Alternative 3 – Engineered Permeable Cap of Peters Mine Pit Area with Institutional Controls, Peters Mine Pit Pond would Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, a two-foot thick clean soil cover would be placed over the Peters Mine Pit and the surrounding fill area. The pit would not be filled in prior to placement of the soil cover, leaving the pit topographically lower than the surrounding area and enabling the restoration of the pond.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. A permeable geotextile liner would be placed over the compacted base, followed by eighteen inches of clean soil and six inches of topsoil. Appropriate vegetation would then be established. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$2,560,800
Operation and Maintenance	$683,300 (Total)
Total Present Net Worth	$3,244,100
Construction Duration	5-6 months

Alternative 4A - Fill Peters Mine Pit, Permeable Engineering Cap of Peters Mine Pit Area and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. Fill from areas surrounding the pit would then be consolidated within the pit. A geotextile fabric would be installed over the consolidated fill materials and the pit

and surrounding area would be backfilled with clean fill to provide an increase in elevation of approximately three feet around the perimeter area, which would result in positive drainage away from the pit. The need for a passive gas management system would be evaluated during design of this alternative.

Restoration of this area would also include vegetation with trees naturally present in Ringwood. The use of a permeable cap would permit the establishment of trees, including those with deep tap roots.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,345,500
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$5,111,000
Construction Duration	8-9 months

Alternative 4B - Fill Peters Mine Pit, Impermeable Engineering Cap of Peters Mine Area and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. In addition, clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. Fill from areas surrounding the pit would then be consolidated within the pit. The area surrounding the pit would be backfilled with clean soil, and a Geosynthetic clay liner (GCL) would be installed over the filled pit. A vegetative and protective soil cap consisting if eighteen inches of clean fill and six inches of topsoil would then be installed to protect the GCL.Because the GCL is impermeable, a passive methane gas management system would need to be installed. This alternative also removes the pond from the Peters Mine Pit Area.

Prior to placement of the cap, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the cap achieves design specifications prior to placing the cover.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,476,800
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$5,242,300
Construction Duration	9-10 months

Alternative 4C - Fill Peters Mine Pit, Impermeable Engineering Cap of Peters Mine Area, Barrier Wall and Institutional Controls, Peters Mine Pit Pond would not Remain

This alternative is the same as Alternative 4B except that it would include the installation of a bentonite slurry wall or similar subsurface barrier wall surrounding the pit beginning at the ground surface and extending into the underlying competent bedrock to minimize the potential for overburden groundwater flow through the pit area.

Total Capital Cost	$6,508,600
Operation and Maintenance	$765,500 (Total)
Total Present Net Worth	$7,274,100
Construction Duration	10-11 months

Alternative 5 - In-Situ Stabilization for Entire Peters Mine Pit Area with Institutional Controls, Peters Mine Pit Pond would Remain

Under this alternative, the institutional controls described in Alternative 2 would be implemented. All soil and fill materials within and surrounding the Peters Mine Pit would be stabilized in place by mixing the soil/fill material with an admixture, such as Portland cement, fly ash and/or bentonite. Conventional construction equipment, specialized injection systems, and/or specialized power augers could be utilized to achieve adequate mixing of the soil/fill material and the admixture.

After the stabilized material has solidified, at least one foot of soil will be placed over the area and seeded to reestablish vegetation. The pit would be left topographically lower than the surrounding area, which would allow restoration of the pond.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$25,792,200
Operation and Maintenance	$704,600 (Total)
Total Present Net Worth	$26,496,800
Construction Duration	22-23 months

Alternative 6A - Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative institutional controls, such as a Deed Notice, would be applied to this area to prevent uses other than for conservation land/recreational activities. In addition, the need for engineering controls, such as the installation of warning signs and the placement of boulders, to restrict access to this area by ATVs and other vehicles would be considered during the remedial design and included if necessary. Soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to the water table. While this alternative assumes that all excavated soil and fill would be disposed of off-site at an appropriately permitted facility, the segregation and reuse of suitable non-hazardous soil and fill as fill for the pit could be considered during design of this alternative. Clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. The area surrounding the pit would be filled with clean soil. A geotextile fabric would be installed over the fill materials and the pit and the surrounding area would be backfilled with clean fill to provide an increase in elevation of approximately three feet around the perimeter area, which would result in positive drainage away from the pit. The need for a passive gas management system would be evaluated during the design of this alternative.

Restoration of this area would also include vegetation with trees naturally present in Ringwood. The use of a permeable cap would permit the establishment of trees, including those with deep tap roots.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$9,456,600
Operation and Maintenance	$1,463,600 (Total)
Total Present Net Worth	$10,920,200
Construction Duration	8-9 months

Alternative 6B - Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit, Barrier Wall and Impermeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain

Under this alternative, the institutional and engineering controls would be implemented as described in Alternative 6A. Soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to the water table. While this alternative assumes that all excavated soil and fill would be disposed of off-site at an appropriately permitted facility, the segregation and reuse of suitable non-hazardous soil and fill as fill for the pit could be considered during design of this alternative. Clean imported fill would be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. A bentonite slurry wall, or similar subsurface barrier wall, would be installed surrounding the pit beginning at the ground surface and extending into the underlying competent bedrock to minimize the potential for overburden groundwater flow through the pit area. The area surrounding the pit would then be backfilled with clean soil, and an impermeable Geosynthetic clay liner (GCL) would then be installed over the filled pit. A clean soil layer of sufficient thickness would be placed over the GCL to protect the liner, provide for drainage away from the pit and to allow vegetation to be reestablished.

Because the GCL is impermeable, a passive methane gas management system would need to be installed. This alternative also removes the pond from the Peters Mine Pit Area.

Prior to placement of the cap, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the cap achieves design specifications prior to placing the cover.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$11,327,500
Operation and Maintenance	$1,463,600 (Total)
Total Present Net Worth	$12,791,100
Construction Duration	14-15 months

Alternative 7 - Removal and Off-Site Disposal of All Fill Material, Peters Mine Pit Pond would Remain
Under this alternative, soil/fill material within the Peters Mine Pit and surrounding fill area would be excavated to bedrock or clean overburden and transported off-site for disposal or recycling at an appropriately permitted facility. Post excavation soil sampling would be conducted in the base and sidewalls of the soil excavations to confirm that all contamination has been addressed. The area would then be backfilled with clean fill to a level which would permit the establishment of a pond. Long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$41,305,600
Operation and Maintenance	$445,800 (Total)
Total Present Net Worth	$41,751,400
Construction Duration	25-26 months

Cannon Mine Pit Area

Alternative 1 – No Action
No corrective action of any kind would be implemented under this alternative. The No Action Alternative was retained, as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and provides a baseline for comparison with other alternatives.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)
Total Present Net Worth	$0
Timeframe	0 months

Alternative 2 – Institutional and Engineering Controls
Under this alternative, institutional controls would be implemented to help prevent potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to confirm that land use in the vicinity of the Cannon Mine Pit Area is consistent with the selected remedy and to ensure that zoning and deed restrictions are complied with. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the Cannon Mine Pit Area. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$42,800
Operation and Maintenance	$384,300 (Total)
Total Present Net Worth	$427,100
Construction Duration	1-2 months

Alternative 3A – Permeable Engineering Cap of the Cannon Mine Pit Area
Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Existing pit fill material would be compacted and clean fill material would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A two-foot thick engineered soil cap, consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$974,600
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$1,349,500
Construction Duration	5-6 months

Alternative 3B – Impermeable Engineering Cap of the Cannon Mine Pit Area
Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Existing pit fill material would be compacted and clean fill material would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A Geosynthetic Clay Liner (GCL) would then be placed over the pit, followed by the placement of a soil cover to protect the liner and to allow vegetation to be established. Because the GCL is impermeable, a passive methane gas management system would need to be installed. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of

this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$1,214,900
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$1,589,800
Construction Duration	5-6 months

Alternative 4 – In-Situ Stabilization of the Entire Cannon Mine Pit Area

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Fill materials within and surrounding the Cannon Mine Pit would be stabilized in place by mixing the soil/fill material with an admixture, such as Portland cement, fly ash and/or bentonite. Conventional construction equipment, specialized injection systems, and/or specialized power augers could be utilized to achieve adequate mixing of the soil/fill material and the admixture. After the stabilized material has solidified, clean soil would be placed in low-lying areas to ensure drainage of surface water runoff. A soil cover consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit to allow vegetation to be established.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$5,926,300
Operation and Maintenance	$374,900 (Total)
Total Present Net Worth	$6,301,200
Construction Duration	7-8 months

Alternative 5 – Removal and Off-Site Disposal of All Industrial and Municipal Fill Material within the Cannon Mine Pit Area

Under this alternative, all of the fill/waste material within the Cannon Mine Pit Area would be excavated and disposed of off-site at an appropriately permitted facility. The blast rock at the bottom of the pit would not be removed. The pit would then be backfilled with clean fill material and graded to achieve a relatively flat topography. A minimum of six inches of top soil would be placed over this area and vegetation will be established. Long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the Cannon Mine Pit Area. In the interim, for costing purposes, annual groundwater monitoring of a subset of existing wells surrounding the Cannon Mine Pit Area for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$10,844,200
Operation and Maintenance	$168,500 (Total)
Total Present Net Worth	$11,012,700
Construction Duration	14-15 months

Alternative 6 – Relocation of Mine Tailings from the O'Connor Disposal Area and Placement of a Permeable Engineered Cap

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Existing pit fill material would be compacted and mine tailings from the O'Connor Disposal Area would be placed within the pit to raise the grade as necessary to promote drainage off of the cap. A two-foot thick engineered soil cap, consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. It is expected that a passive methane gas management system would need to be installed as part of this alternative because the mine tailings would become relatively impermeable once compacted.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$1,065,800
Operation and Maintenance	$347,500 (Total)
Total Present Net Worth	$1,413,300
Construction Duration	5-6 months

O'Connor Disposal Area

Alternative 1 – No Action

No remedial action of any kind would be implemented under this alternative. The No Action Alternative was retained, as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and provides a baseline for comparison with other alternatives.

Total Capital Cost	$0
Operation and Maintenance	$0 (Total)
Total Present Net Worth	$0
Timeframe	0 months

Alternative 2 – Institutional and Engineering Controls

Under this alternative, institutional controls would be implemented to help prevent potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to ensure that the implemented engineering controls remain protective and to confirm that land use in the vicinity of the O'Connor Disposal Area is consistent with the selected remedy. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the O'Connor Disposal Area. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$111,500
Operation and Maintenance	$320,500 (total)
Total Present Net Worth	$432,000
Construction Duration	1-2 months

Alternative 3 – Permeable Engineered Cap – Minimal Grading

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Minimal grading of fill materials would be conducted to ensure drainage from this area, fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The soil cap would consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil. Vegetation would also be restored in this area. Because there are wetlands within the area to be capped, these wetlands would be restored within the O'Connor Disposal Area. The need for a passive gas management system would be evaluated during design of this alternative.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,947,500
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$5,432,400
Construction Duration	13-14 months

Alternative 4A – Site Grading and Permeable Engineered Cap

Under this alternative, the institutional and engineering controls described in Alternative 2 would be implemented. Fill from the fringe areas of this area would be consolidated to the center of this area to minimize the size of the required cap and to permit the potential reuse of this area**.** During consolidation of the fill material from the fringe areas, the soil/fill material will be visually inspected to verify the findings of the RI. Should anything be encountered in the fill that is not suitable for reuse as sub-grade fill underneath the engineered cap, it will be segregated and transported for off-site disposal as the work progresses. After consolidation, fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The soil cap would consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil. Vegetation would also be restored in this area. The excavated areas beyond the engineered cap where soil/fill would be moved for consolidation under the cap would be backfilled with 6 inches of certified clean fill and rough graded to ensure proper drainage prior to revegetation. The cleaned up fringe areas would encompass approximately 4 acres. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the O'Connor Disposal Area. The need for a passive gas management system would be evaluated during design of this alternative.

This Alternative would be compatible with the Borough of Ringwood's expressed interest in reuse of the site as the Borough's recycling center.

Long-term monitoring and maintenance of the capped area would be required. In addition, long-term groundwater monitoring would also be implemented as a component of this alternative. Long-term groundwater monitoring would be addressed as described in Alternative 2.

Total Capital Cost	$4,865,100
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$5,350,000
Construction Duration	13-14 months

Alternative 4B – Site Grading and Impermeable Engineered Cap

This alternative is the same as Alternative 4A, except that a GCL would be placed over the fill materials instead of a two-foot thick soil cap. Soil cover would be placed over the liner to protect the liner and to allow vegetation to be established. Because the GCL is impermeable, a passive methane gas management system would need to be installed. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to

verify that the base for the cap achieves design specifications prior to placing the cover.

Total Capital Cost	$5,950,200
Operation and Maintenance	$484,900 (total)
Total Present Net Worth	$6,435,100
Construction Duration	15-16 months

Alternative 5A – Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings
This alternative provides for the excavation of all soil/fill material from the O'Connor Disposal Area down to the top of the underlying mine tailings and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities. The undisturbed mine tailings at the bottom of the O'Connor Disposal Area which are not comingled with wastes and fill materials could be removed and potentially reused onsite within the Peters Mine Pit Area in place of clean fill that would otherwise need to be transported through the community.

Following the excavation and disposition of fill and tailings, six inches of topsoil would be placed throughout the excavated area to enable revegetation of the O'Connor Disposal Area. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the O'Connor Disposal Area The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the O'Connor Disposal Area. In the interim, for costing purposes, annual groundwater monitoring of a subset of existing wells surrounding the O'Connor Disposal Area would be performed for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

Total Capital Cost	$32,437,200
Operation and Maintenance	$168,700 (total)
Total Present Net Worth	$32,605,900
Construction Duration	23-24 months

Alternative 5B – Removal of Fill for Off-Site Disposal
This alternative is the same as Alternative 5A except that instead of reusing the mine tailings as fill for the Peters Mine Pit, all undisturbed mine tailings located beneath the fill material would be left in place in the O'Connor Disposal Area.

Total Capital Cost	$26,023,100
Operation and Maintenance	$168,700 (total)
Total Present Net Worth	$26,191,800
Construction Duration	18-20 months

EVALUATION OF REMEDIAL ALTERNATIVES

Nine criteria are used to evaluate the different remedial alternatives individually and against each other in order to select the best alternative. This section of the Proposed Plan profiles the relative performance of all alternatives against the nine criteria, noting how they compare to the other options under consideration. The nine evaluation criteria are discussed below. A more detailed analysis of the presented alternatives can be found in the Feasibility Study Reports for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas.

Peters Mine Pit Area

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to contaminated fill material. While Alternative 2 would use institutional and engineering controls to reduce the likelihood of exposure to contaminated fill material, the potential for exposure to waste material would remain. Therefore, Alternative 2 would not be as protective of human health and the environment as other alternatives.

Alternatives 3 through 7 eliminate exposure pathways to the waste material by either containing the fill under an engineered cap, solidifying the fill material and/or through excavation and off-site disposal of the fill material. Therefore, Alternatives 3 through 7 are considered protective.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternatives 1 would not address fill material which contains contaminants at levels in excess of promulgated soil standards and would not comply with ARARs.

Alternatives 2 through 7 address the contaminated fill material by either containing the fill behind boulders or under an engineered cap, solidifying the fill material and/or through excavation and off-site disposal of the fill material. In addition, all of the alternatives are expected to comply with location-specific and action-specific ARARs. Therefore, Alternatives 2 through 7 are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no actions would be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use. However, its overall effectiveness is limited in comparison to other alternatives.

Alternatives 3, 4A, 4B and 4C employ covers to protect against direct contact with contaminated fill material and to limit the migration of contaminants to groundwater, and are considered to be effective. However, these covers would need to be maintained to remain effective in the long term. Alternative 6A and Alternative 6B provides for the permanent removal of approximately 22,000 tons of relatively shallow fill material in addition to the installation of a cover to prevent direct contact with the remaining fill material. Therefore, Alternative 6A and Alternative 6B are considered to be more effective in the long term than Alternatives 3, 4A, 4B and 4C.

Alternative 5 would permanently stabilize the contaminated fill material, and Alternative 7 would permanently remove all of the fill material from the Site. Therefore, Alternatives 5 and 7 are the most effective at achieving long-term effectiveness and permanence at the Site.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants and would not reduce their toxicity, mobility, or volume.

Alternatives 3 and 4A would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation by capping the fill, but would not reduce the toxicity or volume of contaminated fill. Alternatives 4B, 4C would further reduce the mobility of contaminants through installation of a GCL and/or subsurface barrier wall. Alternative 6A and Alternative 6B provides for the permanent removal of approximately 22,000 tons of fill in addition to the installation of a cover, and would reduce the volume of contaminated fill at the Site as well as the mobility of contaminants.

Alternative 5 would reduce both the toxicity and mobility of contaminants through stabilization of the contaminated fill. Alternative 7 would provide for the greatest reduction in the volume of contamination in the Peters Mine Pit Area.

THE NINE SUPERFUND EVALUATION CRITERIA

1. Overall Protectiveness of Human Health and the Environment evaluates whether and how an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

3. Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

4. Reduction of Toxicity, Mobility, or Volume (TMV) of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

5. Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

6. Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

7. Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. A discount rate of 7% was utilized in the calculation of present worth costs for the Site. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

8. State/Support Agency Acceptance considers whether the State agrees with the EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

***9.* Community Acceptance** considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts.

Alternative 3, which consists of capping of the fill material in place, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. Alternatives 4A, 4B and 4C are expected to

have greater potential impacts on the community and workers due to the additional handling and transportation of impacted fill material.

Alternative 5 leaves the impacted fill material in place, but there is a higher potential for worker exposure to impacted fill material as a result of the mixing process. Workers and the surrounding community may also have some additional potential for exposure to contaminants through dust and air emissions from the mixing process, though plans would be developed to mitigate dust and air emissions.

Alternative 6A and Alternative 6B pose a greater risk of exposure to contaminated fill material than the previously discussed alternatives due to the excavation of fill material. Workers and the community could potentially be exposed to fill material during the excavation, segregation, loading and off-site disposal of the contaminated fill. Furthermore, the Ringwood community would be subjected to the additional truck traffic associated with off-site disposal of the fill material.

Alternative 7 presents the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with this alternative presents the greatest potential for community and worker exposure to contaminated material. It is estimated that more than 28,700 truck trips through the Ringwood community would be required to transport all of the waste material off site as part of this alternative. In addition, voids, large concrete structures and other barriers may be encountered during excavation of fill from the Peters Mine Pit, which could pose an additional hazard to Site workers.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves implementation of limited engineering controls. Alternatives 3, 4A, 6A, 4B, 4C and 6B would involve additional time to construct associated with construction of engineered caps. Alternatives 5 and 7 would involve the greatest construction time as they would involve either processing or excavation of all of the fill in the Peters Mine Pit.

Implementability

Alternative 1 is the most readily implementable as no action would be required. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternative 3 is expected to be the next easiest alternative to implement as the soil cap would be installed without the need to move fill materials to prepare the base for the cap. Alternatives 4A and 4B and 6A, while implementable, will require additional work to consolidate or excavate impacted fill material prior to installation of the cap.

Alternatives 4C and 6B would require more extensive excavation work with specialized equipment to install an impermeable barrier wall into the crystalline bedrock. Therefore, Alternatives 4C and 6B are expected to be more difficult to implement than Alternatives 1, 2, 3, 4A, 4B and 6A.

Alternatives 5 and 7 are expected to be the most difficult of the alternatives to implement. Alternative 5 would likely require specialized equipment to mix admixture into the fill material at depth. Alternative 7 may also require the use of specialized equipment to excavate fill material to a depth of 90 feet below ground surface. In addition, the heterogeneity of the fill material, including the potential presence of concrete structures and metal, and the potential structural instability of the pit would complicate implementation of these alternatives.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 3 ($3,244,100), Alternative 4A ($5,111,000), Alternative 4B ($5,242,300), Alternative 4C ($7,274,100), Alternative 6A ($10,920,200), Alternative 6B ($12,791,100), Alternative 5 ($26,496,800) and Alternative 7 ($41,751,400). Alternatives 5 and 7 are significantly more costly than the other alternatives due to the need to effectively treat or remove all of the fill material contained within the Peters Mine Pit to an approximate depth of 90 feet below ground surface. Alternative 6A and Alternative 6B are more costly than Alternatives 3, 4A, 4B and 4C due to the added cost of excavation and off-site disposal of fill material down to the water table.

State/Support Agency Acceptance

The State of New Jersey agrees with the preferred alternative for the Peters Mine Pit Area, which is presented in this Proposed Plan.

Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the Responsiveness Summary of the OU2 Record of Decision for this Site. The Record of Decision is the document that formalizes the selection of the remedy for a site.

Cannon Mine Pit

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to fill material. While Alternative 2 would use institutional and engineering controls to reduce the likelihood of exposure to fill material, the potential for exposure to waste material would remain. Therefore, Alternative 2 would not be as protective of human health and the environment as Alternatives 3 through 6.

Alternatives 3 through 6 eliminate exposure pathways to the waste material by either containing the fill under an engineered cap, solidifying the fill material and/or through excavation and off-site disposal of the fill material.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternative 1 would not address fill material which contains contaminants at levels in excess of promulgated soil standards and would not comply with ARARs.

Alternatives 2 through 6 address the contaminated fill material by either containing the fill material behind a fence or under an engineered cap, solidifying the fill material and/or through excavation and off-site disposal of the fill material. In addition, all of the alternatives are expected to comply with location-specific and action-specific ARARs. Therefore, Alternatives 2 through 6 are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no actions will be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use. However, its overall effectiveness is limited in comparison to other alternatives.

Alternatives 3A, 3B and 6 employ covers to protect against exposure with contaminated fill material and to limit the potential migration of contaminants to groundwater, and are considered to be effective. However, these covers would need to be maintained to remain effective in the long term.

Alternative 4 would permanently stabilize the contaminated fill material which would minimize the potential for direct contact with contaminants and the potential migration of contaminants to groundwater. Furthermore, Alternative 5 would remove all of the fill material above the blast rock from the Site, eliminating the potential for exposure to this fill material at the Site. Therefore, Alternatives 4 and 5 are the most effective in the long term.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants and would not reduce their toxicity, mobility, or volume.

Alternatives 3A, 3B and 6 would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation by capping the fill, but would not reduce the toxicity or volume of contaminated fill. Alternative 4 would reduce both the toxicity and mobility of contaminants through stabilization of the contaminated fill. Alternative 5 would provide for the greatest reduction in the toxicity, mobility and volume of contamination in the Cannon Mine Pit Area by completely removing all of the fill located above the blast rock from the Site.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts.

Alternative 3A and 3B, which consist of capping fill material in place, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. Alternative 6 is expected to have greater potential impacts on workers and the community than Alternatives 3A and 3B, due to the need to transport and handle mine tailings from the O'Connor Disposal Area.

Alternative 4 leaves the impacted fill material in place, but there is a higher potential for worker exposure to impacted fill material as a result of the mixing process. Workers and the surrounding community may also have some additional potential for exposure to contaminants through dust and air emissions from the mixing process.

Alternative 5 presents the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with this alternative presents the greatest potential for community and worker exposure to contaminated material. It is estimated that more than 7800 truck trips through the Ringwood community would be required to transport all of the waste material off site as part of this alternative. The impacts associated with these activities would need to be addressed through the development of transportation control plans, air monitoring and dust mitigation control plans.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves implementation of limited engineering controls. Alternatives 3A, 3B, 6 and 4 would involve additional time to construct associated with construction of engineered caps or stabilization of the fill. Alternative 5 would involve the greatest construction time as it would require excavation of all of the fill above the blast rock in the Cannon Mine Pit.

Implementability

Alternative 1 is the most readily implementable as no action would be required. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternative 3A and 3B are expected to be the next easiest alternatives to implement as construction of the engineered caps can be conducted with minimal disruption of the existing fill materials in the pit and with minimal consolidation of materials surrounding the pit. Alternative 4, which also provides for the construction of an engineered cap, is expected to be more difficult to implement than Alternatives 3A and 3B, due to the need to excavate and transport mine tailings from the O'Connor Disposal Area to the Cannon Mine Pit Area.

Alternatives 4 and 5 are expected to be the most difficult of the alternatives to implement. Alternative 4 would likely require specialized equipment to mix admixture into the fill material at depth. Alternative 5 will require the use of sloping and shoring systems to allow for excavation of fill to the depth of blast rock. In addition, the heterogeneity of the fill material and the potential presence of voids in the pit would complicate implementation of these alternatives.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 3A ($1,349,500), Alternative 6 ($1,413,300), Alternative 3B ($1,589,800), Alternative 4 ($6,301,200), and Alternative 5 ($11,012,700). Alternatives 4 and 5 are significantly more costly than the other alternatives due to the need to effectively treat or remove all of the fill material contained within the Cannon Mine Pit to the depth of blast rock.

State/Support Agency Acceptance

The State of New Jersey agrees with the preferred alternative for the Cannon Mine Pit Area, which is presented in this Proposed Plan.

Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the Responsiveness Summary of the OU2 Record of Decision for this Site. The Record of Decision is the document that formalizes the selection of the remedy for a site.

O'Connor Disposal Area

Overall Protection of Human Health and the Environment

Alternative 1 would not provide for protection of human health and the environment as waste material would remain at the Site. In addition, no action would be taken to restrict exposure to fill material. Because Alternative 2 would rely on institutional and engineering controls to reduce the likelihood of exposure to fill material, the potential for exposure to waste material would remain.

Alternatives 3, 4A and 4B would protect human health and the environment by limiting potential exposure to fill materials by containing them with a cap; the caps would also reduce infiltration of precipitation through the fill materials and the potential for migration of contaminants from the fill into the groundwater and surface water. Because this disposal area is located directly adjacent to Peters Mine Road and is therefore readily accessible, it may be attractive to tresspassers (potentially including ATV users) and therefore these capping alternatives would require diligent monitoring and maintenance to

ensure the integrity of the caps over time. If the area was reused as the site of a Borough recycling center, concerns regarding damage to the cap and trespassing would be reduced. Alternatives 5A and 5B provide the greatest level of protection of human health and the environment at the Site through the complete excavation and off-site disposal and/or reuse of the fill material.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternative 1 would not address fill material which contains contaminants at levels in excess of promulgated soil standards and would not comply with ARARs.

Alternatives 2 through 5B address the contaminated fill material by either containing the fill material behind a fence or under an engineered cap or through excavation and off-site disposal of the fill material. In addition, all of the alternatives are expected to comply with location-specific and action-specific ARARs. Therefore, Alternatives 2 through 5B are expected to comply with all applicable ARARs.

Long-Term Effectiveness and Permanence

The No Action Alternative would not be effective in the long-term because no actions would be taken to address the contamination. Alternative 2 provides some effectiveness by restricting land use. However, its overall effectiveness is limited in comparison to other alternatives.

Alternatives 3, 4A and 4B employ engineered caps to protect against exposure with contaminated fill material and to reduce the potential migration of contaminants to groundwater, and are considered to be effective. However, these engineered caps would need to be maintained over the long term to remain effective. These alternatives would also leave waste within the State of New Jersey Category 1 stream buffer zone/floodplain of Park Brook which would potentially subject these engineering controls to additional maintenance issues associated with flooding and erosion. As noted above, because this disposal area is located directly adjacent to Peters Mine Road and is therefore readily accessible, it may be attractive to trespassers (potentially including ATV users) whose use could present some maintenance challenges. If the area was reused as the site of a Borough recycling center, concerns regarding damage to the cap and trespassing would be reduced because the center would be in active use.

Alternatives 5A and 5B would provide for the removal of all of the contaminated fill material from the O'Connor Disposal Area, permanently eliminating the potential for exposure to this fill material at the Site. Therefore, Alternatives 5A and 5B are the most effective in the long term. Additionally, Alternatives 5A and 5B would allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be required under the other alternatives.

Reduction of Toxicity, Mobility, or Volume Through Treatment

Alternatives 1 and 2 would not treat the contaminants and would not reduce their toxicity, mobility, or volume.

Alternatives 3, 4A and 4B would reduce the mobility of contaminants present in the fill material by reducing the infiltration of precipitation by capping the fill. In addition, installation of an engineered cover would reduce the potential of contaminated fill washing into the Park Brook during rain events. However, these alternatives would not reduce the toxicity or volume of contaminated fill.

Alternative 5A and 5B would provide for the greatest reduction in the toxicity, mobility and volume of contamination in the O'Connor Disposal Area by permanently removing all of the contaminated fill from this area of the Site.

Short-Term Effectiveness

The No Action Alternative includes no construction and would have no short-term impacts at the Site. Alternative 2 provides for minimal construction to install engineering controls and would have very limited short-term impacts.

Alternative 3, which consist of capping fill material in place without consolidation of fill, would minimize impacts to workers and the community because the handling of contaminated fill is minimized. Alternatives 4A and 4B are expected to have greater short term impacts on workers and the community than Alternative 3, due to the need for additional handling and consolidation of the contaminated fill.

Alternative 5A and 5B present the greatest potential for impacts on the community and workers during implementation. The extensive excavation, loading and off-site transportation of contaminated fill associated with these alternatives presents the greatest potential for community and worker exposure to contaminated material. It is estimated that 12,519 truck trips through the Ringwood community would be required to transport all of the waste material off site under these alternatives. The impacts associated with these activities would need to be addressed through the development of transportation control plans, air monitoring and dust mitigation control plans.

Alternative 1 would require no time to implement since no action would be taken. Alternative 2 would require the least time to construct of the active remedies, because it only involves implementation of limited engineering controls. Alternatives 3, 4A and 4B would involve additional time to construct associated with construction of engineered caps. Alternatives 5A and 5B would involve the greatest construction time as they would involve excavation of all of the fill material from the O'Connor Disposal Area.

Implementability

Alternative 1 is the most readily implementable as there are no activities associated with this alternative. Alternative 2 would only involve the implementation of institutional controls and routine engineering controls, in addition to long-term groundwater monitoring and is also readily implementable.

Alternatives 3, 4A and 4B are expected to be the next easiest alternatives to implement as they involve the construction of engineered caps over contaminated fill materials, which will be left in place beneath the caps. While Alternative 3 provides for minimal grading of fill before placement of a soil cap, the existing steep slope in this area raises concerns regarding slope stability during construction and the minimization of erosion of the cap and fill after construction. Alternatives 4A and 4B will require additional work during construction to consolidate fill material from the fringe areas of the O'Connor Disposal Area to the center of this area prior to the installation of an engineered cap. However, these caps would have a more stable top and side slope than the cap that would be installed under Alternative 3. In addition,
If the area was reused as the site of a Borough recycling center, additional paving, grading and landscaping would add to the cap's stability.

Alternatives 5A and 5B, which involve excavation and off-site disposal of contaminated fill from the O'Connor Disposal Area, are also considered to be implementable. It is expected that conventional construction equipment would be utilized to remove fill from this area, given that the depth of fill does not exceed 20 feet. However, dewatering of groundwater and/or diversion of a portion of the Park Brook may be required to remove fill in portions of this area.

Cost

Alternative 1 would have no cost as no action would be required. Alternative 2 would be expected to have minimal costs, which are primarily due to the implementation of a long-term groundwater monitoring program.

The total estimated present worth costs for the remaining alternatives, from lowest to highest cost, are as follows: Alternative 4A ($5,350,000), Alternative 3 ($5,432,400), Alternative 4B ($6,435,100), Alternative 5B ($26,191,800), and Alternative 5A ($32,605,900). Alternatives 5A and 5B are significantly more costly than the other alternatives as they provide for the complete removal and off-site disposal of contaminated fill material from the O'Connor Disposal Area. Alternative 5A may achieve significant cost savings over Alternative 5B by providing for the reuse of mine tailings as fill for the Peters Mine Pit Area in lieu of off-site disposal.

State/Support Agency Acceptance

The State of New Jersey has no comment regarding the preferred remedy and will await to evaluate the community comments regarding this remedy.

Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the Responsiveness Summary of the OU2 Record of Decision for this Site. The Record of Decision is the document that formalizes the selection of the remedy for a site.

SUMMARY OF THE PREFERRED ALTERNATIVES

Peters Mine Pit Area

Alternative 6A, Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain, is the preferred alternative for the Peters Mine Pit Area of the Site. The topography in the Peters Mine Pit Area, coupled with the removal of the historic fill surrounding the pit as deep as the water table, would allow for the construction of a very thick permeable cap that would permit the establishment of trees and allow this area to return to a state similar to that of the surrounding areas of the Ringwood State Park. This alternative is recommended because it is expected to achieve substantial and long-term risk reduction through the permanent removal of shallow contaminated fill and containment of the remaining fill, with less short-term impacts and cost than other alternatives which provide for removal or treatment of waste, while still enabling Ringwood State Park visitors and area residents to utilize the property for recreational use.

Under this alternative zoning restrictions and institutional controls, such as Deed Notices, would be applied to this area to prevent uses other than for conservation land/recreational activities. In addition, the need for engineering controls, such as the installation of warning signs and the placement of boulders, to restrict access to this area by ATVs and other vehicles would be considered during the remedial design and implemented if necessary.

As part of this Alternative, soil and fill material from the fill area surrounding the Peters Mine Pit would be excavated down to native soil or the water table, whichever is encountered first. If drums of waste or paint sludge are encountered, the excavation would continue until these materials are removed, even if they are located below the water table. While this alternative assumes that all excavated soil and fill would be disposed of off-site at an appropriately permitted facility, the segregation and reuse of non-hazardous soil and fill as fill for the pit may be considered during design of this alternative. It is estimated that 22,700 tons of fill material will be disposed of off-site as part of this action. Clean imported fill would then be placed within the Peters Mine Pit to raise the elevation of the pit to at least two feet above the average surface water elevation in the pit. As noted above, if Alternative 5A is selected for the O'Connor Disposal Area, excavated mine tailings from this area could be used as fill in lieu of importing fill. The area surrounding the pit would be filled with clean soil. A geotextile fabric would be installed over the fill materials and the pit and surrounding area would be backfilled with clean fill and topsoil to provide an increase in elevation of a minimum of approximately three feet around the perimeter area, and greater elevation towards the center of the cap, which would result in positive drainage away from the pit. The need for a passive gas management system would be evaluated during design of this alternative.

Prior to placement of the soil cover, the pit would be dewatered and the fill material compacted. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. Water generated during the dewatering operations will be sampled, treated as necessary, and discharged to a dissipater pad at the Site.

Restoration of this area would also include vegetation with trees naturally present in Ringwood. The use of a permeable cap would permit the establishment of trees, including those with deep tap roots. Restoration of the Peters Mine Pit Area in this manner will allow this area to return to a state similar to that of surrounding areas of the Ringwood State Park and allow recreational use of this area.

Long-term monitoring and maintenance of the capped area would be required to ensure the integrity of the permeable cap. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the entire site including the Peters Mine Pit Area. In the interim, for costing purposes, quarterly groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented EPA anticipates that the sampling frequency or number of wells sampled will be revised based on review of the groundwater analytical data.

Cannon Mine Pit Area

Alternative 3A, Permeable Engineering Cap of the Cannon Mine Pit Area, is the preferred alternative for the Cannon Mine Pit Area of the Site. This alternative is recommended because it is expected to achieve a comparable level of long-term risk reduction with less impact on the community and less cost than other protective alternatives.

Under this alternative, institutional controls, such as a Deed Notice, will be implemented to help prevent potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access to this area. Inspections would be conducted on an annual basis to confirm that land use in the vicinity of the Cannon Mine Pit Area is consistent with the selected remedy and to ensure that zoning and deed restrictions are complied with.

As part of this Alternative, shallow fill materials, which are present to an approximate depth of five feet (estimated to be less than 1900 cubic yards) around the Cannon Mine Pit would be removed and placed within the pit. The fill material contained within the pit would then be compacted using construction equipment. Clean fill material would then be placed within the pit and compacted to fill the area as necessary to raise the grade to promote drainage off of the cap. A two-foot thick engineered soil cap, consisting of a minimum of eighteen inches of clean soil and six inches of topsoil, would then be constructed over the Cannon Mine Pit. Vegetation would then be established in order to stabilize the surface of the cap. Soil testing, such as geotechnical, agronomic, chemical and compaction testing would be conducted to verify that the base for the soil cap achieves design specifications prior to placing the cover. The need for a passive gas management system would be evaluated during design of this alternative.

Due to the discovery of drums of waste within the pit during performance of the RI, the possibility exists that additional drums of waste will be encountered during preparation of the pit for installation of the permeable cap. Any drums of waste encountered during implementation of the selected remedy would be excavated, characterized and disposed of off-site at an appropriately permitted disposal facility.

Long-term monitoring and maintenance of the capped area would be required to ensure the integrity of the permeable cap. In addition, long-term groundwater monitoring would also be implemented in order to ensure that the fill materials continue to have only a minimal impact on groundwater quality. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the Cannon Mine Pit Area. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or number of wells sampled may be revised based on review of the groundwater analytical data.

O'Connor Disposal Area

Alternative 5A, Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings, is the preferred alternative for the O'Connor Disposal Area of the Site. This alternative is recommended because it is expected to achieve substantial and long-term risk reduction through the permanent removal of contaminated fill from the Site. Unlike most of the other alternatives evaluated, this alternative would allow the portion of the Site that is most readily accessible to the residents to be used without restriction. Removal of the contaminated material would allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be present if a cap or cover were selected.

In the years since disposal of wastes on this portion of the Site ended, this area has become wooded. Until sampling activities were recently carried out in furtherance of the RI, this portion of the Site looked much like, and was used by the local community in the same manner as, the immediately adjacent State park. Members of the local community have long been accustomed to enter this area and use it for recreation and, among other purposes, for gathering plants that have cultural and traditional significance and nutritional value. All of the other alternatives (except Alternative 5B) would allow wastes to remain on this portion of the Site, but the engineering and institutional controls specified in these alternatives would thus eliminate the possibility of its use by the local community for these culturally and traditionally significant activities. Indeed, if this 12-acre area was to be capped it is likely that access to the area for residents would have to be prohibited to protect the cap from damage and protect the residents from possible contact with the wastes. However, it is highly likely that *unauthorized* access would take place, quite possibly including unauthorized use of motorized "all terrain vehicles" (ATVs, which are routinely used in the surrounding area). Possible use of ATVs across the capped area would likely harm the cap, requiring repeated maintenance efforts in perpetuity. Selection of the preferred alternative would: allow restoration of the area to approximately its natural condition; allow unrestricted use of the area by local residents to pursue culturally and traditionally significant activities; eliminate the need for and cost of perpetual maintenance of a cap; and eliminate the perpetual irritant to the local community that a capped and restricted access area would represent.

The preferred alternative provides for the excavation of all soil/fill material from the O'Connor Disposal Area down to the top of the underlying mine tailings and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities. It is estimated that approximately 110,500 cubic yards of soil/fill would be disposed of off-site as part of this remedy. In addition, the layer of undisturbed mine tailings located at the bottom of the O'Connor Disposal Area would then be available and could be removed and potentially reused onsite within the Peters Mine Pit Area.

It is estimated that approximately 73,100 cubic yards of mine tailings could be excavated from the O'Connor Disposal Area and used as fill in the Peters Mine Pit Area as part of this remedy. Undisturbed mine tailings at the base of the OCDA which are not used as fill for the Peters Mine Pit would remain in place. Due to the depth to groundwater in the O'Connor Disposal Area and the area's proximity to the Park Brook, dewatering of groundwater and/or diversion of a portion of the Park Brook may be required to remove fill in portions of this area.

Following the excavation and disposition of fill and tailings, six inches of topsoil would be placed throughout the excavated area to enable revegetation of the O'Connor Disposal Area. Restoration activities would focus on restoring the O'Connor Disposal Area to a pre-disposal condition. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the O'Connor Disposal Area. The restoration of these wetlands will be coordinated with NJDEP's Land Use Program In addition, long-term groundwater monitoring will be conducted as a component of this remedy. The selection

of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the O'Connor Disposal Area. In the interim, for costing purposes, it is assumed that annual groundwater monitoring of a subset of existing wells surrounding the O'Connor Disposal Area would be performed for a period of five years. However, as the program is implemented the sampling frequency or number of wells sampled could be revised based on review of the groundwater analytical data.

The Borough of Ringwood has recently notified EPA of its intention to seek necessary approvals to construct a new Borough recycling center in the O'Connor Disposal Area. The Borough has indicated that Alternative 4A, Site Grading and Permeable Engineered Cap, would be the alternative that is most compatible with this use. The Borough has also noted that the capping called for in Alternative 4A would create a level area near the center of the O'Connor Disposal Area, facilitating construction of the proposed recycling facility. The Borough has indicated that the new recycling facility would replace the existing recycling facility and that the existing recycling facility property would be converted to greenspace for use by the surrounding community.

If a portion of the O'Connor Disposal Area were to be reused as the Borough's recycling center, many of EPA's concerns that inform selection of Alternative 5A would be addressed with respect to that reused portion. Among the primary reasons for EPA's selection of Alternative 5A are concerns regarding the potential for unauthorized access to the area and associated damage to the cap which may result if a containment alternative was selected. However, under the Borough's recent proposal, the portion of the O'Connor Disposal Area that would be used for the recycling facility would be capped with asphalt which would mitigate concerns regarding damage to the cap. Furthermore, the routine presence of Borough employees at the recycling center would discourage unauthorized access to this property. The Borough has communicated its view that the existing recycling facility property would be a better greenspace asset than the steeply sloped property that would remain at the O'Connor Disposal Area if Alternative 5A were to be implemented.

Consideration of the future use of a site is an integral component of the remedy selection process. While it is not EPA's role to specify how a municipality or other property owner may reuse a remediated site, EPA endeavors to work with communities and property owners to ensure that implemented remedies do not create barriers for safe, viable reuse of site properties. If the property is reused as proposed by the Borough, EPA believes that with respect to the portion of the O'Connor Disposal Area on which the recycling facility would be located, Alternative 4A would best satisfy the nine evaluation criteria and EPA's objective to advance environmental protection while facilitating reuse of sites as valuable community assets. Therefore, EPA is proposing that Alternative 4A could be selected as a contingency remedy for that portion of the O'Connor Disposal Area to be used for the proposed recycling center, and that would become the remedy for this portion of the O'Connor Disposal Area if the Borough of Ringwood demonstrates to EPA within 6 months of the signing of the ROD that it will in fact proceed with construction of the recycling center without any significant delays in the schedule for remediating this area relative to Alternative 5A.

Under Alternative 4A, fill from the fringe areas of the O'Connor Disposal Area would be consolidated to the center of this area to minimize the size of the required cap and to permit the reuse of this area. After consolidation, the fill materials would be compacted and a two-foot thick soil cap would be installed over the fill materials. The soil cap would consist of a geotextile fabric, eighteen inches of clean soil and six inches of top soil. Vegetation would also be restored in this area. The excavated areas beyond the engineered cap where soil/fill would be moved for consolidation under the cap would be backfilled with 6 inches of certified clean fill and rough graded to ensure proper drainage prior to revegetation. The cleaned up fringe areas would encompass approximately 4 acres. Because there are wetlands that would be disturbed during implementation of this remedy, these wetlands would be restored within the O'Connor Disposal Area. The need for a passive gas management system would be evaluated during design of this remedy.

Institutional controls, such as a Deed Notice, would be implemented to help prevent potential exposure to contaminants in the fill material. In addition, engineering controls such as the installation of fencing and the placement of boulders, would be implemented to restrict access. Inspections would be conducted on an annual basis to ensure that the implemented engineering controls remain protective and to confirm that land use in the vicinity of the O'Connor Disposal Area is consistent with the selected remedy. In addition, long-term groundwater monitoring would be implemented as a component of this alternative to ensure that the fill materials continue to have only a minimal impact on groundwater quality. The selection of a groundwater remedy for the operable unit 3 ROD, which is anticipated within the next few years, will address long-term groundwater monitoring that is needed for the for the entire site including the O'Connor Disposal Area. In the interim, for costing purposes, annual groundwater monitoring for a period of five years is assumed as a component of this alternative. However, as the program is implemented the sampling frequency or

number of wells sampled may be revised based on review of the groundwater analytical data.

Based on information currently available, the EPA believes that the Preferred Alternatives for the Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Areas meet the threshold criteria and provide the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The EPA expects the Preferred Alternatives to satisfy the following statutory requirements of CERCLA §121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) satisfy the preference for treatment as a principal element or explain why the preference for treatment will not be met.

Implementation of OU2 remedial actions are expected to reduce the potential for direct exposure and ingestion of contaminants, as well as to reduce the potential for contaminants to migrate to groundwater and surface water by either removing waste material or containing waste material in a manner which will reduce the percolation of precipitation through the waste. Such actions should serve to shorten the timeframe necessary to achieve New Jersey Ground Water Quality Standards in groundwater at the Site.

Consistent with the EPA Region 2's Clean and Green policy, the EPA will evaluate the use of sustainable technologies and practices with respect to any remedial alternatives selected for the Site.

Because these remedies will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years after initiation of the remedial action to ensure that the remedies are, or will be protective of human health and the environment.

COMMUNITY PARTICIPATION

The EPA provided information regarding the cleanup of the Ringwood Mines/Landfill Superfund Site to the public through public meetings, the Administrative Record file for the Site and announcements published in the Bergen Record newspaper. The EPA encourages the public to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted there.

For further information on the EPA's preferred alternatives for the Ringwood Mines/Landfill Superfund Site:

Joe Gowers	Pat Seppi
Remedial Project Manager	Community Relations
(212) 637-4413	(212) 637-3679

U.S. EPA
290 Broadway, 19th Floor
New York, New York 10007-1866

The dates for the public comment period; the date, the location and time of the public meeting; and the locations of the Administrative Record files are provided on the front page of this Proposed Plan.

GLOSSARY

ARARs: Applicable or Relevant and Appropriate Requirements. These are Federal or State environmental rules and regulations that may pertain to the Site or a particular alternative.

BERA: Baseline Ecological Risk Assessment

Carcinogenic Risk: Cancer risks are expressed as a number reflecting the increased chance that a person will develop cancer if exposed to chemicals or substances. For example, the EPA's acceptable risk range for Superfund hazardous waste sites is 1×10^{-4} to 1×10^{-6}, meaning there is 1 additional chance in 10,000 (1×10^{-4}) to 1 additional chance in 1 million (1×10^{-6}) that a person will develop cancer if exposed to a Site contaminant that is not remediated.

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act. A Federal law, commonly referred to as the "Superfund" Program, passed in 1980 that provides for response actions at sites found to be contaminated with hazardous substances, pollutants or contaminants that endanger public health and safety or the environment.

COPC: Chemicals of Potential Concern.

SLERA: Screening Level Ecological Risk Assessment. An evaluation of the potential risk posed to the environment if remedial activities are not performed at the Site.

FS: Feasibility Study. Analysis of the practicability of multiple remedial action options for the Site.

Groundwater: Subsurface water that occurs in soils and geologic formations that are fully saturated.

HHRA: Human Health Risk Assessment. An evaluation of the risk posed to human health should remedial activities not be implemented.

HI: Hazard Index. A number indicative of noncarcinogenic health effects that is the ratio of the existing level of exposure to an acceptable level of exposure. A value equal to or less than one indicates that the human population is not likely to experience adverse effects.

HQ: Hazard Quotient. HQs are used to evaluate noncarcinogenic health effects and ecological risks. A value equal to or less than one indicates that the human or ecological population are not likely to experience adverse effects.

ICs: Institutional Controls. Administrative methods to prevent human exposure to contaminants, such as by restricting the use of groundwater for drinking water purposes.

Nine Evaluation Criteria: See text box on Page 15.

Noncarcinogenic Risk: Noncancer Hazards (or risk) are expressed as a quotient that compares the existing level of exposure to the acceptable level of exposure. There is a level of exposure (the reference dose) below which it is unlikely for even a sensitive population to experience adverse health effects. The USEPA's threshold level for noncarcinogenic risk at Superfund sites is 1, meaning that if the exposure exceeds the threshold; there may be a concern for potential noncancer effects.

NPL: National Priorities List. A list developed by the USEPA of uncontrolled hazardous substance release sites in the United States that are considered priorities for long-term remedial evaluation and response.

Operable Unit (OU): a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of a release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site.

Present-Worth Cost: Total cost, in current dollars, of the remedial action. The present-worth cost includes capital costs required to implement the remedial action, as well as the cost of long-term operations, maintenance, and monitoring.

Proposed Plan: A document that presents the preferred remedial alternatives and requests public input regarding the proposed cleanup alternatives.

Public Comment Period: The time allowed for the members of a potentially affected community to express views and concerns regarding the USEPA's preferred remedial alternative.

RAOs: Remedial Action Objectives. Objectives of remedial actions that are developed based on contaminated media, contaminants of concern, potential receptors and exposure scenarios, human health and ecological risk assessment, and attainment of regulatory cleanup levels.

Record of Decision (ROD): A legal document that describes the cleanup action or remedy selected for a site, the basis for choosing that remedy, and public comments on the selected remedy.

Remedial Action: A cleanup to address hazardous substances at a site.

RI: Remedial Investigation. A study of a facility that supports the selection of a remedy where hazardous substances have been disposed or released. The RI identifies the nature and extent of contamination at the facility and analyzes risk associated with COPCs.

TBCs: "To-be-considereds," consists of non-promulgated advisories and/or guidance that were developed by the EPA, other federal agencies, or states that may be useful in developing CERCLA remedies.

USEPA: United States Environmental Protection Agency. The Federal agency responsible for administration and enforcement of CERCLA (and other environmental statutes and regulations), and final approval authority for the selected ROD.

VOC: Volatile Organic Compound. Type of chemical that readily vaporizes, often producing a distinguishable odor.

Water Table: The water table is an imaginary line marking the top of the water-saturated area within a rock column.

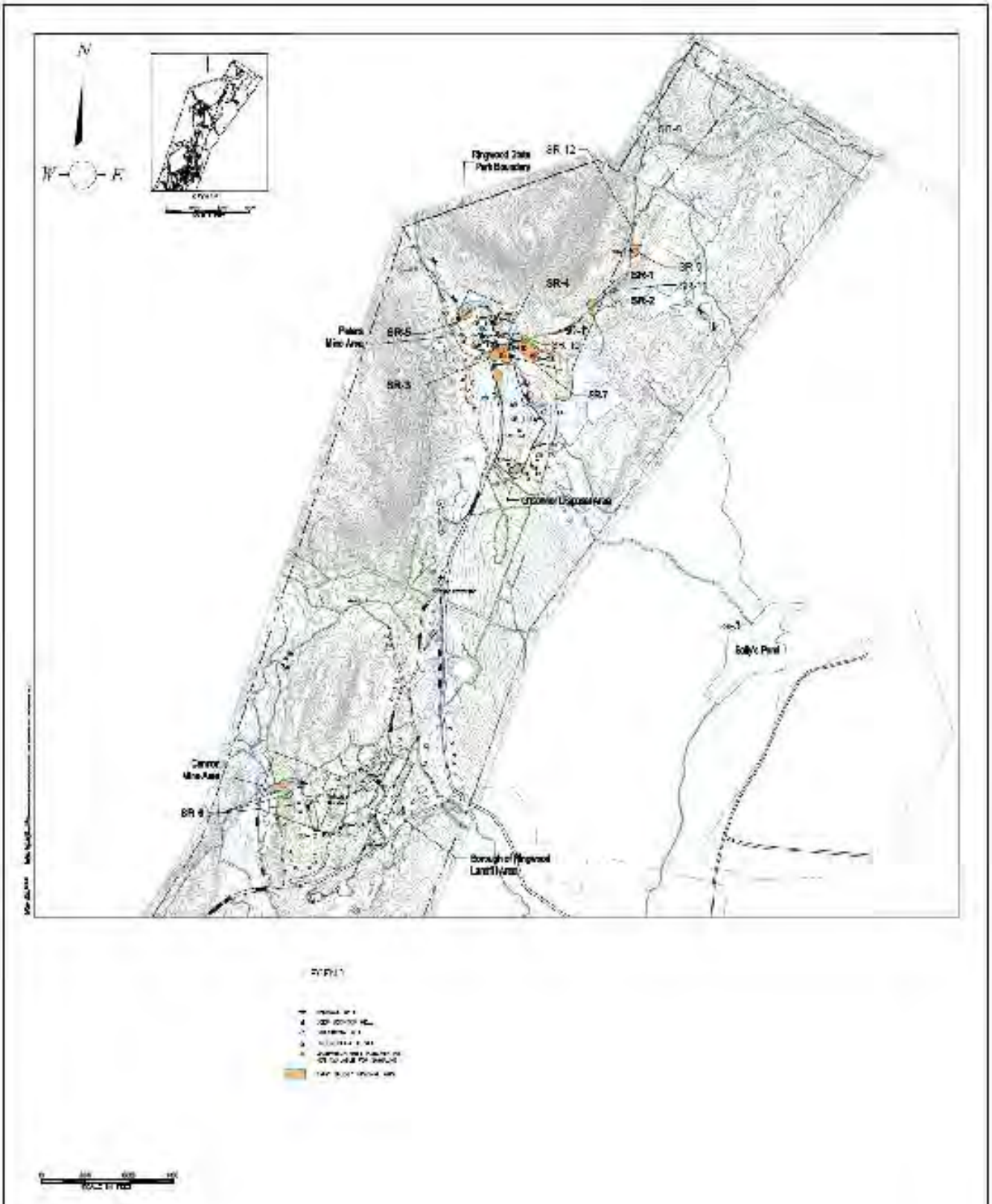


Figure 1 – Location of the Ringwood Mines/Landfill Site Areas of Concern

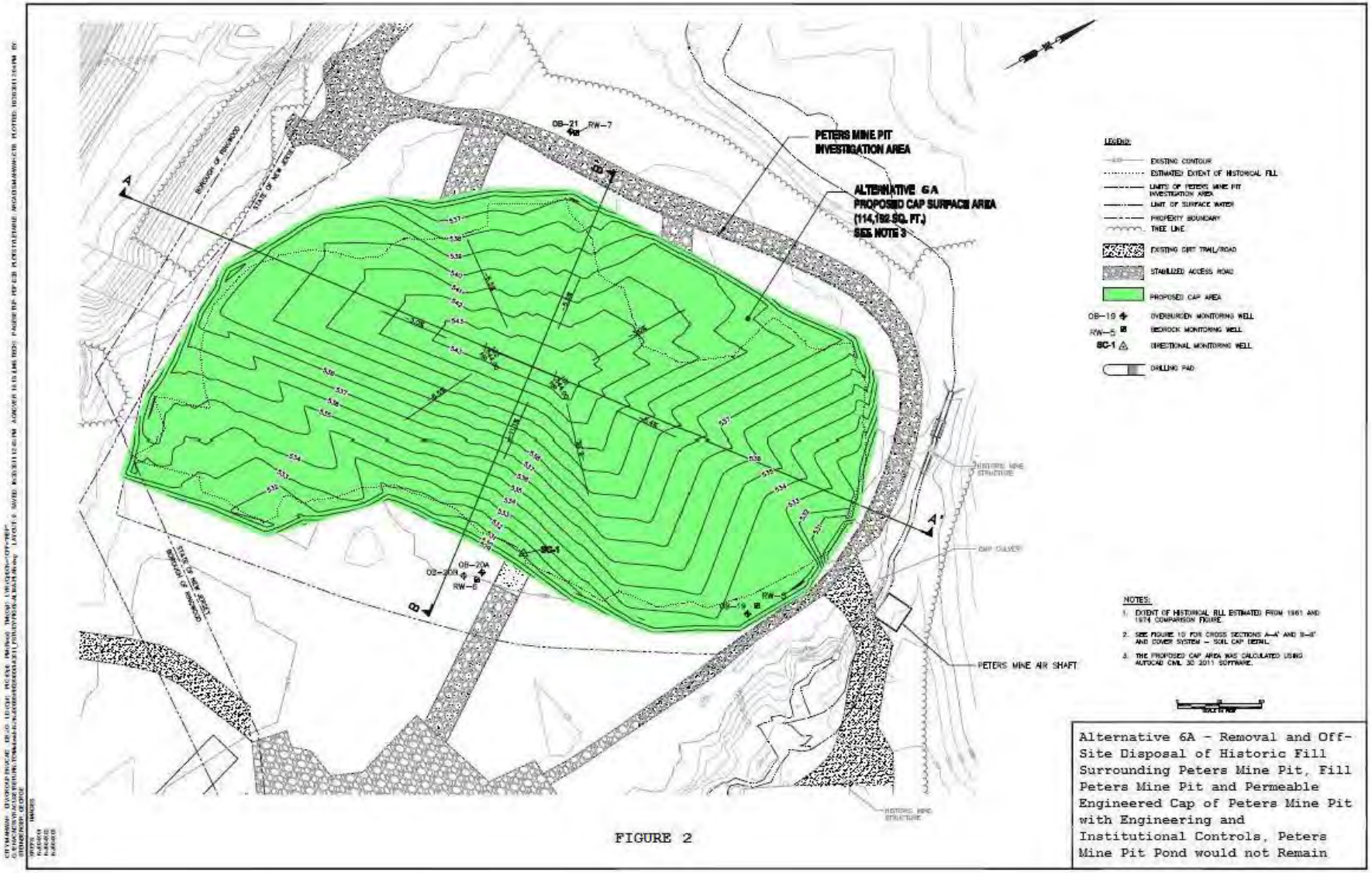
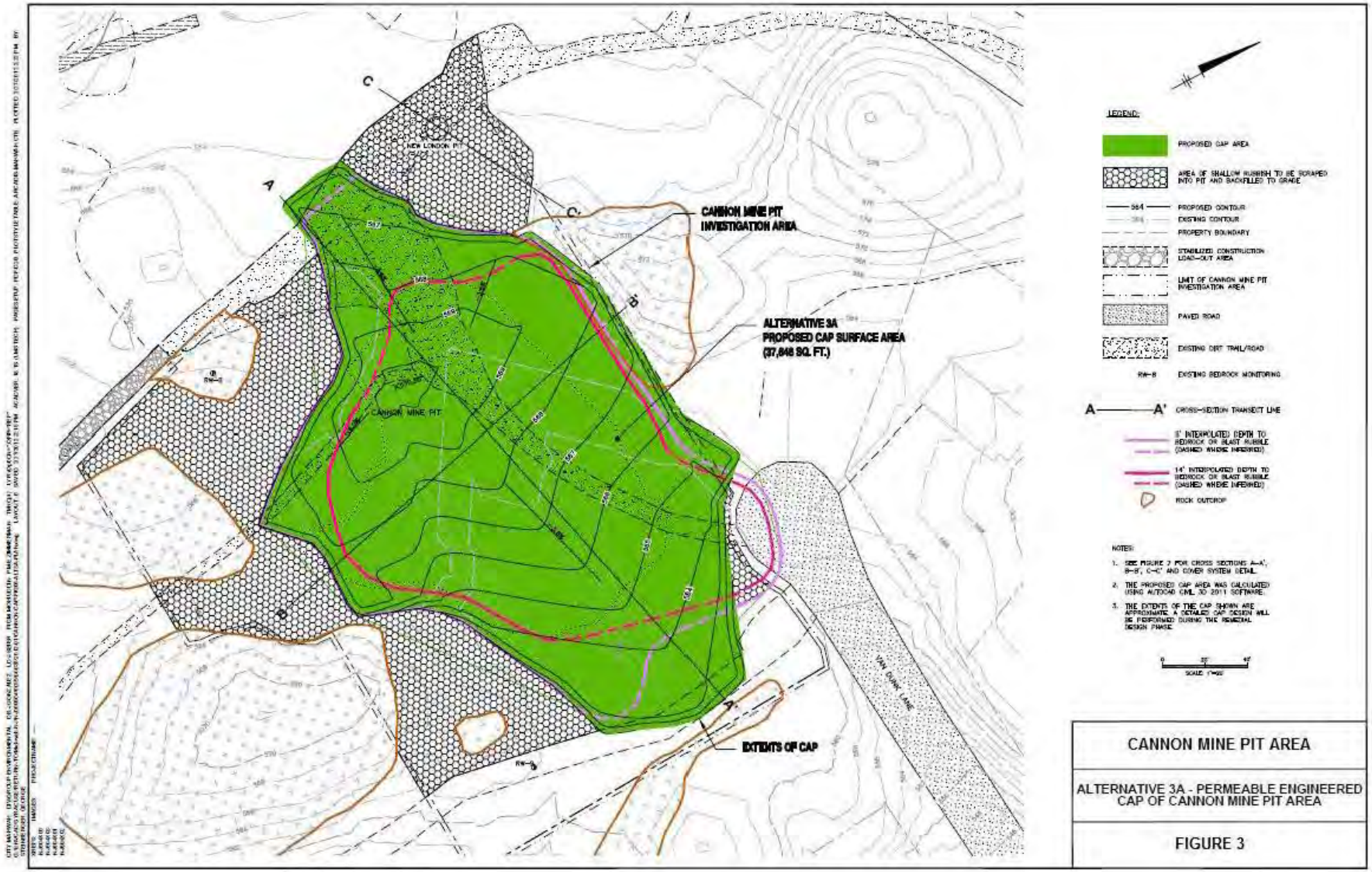


FIGURE 2

Alternative 6A - Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls, Peters Mine Pit Pond would not Remain

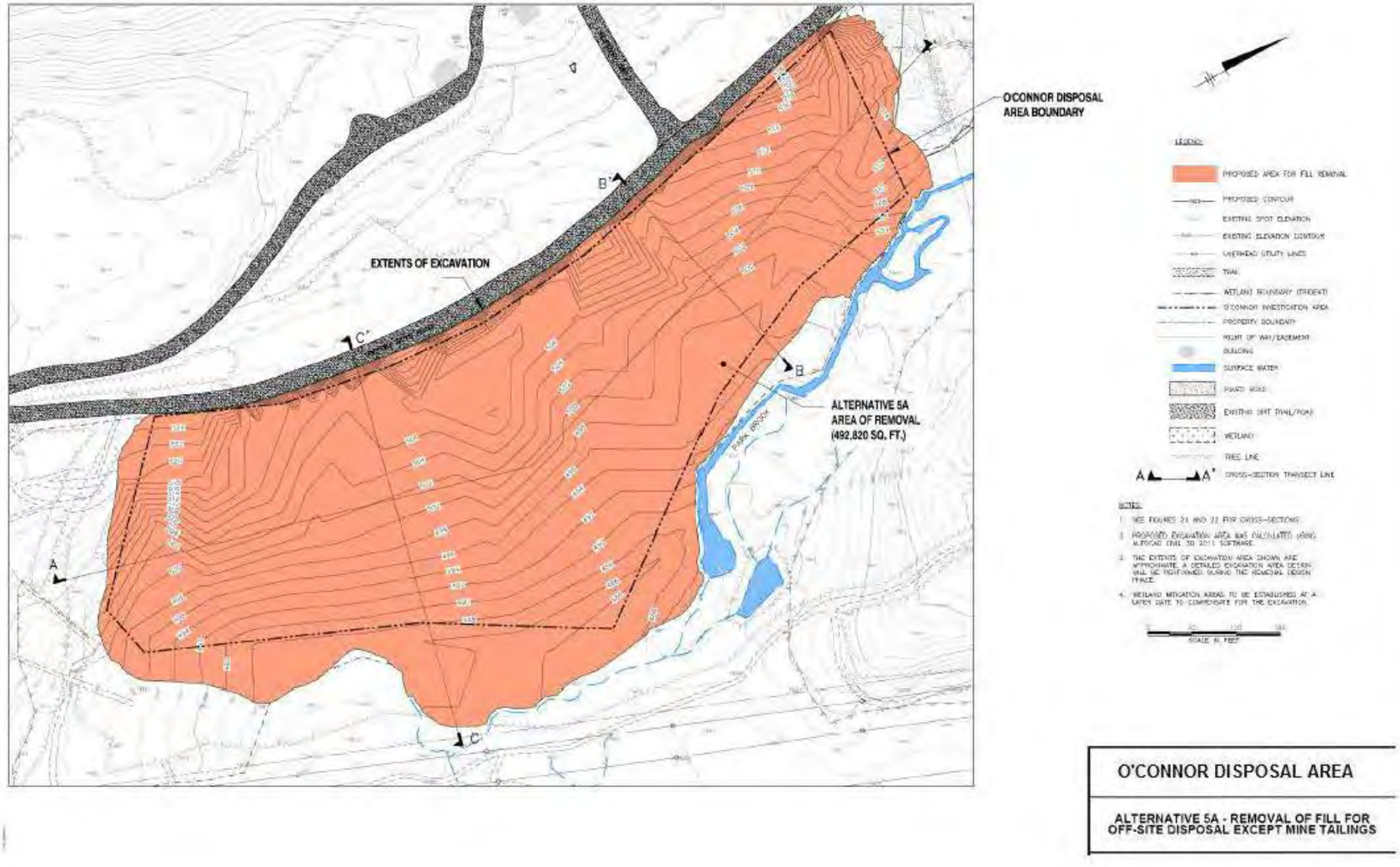


CANNON MINE PIT AREA

ALTERNATIVE 3A - PERMEABLE ENGINEERED CAP OF CANNON MINE PIT AREA

FIGURE 3

R2-0008098



O'CONNOR DISPOSAL AREA

ALTERNATIVE 5A - REMOVAL OF FILL FOR OFF-SITE DISPOSAL EXCEPT MINE TAILINGS

FIGURE 4

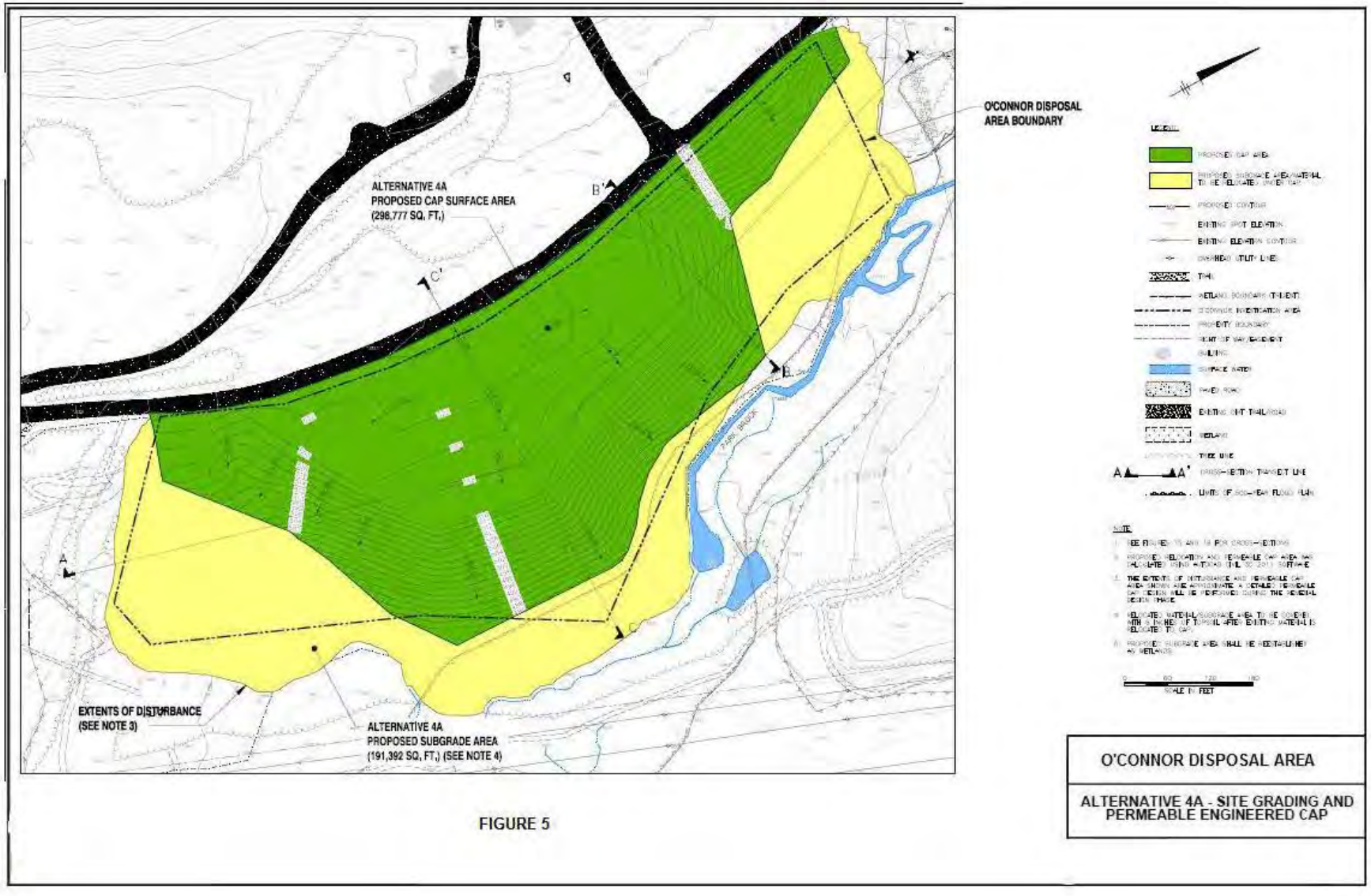


FIGURE 5

ATTACHMENT B – Public Notice

Is Mr. Right wrong to hang out with exes?

DEAR ABBY: I have been dating Mr. Right for two years. "Phil" is the man I want to spend my life with. When we are together privately, everything is perfect.

The problem is, Phil hangs out with his old college buddies every few weeks or months, and it often involves his ex-girlfriends. They don't hang out alone. There is always at least one other person there. The situations usually include drinking, which worries me.

DEAR ABBY

In my opinion, Phil should not be seeing his exes, even though his college friends are still buddies with them. Phil doesn't understand why I think this is so wrong. I am uncomfortable and think he should avoid these situations.

Am I overly jealous, or should I call it quits because he won't respect my feelings on the matter?

— Home Alone in Kokomo

DEAR HOME ALONE: I don't think you are overly jealous, but I do think you may be overly insecure. Has Phil given you any reason to think he has cheated on you? If not, you should trust that he is doing nothing more than hanging out occasionally with old friends.

You say he is encountering exes (plural) when he sees his male friends. If it was just one, you might have cause to worry. But remember, these women are exes for a reason. Unless you want to be another ex, you should lighten up. Insecurity and possessiveness are unattractive traits.

DEAR ABBY: We have lived next door to "Evie" and "Earl" for five years. I thought we were good friends with this couple.

Over the years, I vented to Evie about my relationship with my daughter-in-law, "Cate." I watch my two grandkids most of the week and have complained to her about Cate's poor parenting skills.

Last summer, my daughter-in-law made a concerted effort to befriend Evie, and they now socialize together – even though Cate flirted with Earl and Evie didn't like it. This has pretty much killed my friendship with Evie and made my relationship with my daughter-in-law worse.

This has affected me emotionally and physically to the point that I either want to cut off ties with my son or move – neither of which is really an option. I have tried talking to both parties, to no avail. I don't know what to do. Please help.

— Betrayed in Pennsylvania

DEAR BETRAYED: If you had concerns about your daughter-in-law's parenting skills, the person you should have discussed them with was Cate. And if Evie was as good a friend as you thought, she wouldn't be hanging around with your daughter-in-law to the exclusion of you.

I assume that you, your son and Cate are still on speaking terms and you're still watching the kids "most of the week." If that's not true and you have been cut off by everyone, then the most important thing you need to do is take care of your mental and physical health. Accept that Evie will never be your buddy again and start socializing with others.

If you are no longer watching your grandchildren, your son and daughter-in-law will have to make alternative arrangements for childcare, which will cost them money they may be reluctant to spend. Then it will be in their interest as well as yours to make peace.

Write Dear Abby at dearabby.com or PO Box 69440, Los Angeles, CA 90069.

EPA INVITES PUBLIC COMMENT ON A PROPOSED CLEANUP PLAN FOR THE RINGWOOD MINES/LANDFILL SUPERFUND SITE IN RINGWOOD, NEW JERSEY

The U.S. Environmental Protection Agency has issued a Proposed Plan for addressing waste contained in three areas of the Ringwood Mines/Landfill site. A 60-day public comment period on the Proposed Plan, which identifies the EPA's preferred cleanup plan and other cleanup options that were considered by the EPA, begins on October 2 and ends on December 2, 2013.

The EPA's preferred cleanup plan consists of: 1) complete excavation of waste in the O'Connor Disposal Area with disposal of the waste at a facility outside of the area. Excavated areas would be backfilled with topsoil. The preferred cleanup plan also includes a second option, which would allow capping of the waste within that portion of the O'Connor Disposal Area that may be used by the Borough of Ringwood for the Borough's proposed recycling center; 2) capping of all waste in the Cannon Mine Pit; and 3) excavation, removal and disposal outside of the area of about 22,000 tons of fill material, soil and debris from the Peter's Mine Pit. Following excavation a cap would be placed over the pit and the surrounding ground would be restored for use as part of the Ringwood State Park.

The EPA will hold a public meeting on Thursday, Nov. 7, 2013 at the Ryerson Middle School, 130 Valley Rd., Ringwood, NJ at 7 pm to receive comments on the preferred cleanup plan and other options that were considered.

The Proposed Plan is available at http://www.epa.gov/region2/superfund/npl/ringwood or by calling Pat Seppi, EPA's Community Involvement Coordinator, at (212) 637-3679 and requesting a copy by mail.

Written comments on the Proposed Plan, postmarked no later than December 2, 2013, may be mailed to Joe Gowers, EPA Project Manager, U.S. EPA, 290 Broadway, 19th floor, New York, NY 10007-1866 or emailed no later than December 2, 2013 to gowers.joe@epa.gov.

The Administrative Record file containing the documents used or relied on in developing the alternatives and preferred cleanup plan is available for public review at the following information repositories:

Ringwood Public Library: 30 Cannici Drive, Ringwood, NJ, 07456 (973) 962-6256

U.S. EPA Region 2, Superfund Records Center: 290 Broadway, 18th floor, New York, NY 10007 (212) 637-4308

Bikers

Continued from B1

Cruz, who was not injured, was arrested Tuesday at 1 a.m. in Manhattan and charged with reckless endangerment, reckless driving, menacing and endangering the welfare of a child, said Lt. Karen Anderson, a New York City police spokeswoman. He was being held Tuesday pending a court hearing, police said.

Another biker turned himself in to police later on Tuesday, according to The Associated Press. However, police declined to say whether a second arrest had been made. Cruz, they said, was the only one who had been charged.

Cruz gave his address as an apartment building on Eighth Street in Passaic. Neighbors who live in that building say he visited his mother there but lived in another part of the city. The mother moved out about a month ago, one neighbor said. Another family now lives in the apartment.

New York Police Commissioner Ray Kelly said that the rally, a loosely organized ride known as "Hollywood Stuntz," caught police by surprise last year when 1,000 bikers made their way to Times Square and disrupted traffic. He said police were prepared for the rally on Sunday and did a "fair amount of enforcement," confiscating 55 motorcycles and making 15 arrests that were not related to the incident involving the SUV.

Police said the incident on the West Side Highway began at 1:30 p.m. A biker, whom police identified as Cruz, can be seen on the video passing the Range Rover and staring at its driver. The biker pulls in front of the SUV and looks back as he appears to slow down. After the accident, police said, dozens of bikers surrounded the SUV and several dismounted, police said.

The Range Rover is then seen bouncing over several motorcycles as bikers scramble to get out of the way. The bikers briefly caught the SUV on a ramp leading to the George Washington Bridge and the Cross Bronx Expressway, when one of them attempted to open the driver's door. The Range Rover drove off again but was caught in traffic moments later.

This article includes material from The Associated Press.

Victim

Continued from B1

cious people in the neighborhood, known as Lower Dundee.

One man, who asked not to be identified, said police described the victim as "a white woman with short blond hair." This man said he believed he knew the woman, who he thought came from Rutherford and would hang out in the neighborhood.

"She was a real nice person, very intelligent," the man said. He thought she had either worked as a teacher or had gone to college to be a teacher.

"She knew a lot about everything," the man said. "She could talk intelligently about just about any subject."

A Passaic police detective on Tuesday was checking a store surveillance video inside a pizzeria on Eighth Street, a two-block walk from the spot where the body was found. An employee of the pizzeria later told a reporter that the woman possibly was from Garfield.

Residents and merchants on Eighth Street described a frantic scene that unfolded just before dusk on Monday evening, as cops swarmed the area. A police source said a woman had called police saying she had seen a body.

A police boat was seen scouring the river banks in search of something, neighbors said.

Police converged in the rear of the ShopRite parking lot and cordoned off an area with yellow tape. A portion of that tape was draped across a log next to a wooded area, with several sets of rubber gloves piled atop it.

Although there is a fence there, the Passaic River bank is still easily accessible by way of a path that runs from South Street. A woman who lives on South Street said she regularly saw a woman with blond hair slip into the woods and go down to the river, often accompanied by men.

"I would see her go down there almost every day," said the woman, who declined to give her name. "The strange thing is, I saw her go down there on Monday evening. But I didn't see her come out."

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The EPA's preferred cleanup plan consists of: 1) complete excavation of waste in the O'Connor Disposal Area with disposal of the waste at a facility outside of the area. Excavated areas would be backfilled with topsoil. The preferred cleanup plan also includes a second option, which would allow capping of the waste within that portion of the O'Connor Disposal Area that may be used by the Borough of Ringwood for the Borough's proposed recycling center; 2) capping of all waste in the Cannon Mine Pit; and 3) excavation, removal and disposal outside of the area of about 22,000 tons of fill material, soil and debris from the Peter's Mine Pit. Following excavation a cap would be placed over the pit and the surrounding ground would be restored for use as part of the Ringwood State Park.

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Public Notices

SHERIFF'S NOTICE
SUPERIOR COURT OF NEW JERSEY
CHANCERY DIVISION
BERGEN COUNTY
DOCKET NO. F-5148-09

Between Plaintiff: Aurora Loan Services, LLC and Defendant: Mariela Aquirre. Et Al. Civil Action - Writ of Execution Date: 3/13/2013

Zucker Goldberg & Ackerman
PO Box 1024
200 Sheffield Street
Suite 301
Mountainside NJ 07092
1-908-233-8500
XCZ-115855

By virtue of the above stated writ to me directed and delivered, I have levied upon and will expose for sale at public venue at the Sheriff's Office in the City of Hackensack, on
Friday, November 1, 2013
at two o'clock in the afternoon, prevailing time:

The property to be sold is located in the Borough of Dumont in the County of Bergen, State of New Jersey.
Commonly known as: 129 Thompson Street, Dumont, NJ 07628.
Tax Lot No.: 21 in Block 915
Dimensions of Lot: (Approximately) 54 x 100.
Nearest Cross Street: New York Avenue.
Subject to any open taxes, water/sewer, municipal or tax liens that may be due.
Subject to Tax and prior lien info: At the time of publication taxes/sewer/water information was not available - You must check with the tax collector for exact amounts due.
Prior Mortgages and Judgments (if any): None.
The Fair Housing Act prohibits "any preference, limitation, or discrimination because of race, color, religion, sex, handicap familial status, national origin, or intention to make such preference, limitation or discrimination" in connection with any aspect of a residential real estate transaction. Zucker, Goldberg, and Ackerman, LLC encourages and supports the equal housing practices of Fair Housing Act in the conduct of its business."
Note: The sheriff reserves the right to adjourn this sale for any length of time without further advertisement.

Together with all and singular the rights, liberties, privileges, hereditaments and appurtenances thereunto belonging or in anywise appertaining and the reversion and remainders, rents, issues and profits thereof, and also all the estate, right, title, interest, use, property, claim and demand of the said defendants of, in, to and out of the same, be sold to pay and satisfy in the first place unto the said plaintiff the sum of $387,086.37, interest thereon;

20% of the purchase price in the form of certified Check or Cash is required at time of sale. The property shall be sold subject to all liens and encumbrances of record and the Sheriff makes no representations expressed or implied, as to the existence, amount, or validity of any liens and encumbrances on the property which is the subject matter of this sale. The known liens and encumbrances provided to the Sheriff at this time are as follows: (set forth list for liens) OR N/A. This notice is further subject to Conditions of Sale as set forth by the Sheriff of Bergen County and is subject to the terms and conditions of the Foreclosure Fairness Act.

Surplus Money: If after the sale and satisfaction of the mortgage debt, including costs and expenses, there remains any surplus money, the money will be deposited into the Superior Court Trust Fund and any person claiming the surplus, or any part thereof, may file a motion pursuant to Court Rules 4:64-3 and 4:57-2 stating the nature and extent of that person's claim and asking for an order directing payment of the surplus money. The Sheriff or other person conducting the sale will have information regarding the surplus, if any.

MICHAEL SAUDINO
SHERIFF
13004596

The Record- Herald News

Herald News - 3568559
Fee:$187.44
October 2, 9, 16, 23, 2013

SHERIFF'S NOTICE
SUPERIOR COURT OF NEW JERSEY
CHANCERY DIVISION
BERGEN COUNTY
DOCKET NO. F-56711-09

Between Plaintiff: Wells Fargo Bank N.A. and Defendant:Kang Song. Et Als. Civil Action - Writ of Execution Date: 7/10/2012

Zucker Goldberg & Ackerman
PO Box 1024
200 Sheffield Street
Suite 301
Mountainside NJ 07092
1-908-233-8500
XWZ-396377

By virtue of the above stated writ to me directed and delivered, I have levied upon and will expose for sale at public venue at the Sheriff's Office in the City of Hackensack, on
Friday, October 4, 2013
at two o'clock in the afternoon, prevailing time:

PROPERTY ADDRESS: 234 5th Street, Unit 234
LOT: 1 Qualifier: C0234 BLOCK: 315
MUNICIPAlity: Borough of Fairview COUNTY: BERGEN
NEAREST CROSS STREET: Walker Street
All that certain Condominium unit known and designated as Unit 234 5th Street in Grace GARDENS CONDOMINUM said unit being more specifically defined in the Master Deed herein mentioned and which unit is herewith conveyed in conformity N.J.S.A. 46:8B-1 et seq together with an undivided 25 percent interest in the Common Elements appurtenant thereto, said Master Deed being dated February 20, 2004 and recorded February 20, 2004 in the County as Instrument No. 29099 in Deed Book 8659, Page 576) and as the same may be lawfully amended.
For Information Only: The premises to be insured is known as lot 1 Qualifier C0234, in block 315 on the tax maps of the Borough of Fairview, Bergen County, New Jersey.
The Sheriff hereby reserves the right to adjourn the right to adjourn this sale without further notice by publication

Together with all and singular the rights, liberties, privileges, hereditaments and appurtenances thereunto belonging or in anywise appertaining and the reversion and remainders, rents, issues and profits thereof, and also all the estate, right, title, interest, use, property, claim and demand of the said defendants of, in, to and out of the same, be sold to pay and satisfy in the first place unto the said plaintiff the sum of $214,054.00, interest thereon;

20% of the purchase price in the form of certified Check or Cash is required at time of sale. The property shall be sold subject to all liens and encumbrances of record and the Sheriff makes no representations expressed or implied, as to the existence, amount, or validity of any liens and encumbrances on the property which is the subject matter of this sale. The known liens and encumbrances provided to the Sheriff at this time are as follows: (set forth list for liens) OR N/A. This notice is further subject to Conditions of Sale as set forth by the Sheriff of Bergen County and is subject to the terms and conditions of the Foreclosure Fairness Act.

Surplus Money: If after the sale and satisfaction of the mortgage debt, including costs and expenses, there remains any surplus money, the money will be deposited into the Superior Court Trust Fund and any person claiming the surplus, or any part thereof, may file a motion pursuant to Court Rules 4:64-3 and 4:57-2 stating the nature and extent of that person's claim and asking for an order directing payment of the surplus money. The Sheriff or other person conducting the sale will have information regarding the surplus, if any.

MICHAEL SAUDINO
SHERIFF
13003765

The Record- Herald News

Herald News - 3557021
Fee:$180.08
Sepember 11, 18, 25, October 2, 2013

Public Notices

SHERIFF'S NOTICE
SUPERIOR COURT OF NEW JERSEY
CHANCERY DIVISION
BERGEN COUNTY
DOCKET NO. F-013650-12

Between Plaintiff: Valley National Bank and Defendant: Rose Van Tol; Et Al. Civil Action - Writ of Execution Date: 5/20/2013

Pluese Becker & Saltzman LLC
2000 Horizon Way
Suite 900
Mt Laurel, NJ 08054

By virtue of the above stated writ to me directed and delivered, I have levied upon and will expose for sale at public venue at the Sheriff's Office in the City of Hackensack, on
Friday, November 1, 2013
at two o'clock in the afternoon, prevailing time:

Municipality: Borough of Bogota
Street Address: 135 Elm Avenue, Bogota, NJ 07603
Tax Lot: 2 Tax Block: 109
Approximate dimensions: 105' x 41.70'
Nearest cross street: Munn Avenue
If after the sale and satisfaction of the mortgage debt, including costs and expenses, there remains any surplus money, the money will be deposited into the Superior Court Trust Fund and any person claiming the surplus, or any part thereof, may file a motion pursuant to Court Rules 4:64-3 and 4:57-2 stating the nature and extent of that person's claim and asking for an order directing payment of the surplus money. The Sheriff or other person conducting the sale will have information regarding the surplus , if any.
"The Sheriff Hereby Reserves The Right To Adjourn This Sale Without Further Notice Through Publication."

Together with all and singular the rights, liberties, privileges, hereditaments and appurtenances thereunto belonging or in anywise appertaining and the reversion and remainders, rents, issues and profits thereof, and also all the estate, right, title, interest, use, property, claim and demand of the said defendants of, in, to and out of the same, be sold to pay and satisfy in the first place unto the said plaintiff the sum of $106,970.45, interest thereon;

20% of the purchase price in the form of certified Check or Cash is required at time of sale. The property shall be sold subject to all liens and encumbrances of record and the Sheriff makes no representations expressed or implied, as to the existence, amount, or validity of any liens and encumbrances on the property which is the subject matter of this sale. The known liens and encumbrances provided to the Sheriff at this time are as follows: (set forth list for liens) OR N/A. This notice is further subject to Conditions of Sale as set forth by the Sheriff of Bergen County and is subject to the terms and conditions of the Foreclosure Fairness Act.

Surplus Money: If after the sale and satisfaction of the mortgage debt, including costs and expenses, there remains any surplus money, the money will be deposited into the Superior Court Trust Fund and any person claiming the surplus, or any part thereof, may file a motion pursuant to Court Rules 4:64-3 and 4:57-2 stating the nature and extent of that person's claim and asking for an order directing payment of the surplus money. The Sheriff or other person conducting the sale will have information regarding the surplus, if any.

MICHAEL SAUDINO
SHERIFF
13004499

The Record- Herald News

Herald News - 3568544
Fee:$161.72
October 2, 9, 16, 23, 2013

SHERIFF'S NOTICE
SUPERIOR COURT OF NEW JERSEY
CHANCERY DIVISION
BERGEN COUNTY
DOCKET NO. F-025988-12

Between Plaintiff: U.S. Bank National Association, As Trustee, On Behalf Of The Holders Of The CSMC Mortgage-Backed Pass-Through Certificates, Series 2007-3 and Defendant: Danilo Magat. Et Al. Civil Action - Writ of Execution Date: 7/3/2013

Zucker Goldberg & Ackerman
PO Box 1024
200 Sheffield Street
Suite 301
Mountainside NJ 07092
1-908-233-8500
FCZ-127453-R1

By virtue of the above stated writ to me directed and delivered, I have levied upon and will expose for sale at public venue at the Sheriff's Office in the City of Hackensack, on
Friday, November 1, 2013
at two o'clock in the afternoon, prevailing time:

The property to be sold is located in the Borough of Dumont in the County of Bergen, State of New Jersey.
Commonly known as: 110 Stratford Road, Dumont, NJ 07628.
Tax Lot No.: 5 in Block 207
Dimensions of Lot: (Approximately) 50 x 100.
Nearest Cross Street: Massachusetts Avenue.
Subject to any open taxes, water/sewer, municipal or tax liens that may be due.
Subject to Tax and prior lien info: At the time of publication taxes/sewer/water information was not available - You must check with the tax collector for exact amounts due.
Subject to Prior Mortgages and Judgments (if any): None.
The Fair Housing Act prohibits "any preference, limitation, or discrimination because of race, color, religion, sex, handicap familial status, national origin, or intention to make such preference, limitation or discrimination" in connection with any aspect of a residential real estate transaction. Zucker, Goldberg, and Ackerman, LLC encourages and supports the equal housing practices of Fair Housing Act in the conduct of its business."
Note: The sheriff reserves the right to adjourn this sale for any length of time without further advertisement.

Together with all and singular the rights, liberties, privileges, hereditaments and appurtenances thereunto belonging or in anywise appertaining and the reversion and remainders, rents, issues and profits thereof, and also all the estate, right, title, interest, use, property, claim and demand of the said defendants of, in, to and out of the same, be sold to pay and satisfy in the first place unto the said plaintiff the sum of $350,719.50, interest thereon;

20% of the purchase price in the form of certified Check or Cash is required at time of sale. The property shall be sold subject to all liens and encumbrances of record and the Sheriff makes no representations expressed or implied, as to the existence, amount, or validity of any liens and encumbrances on the property which is the subject matter of this sale. The known liens and encumbrances provided to the Sheriff at this time are as follows: (set forth list for liens) OR N/A. This notice is further subject to Conditions of Sale as set forth by the Sheriff of Bergen County and is subject to the terms and conditions of the Foreclosure Fairness Act.

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MICHAEL SAUDINO
SHERIFF
13004595

The Record- Herald News

Herald News - 3568562
Fee:$192.96
October 2, 9, 16, 23, 2013

R2-0008103

ATTACHMENT C – Public Meeting Transcript

- - - - - - - - - - - - - - - - -x

PUBLIC MEETING ON PROPOSED
REMEDIAL PLAN FOR:

RINGWOOD MINES SUPERFUND SITE

- - - - - - - - - - - - - - - - -x

November 7, 2013, 7:13 p.m.

Martin J. Ryerson Middle School
130 Valley Road
Ringwood, New Jersey

Reported by:

Douglas Winter

A P P E A R A N C E S:

FOR THE U.S. EPA:

PATRICIA SEPPI, Community Involvement Coordinator

WALTER MUGDAN, Superfund Division Director, Region 2

JOSEPH GOWERS, Remedial Project Manager

MICHAEL SIVAK, Human Health Risk Assessor/ Toxicologist

DOUG GARBARINI, Branch Chief, Superfund Program

SAL BADALAMENTI, Project Manager

DAVID KLUESNER, Public Affairs Specialist

(Ringwood Superfund/Public Meeting - 11/7/13)

MS. SEPPI: I'd like to thank everybody for coming tonight. The reason we're here is to talk about EPA's proposed plan to clean up the Ringwood Superfund site.

Before I get started with my little spiel, Bob Spiegel is here. We have a community advisory group at the Ringwood site. I'm sure you are aware of that, a lot of you.

Bob has some comments on EPA's proposed plan. It was put together by the Community Advisory Group, so if anybody would want one -- sorry -- by the environmental engineers who work for the community advisory group. So if anybody would like one, raise your hand, and Bob can come around and pass one out to you.

MR. SPIEGEL: Just raise your hand if you want one.

MS. SEPPI: Everybody's hands will be tired by the time Bob gets there.

We'll have Father Stevens come up

(Ringwood Superfund/Public Meeting - 11/7/13)

and say a prayer.

FATHER STEVENS: Let us pray. Gracious God, source of life, our lives, this world, energy and all its created order, please bless this meeting with your spirit, your holy spirit that we may honor you and we may honor each other in all our deliberations, and we pray in God's hands, Amen.

(All say Amen)

MS. SEPPI: Thank you. So my name is Pat Seppi. I'm with EPA. I'm the Community Involvement Coordinator for the site.

We have other EPA representatives here tonight, and I'd like to ask them to introduce themselves and tell you what they do for the Ringwood site.

MR. GARBARINI: Good evening. My name is Doug Garbarini. I'm the Branch Chief for the Superfund Program that handles the site.

MR. BADALAMENTI: I'm Sal Badalamenti. I'm the Section Chief for

the site.

MR. SIVAK: I'm Michael Sivak. I'm the Human Health Risk Assessor/ Toxicologist for the site.

MR. MUGDAN: I'm Walter Mugdan. I'm the Superfund Division Director for Region 2 of the Environmental Protection Agency, which includes New York and New Jersey, among other jurisdictions.

MR. GOWERS: I'm Joe Gowers. I'm the EPA Project Manager for the Ringwood Mines/Landfill Superfund site.

MS. SEPPI: Thank you, Joe.

Just a couple of housekeeping duties. We do have a sign-in sheet out front. I think you saw it. If you aren't already on our mailing list, and would like to receive information in the future, please go ahead and sign in either by e-mail or regular mail, and I will make sure to add you to our list.

If you are already on our mailing list, you don't have to sign in again.

Also, there were some fact sheets

out there. Those were fact sheets -- Joe and I distributed to all the residents, along with the proposed plan. But I thought it was a good bit of information in case you have additional comments.

We have the proposed plan, which we hope you have all taken a look at, was released on September 30th. Then what we did was we incorporated a 60-day public comment period that began on October 2nd and will end on close of business December 2nd.

So, of course all your comments tonight will be recorded. We have a court reporter here, and so those comments will go into the record.

But should you get home and decide there's something else you would like to include, the information on that fact sheet will give you the e-mail address or the mailing address so you could send your comments to Joe. Or anybody else you know who has a comment, you have

until close of business December 2nd.

It's important for us to get your input tonight. I'm really glad to see such a big turnout. We rely very heavily on community concerns before we come up with our final decision. So don't forget to sign in. Don't forget to take a fact sheet.

Now, our presentation tonight will cover all three areas: O'Connor Disposal Area, Cannon Mine Pit and Peters Mine Pit.

Now, Joe has a Power Point presentation. This is the part I always hate because I like to ask people, if possible, if they can hold their questions until the end of the presentation. What happens is once we get off Power Point, a lot of times we kind of digress and, you know, we lose our focus. A lot of times your questions will be answered.

But if you do have a question that you think is important, that you need an

answer to, you know, go ahead and raise your hand, and we will certainly work with you to answer that.

Just one more observation. We want to give everyone who is here tonight an opportunity to speak. I do have a list here that Chief Mann gave me of residents. So I think what we'll do when we get to the question and answer period, we'll start with the upper Ringwood residents themselves, the community masters.

Then certainly anybody else who has a comment or a question, we will bring you up and we'll try our best to answer your questions and your concerns.

So I think, just for an idea. Could you just give me a show of hands, the people who would like to make a comment tonight or have a question?

(Pause)

MS. SEPPI: About 35 people.

MR. MUGDAN: At least.

MS. SEPPI: So I think in the

interest of fairness and to give everybody a chance to give us your comments, what we'll do is when you first come up, we'll limit your time to three minutes, so if I go like this (indicating).

If you have two questions or two comments, we'll certainly bring you back again, you know, for round two. Again, I just want to make sure that everybody has the opportunity.

So now I'd like to turn this over to Joe for his presentation.

MR. GOWERS: Hi. As Pat indicated, the reason we're here tonight is to present our proposed plan for a cleanup of three areas of the Peters Mine Pit site, the Ringwood Mine Site, rather, the Peters Mine Pit, the O'Connor Disposal Area and mine pit area.

As Pat has also indicated that the EPA will be accepting written comments from the period between October 2nd and

(Ringwood Superfund/Public Meeting - 11/7/13)

December 2nd, 2013. Also we'll be accepting comments orally here tonight, and that all of those comments will actually be addressed when EPA does select a remedy for the site in the Record of Decision.

And finally, I wanted to point out that we, with regards to groundwater contamination at the site, groundwater is being handled as a separate component and that we would be addressing that at a later point in a separate Record of Decision.

Now, to begin with, I wanted to just quickly go through the Superfund process. The first step in the Superfund process is known as the remedial investigation which data is collected to determine the nature of the contamination. That data is then used to perform a risk assessment which basically evaluates any risk related to exposure to contamination at the site.

If sufficient contamination or

risk exists to take an action, then we proceed to a feasibility study where cleanup alternatives are developed and evaluated.

Then we proceed to the remedy selection process, which first we identify the preferred alternative in the proposed plan, which is what we're doing here tonight. And then we finally select a cleanup alternative and document, which is known as a Record of Decision.

Once the alternative is selected, the cleanup alternative is designed through remedial design. And then the alternative is actually implemented in the remedial action phase.

Now, for those not familiar with the Ringwood mines site, basically it has -- it's actually located in a historic mining district, about 500 acres in size. And iron mining was conducted there from the mid 1700s, as late as into, like the early 1940s.

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In 1965, Ringwood Realty, a subsidiary of the Ford Motor Company purchased the property which comprises the site. And from '65 through '73 there were disposal activities conducted at the site.

During that period of time, Ford disposed of waste from its Ford Mahwah facility, including paint sludge and some drums of material. Ford's contractor at the time was directed to dispose of the material in the Peters Mine Pit, the Cannon mine pit, and in an area which we call the O'Connor Disposal Area, which was used for the disposal of mine tailings.

However, during our investigations it became pretty clear that disposal had occurred elsewhere at the site, along roadways and low lying areas.

Early in the 1970s, the Ford Motor Company started to basically get rid of portions of the site. And they donated portions of the site to both the Borough

of Ringwood and to the State of New Jersey, the New Jersey Department of Environmental Protection. And by 1974, Ford no longer owned any of the land which now comprises the site.

If we look at this figure here, we can see where the site is located. You see the relative location of the three areas we're talking about tonight. And you can see the site is located, at least the southern portion of the site is located about two-thirds to a mile away from the Wanaque Reservoir.

In 1983, the site was listed on EPA's National Priority List, which made it eligible for Superfund cleanup. And from '84 through '88 the Remedial Investigation/Feasibility Study was conducted at the site. And during that investigation, pockets of paint sludge were discovered.

And in '87 through '88 Ford, under EPA oversight, did clean up about 7,000 or actually over 7,000 cubic yards of

paint sludge and soil.

In September of 1988, a Record of Decision, the first Record of Decision for the site was issued. And that Record of Decision was selected as the remedy for long-term monitoring of groundwater and surface water.

After signing that law in 1990, additional paint sludge was identified at the site, specifically in what we call the O'Connor Disposal Area, and Ford was -- came to the site and actually removed 600 cubic yards of paint sludge and 54 drums of material.

In 1994, the site was then deleted from the National Priorities List based upon the determination that groundwater at the site did not present a risk to human health.

In 1995, an additional pocket of paint sludge was discovered in a utility right of way located behind a residential property. And Ford once again returned to remove that paint

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sludge.

In 1997, another pocket of paint sludge was discovered in the O'Connor Disposal Area, and Ford came back again to the site to remove 30 yards of paint sludge and soil.

And in 2004, community members notified EPA and actually arranged for a site visit to show us where additional paint sludge deposits were located at the site. This discovery prompted the development of multi-phase approach to addressing contamination at the site.

One phase was the immediate removal of any known areas of paint sludge. In addition, Ford entered into an enforcement agreement with EPA to investigate the non-residential areas of the site.

And then finally, EPA and NJDEP at various times had taken a lead on the investigation and cleanup of residential tension properties at the site.

In September of 2006 the site was

restored to the National Priorities List. And that was prompted by the discovery of the additional quantities of paint sludge at the site.

And from 2004 to the present, Ford has removed over 53,500 tons of paint sludge and associated soil from the site.

This is just another figure showing the, again, the areas that we're talking about tonight: The Peters Mine Pit, Cannon Mine Pit and O'Connor Disposal Area. And also shows in orange the areas where paint sludge was discovered and removed from the site over the years.

The only area that remains to be addressed at this point in terms of known paint sludge is the SR16 area, which is located right over here. (Indicating).

For those interested in what the paint sludge looks like. This was paint sludge that was discovered at the site

and was removed from the site. Basically, it's primarily hardened lead-based paint. It tends to be gray in color and tends to blend in with the rock.

Here's another chunk of the paint sludge.

Now, the first area we want to discuss is the Peters Mine Pit area, the site which is located at the northern portion of the site. It's about 5 acres in size. And when Ford began the disposal activities, this mine pit was 90 feet deep and was about 375 feet long and 200 feet wide.

In 1973, when Ford donated this area to the State of New Jersey, that whole pit had been filled to grade. Now, due to settlement over the years, there currently exists, the deepest portion of where the pit was has settled down to below the water table, which has now created a pond which is about 300 feet long in the pit.

At the base of that pit was the entry shaft into Hope Mountain, which was mined. That shaft is about 2,600 feet long. My understanding is that goes down about 1,500 feet, and there were about 17 levels that were mined.

Currently, the only existing opening into the Peters Mine would be a 230-foot deep former air shift, which is located about 60 feet east of the Peters Mine Pit. It should be noted, though, that that air shaft is covered with plywood and metal, and it's filled with water and presumably the whole mining network is filled with water.

Here's a photo of the Peters Mine Pit area in 1947. You will note at the bottom here, the Peters Mine, the edge of the Peters Mine Pit.

Again, another aerial photograph which shows the location of the Peters Mine Pit. Clearly shows the existing pond and its location near the Park

Brook.

In 2006, Ford initiated a Supplemental Remedial Investigation in the Peters Mine Pit area to define the nature and extent of contamination there. That investigation included the installation of test trenches and test pits; the installation of directional borings into the pit with collection of soil samples as those borings progressed. Conversion of one of those directional borings into a monitoring well to monitor water quality within the pit; the installation of additional wells in the vicinity of the pit and the monitoring of those wells; a video logging of the Peters Mine Pit air shaft, as well as collection of water samples from the air shaft. And in addition, surface water and sediment sampling of the nearby Park Brook.

Based upon these investigations, it was determined that the pit contained about 113,000 cubic yards of fill

material, which includes about 23,700 cubic yards of mine tailings, which are located at the base of the pit.

Paint sludge was identified in both of the test trenches that were installed, and in two of the test pits. Paint sludge was also identified in one of the four directional borings at a depth of about 60 feet below ground surface.

Here is another cross-section which shows -- well, we understand to be the material for the pit to be filled with. And again, you can see the fill and debris and the mine tailings at the base of the pit.

Result of that investigation, the soil results indicated the VOCs were not volatile organic contaminants were not detected at levels of concern.

Polychlorinated biphenyls or PCBs, lead and arsenic, however, were detected above New Jersey state standards. In

addition, the groundwater results indicated that benzene is consistently detected at levels which are slightly greater than New Jersey groundwater standards in monitoring wells down-gradient of the Pit.

Benzene was also detected at elevated levels from water samples collected from the base of that 230-foot deep air shaft. However, samples collected from above 180 feet in that air shaft tend not to have benzene.

And elevated levels of lead and arsenic were also sporadically detected in some of the monitoring wells in the area of the Pit.

As far as surface water results in the Park Brook and in groundwater seeps in the area that benzene, arsenic and lead were detected, but they were detected at levels which are below drinking water standards, and contaminants were not detected in water samples that were collected from the

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Peters Mine Pit pond.

Due to concerns raised by the community that they were consuming some of the biota, the plants and wildlife at the site, EPA conducted a biota study. As part of the study, they collected samples of frogs, crayfish, small mammals, which included mice, voles and shrew, eastern gray squirrel, rabbits, turkey, eastern white tail deer, dandelion greens, wild carrot, mushrooms, strawberries and raspberries.

Based upon the sampling, we determined that the accumulation of lead was noted in some of the small mammals and the wild carrots, particularly those that were collected from the O'Connor Disposal Area.

Other contaminants were not found to be really entering the food chain, and lead accumulation was not noted in the larger wildlife that was consumed by the community, which included the deer, the squirrel, the turkey and the rabbit.

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Now, once we collect all this data, the next step is to conduct a baseline human health risk assessment, which is conducted to determine whether or not potential adverse health effects are presented or could be presented by hazardous substances present at the site if a cleanup action is not implemented.

And the risk assessment is basically a four-step process. The first step is hazard identification. We identify any contaminants that may present a threat.

The next step is the exposure assessment where we evaluate the various pathways by which people could be exposed to contaminants.

The third step is the toxicity assessment which determines the type of adverse health effects which may be associated with contaminants, and the relationship between magnitude and exposure or the dose; and the severity of any adverse effects, which is the

response.

And then finally, the last step is the risk characterization where we combine the results of both the exposure assessment and the toxicity assessments to quantify the risk at the site.

Current Superfund guidelines for acceptable exposures to harmful chemicals specify the allowable risk for cancer and non-cancer health effects.

For cancer risk, the allowable risk is no more than one additional incidence of cancer in a population of 10,000 to 1 million.

Non-cancer risks is based upon a calculated Hazard Index. And non-cancer health effects are not expected to occur if the Hazard Index is less than or equal to one.

At this site, we conducted separate Human Health Risk Assessments for the Peters Mine, Cannon Mine and O'Connor Disposal Areas. And the risks were calculated assuming that

individuals confined all their activity to only a single Area of Concern. And we identify this as the Total Risk.

In addition, we did a second set of calculations, which were, which apportioned exposures based upon the relative contribution of each of the Areas of Concern to the 22 acres of concern at the site, and that's what we're calling the Apportioned Risk.

Specifically, the Human Health Risk Assessment for the Peters Mine Pit area evaluated exposure scenarios for the walker/hiker, dog walker, wader, hunter/gatherer and current outdoor worker. The results of that risk assessment indicated that cumulative potential cancer risk for game hunters and gatherers of wild plants who confine their activities to the Peters Mine Pit area was about four additional cancer cases in 10,000 people.

What this basically indicates is that there may be unacceptable risks

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posed to hunters and gatherers primarily related to the ingestion of arsenic present in the plant and game tissue.

In addition, Human Health Risk Assessment estimated blood lead levels in particular populations. And this area, the results indicated that we expected to see that 14 percent of the young child/hunter population would have a blood lead level which exceeded 10 micrograms per deciliter, which is above EPA's target level of 5 percent. These results basically indicate that there's sufficient potential risk at the site to warrant taking an action.

And the next step would then be developing action objectives for the site and for this area of the site. For the Peters Mine Pit area, the objectives we develop would limit direct exposure to soil or fill material containing constituent above NJDEP's cleanup levels.

Limit and reduce exposure by

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residents, recreators, hunters and/or hikers to an additional lifetime risk range between one in 10,000, and one in a million and a lifetime non-cancer hazard index of less than one.

Another objective would be to reduce the potential for contaminants in the fill material or soil to migrate into the groundwater or surface water.

And finally, for the Peters Mine Pit area to permit recreational use of the Peters Mine Pit area, given its location within the Ringwood State Park.

Now, the next step is to basically develop a, various cleanup alternatives and evaluate those cleanup alternatives for this area.

The first alternative that we developed, Alternative 1, the no action alternative. No action would be taken. And I need to point out that EPA is required to evaluate a no action alternative, which serves as a baseline for comparison with other alternatives.

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The second alternative, institutional controls, basically means that fencing would be installed around the area and zoning restrictions would be implemented.

Alternative 3, engineered permeable cap on Peters Mine Pit, with institutional controls, Peters Mine Pit Pond would remain. Essentially all this means is that a two foot thick soil cap would be installed over the Peters Mine Pit area, and then that area would be revegetated.

Alternative 4A. Fill Peters Mine Pit, permeable engineering cap of Peters Mine Area and institutional controls, Peters Mine Pit Pond would not remain. Fill material would be brought in to raise the elevation in the Peters Mine Pit such that it is higher in the center than the perimeter of the area. That area would then be capped with a two foot thick soil cap. It would be revegetated, including the planting of

trees.

Alternative 4B. Fill Peters Mine Pit. Implement the -- impermeable engineering cap of Peters Mine area, and institutional controls. Peters Mine Pit Pond would not remain.

Similar to Alternative 4A, soil would be brought in. Increase the elevation of the pit area. Higher in the middle. And then an impermeable cap would be placed over the area. Soil cover would go over that and then the area would be vegetated.

Alternative 4C is the same as Alternative 4B, except that a barrier wall would be installed from the cap down to the bedrock to prevent water from migrating through the area.

Alternative 5. Institute stabilization for the entire Peters Mine Pit area, with institutional controls. Peters Mine Pit Pond would remain. Basically a stabilizing agent would be mixed into the fill material. Once

that, soil and material is stabilized, the area would be covered with soil and revegetated.

Alternative 6A. Removal and off-site disposal of historical fill surrounding the Peters Mine Pit. Fill Peters Mine Pit and permeable engineering cap at Peters Mine Pit, with engineering and institutional controls. Peters Mine Pit pond would not remain.

With this alternative, soil and fill material would be excavated down to the water table in the area between the perimeter of the pit and the Peters Mine Pit Pond. Some of that material, the non-hazardous soil could be segregated from that, and be reused to fill the pit.

The pit would then be filled again to raise the elevation so it is higher at the center of the Peters Mine Pit area. Soil cap would then be installed over that material. The area would be revegetated with trees and other

vegetation.

This figure is a cross-section of what we anticipate the area would look like. The brown material there is the soils and fill material that we anticipate would be removed, and then the green area is, actually represents the cap.

Alternative 6B. Removal and off-site disposal of historic fill surrounding the Peters Mine Pit. Fill Peters Mine Pit, barrier wall and impermeable engineered cap of Peters Mine Pit, with engineering and institutional controls. Peters Mine Pit Pond would not remain.

With this alternative, again, the materials above the water table would be excavated, disposed of off site. The pit would be back filled, then an impermeable cap would be installed over this area. There would be a soil cover and the area would be revegetated. In addition, a barrier wall would also be

installed from the cap down to the bedrock to prevent water from moving through the area.

And then the final alternative is Alternative 7. Removal and off-site disposal of all fill material, Peters Mine Pit Pond would remain. And this alternative basically all the fill material would be dug up and disposed of off site. The pit would be refilled with clean material, such that, to a level that would allow the restoration of a pond in that area.

The next step is that we take all these alternatives and we evaluate them against a set of nine criteria to determine the best alternative. The criteria we look at are:

Overall protective necessary of human health and the environment, whether or not the alternative is protective.

Compliance with applicable or relevant and appropriate requirements.

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We look at whether the alternatives comply with other federal and state environmental regulations.

Long term effectiveness and permanence. We look at whether the alternative is expected to be protective over the long term.

Reduction of toxicity, mobility or volume contaminants through treatment.

Short-term effectiveness, which evaluates the risks to the community and workers while the remedy is being constructed.

Implementability basically looks at whether or not it's technically and administratively feasible to implement that alternative.

And then, of course we also look at the cost of the alternatives.

We also consider whether the state, in this case, the New Jersey Department of Environmental Protection, concurs with our alternative.

And then finally, we look at

whether the community accepts the alternative.

After evaluating all the alternatives against that set of nine criteria, the alternative that EPA has determined is the preferred alternative is Alternative 6A. Again, this alternative would provide for the materials be excavated down to the water table, disposed of off site; or if they are segregated, non-hazardous materials would be put back in the pit.

Fill material would be brought in to raise the elevation of the pit such that it's higher at the center than the perimeter. A permeable cap, soil cap would then be installed over this area. The area would be revegetated, including the planting of trees in this area.

The EPA believes there are certain benefits to implementing Alternative 6A. First, removal of the fill material above the water table and capping will mitigate direct contact risks and

prevent the exposure of biota to the waste without implementability issues that would be associated with complete excavation of the pit.

Alternative 6A is also expected to have less short-term impacts on the community than the other alternatives, which provide for removal or treatment of the fill material. And installation of the permeable cap will allow for the revegetation of the area with trees which will allow for its reuse as Ringwood State Park.

The next area we're looking at is the Cannon Mine Pit area. The Cannon Mine Pit area is located at the southern portion of the site. It was another mining pit that was excavated to a depth of about 140 to 180 feet. The top of the pit was about 200 feet by 140 feet wide.

At the base of that pit was a shaft which connected to other small mining pits in that area, as well as the

Cannon Mine Pit elevator shaft which is a 500-foot deep shaft that's located about 500 feet to the east of the Cannon Mine Pit.

In 1965, prior to forced disposal activities in this area, attempts were made to essentially close this pit by blasting the side walls. Basically those attempts were only sufficient to partially backfill the pit.

And then when Ford began disposal activities, they dumped waste materials from the Ford Mahwah plant on top of that blast rock. And basically when, during forced ownership period, the pit was eventually filled to grade with waste.

In this figure we can see where the Cannon Mine Pit area is located. We can see we don't have the settling issues in the pond, like we do with the Peters Mine Pit area. You see the Cannon Mine elevator shaft located over here, and the mine is the closest body

to the pit.

In 2007, Ford initiated a supplemental investigation of this area, again, to define the nature and extent of the contamination. This investigation included the collection of surface soil samples, installation of test pits, borings were installed into the pit and soil samples were selected as the borings were advanced.

One of the borings was actually converted into a monitoring well to monitor water quality within the pit. Additional monitoring wells were installed in the vicinity of the pit and were sampled.

The Cannon Mine Pit elevator shaft was video logged, and the water in the pit has been sampled. And surface water and sediment samples were collected from the Mine Brook.

This investigation indicated that the pit contained approximately 46,000 tons of fill material, excluding the

blasting rock at the base of the pit. And that solid waste extends down about 47 feet below ground surface at the center of the pit.

To be noted, paint sludge was not identified in the pit, in any of the test pits that were installed or borings. However, 10 drums of material were removed from one of the test pits that were installed, and the contents of two of those drums were actually disposed of as hazardous waste.

This figure again shows what we were talking about here in terms of the contents of the pit. We can see fill material located above the blast rock.

The results of the investigation. Surface soil results. There were no contaminants that were detected above state standards. However, the subsurface soil results indicated that PCBs, lead and arsenic were present at levels which exceeded New Jersey standards.

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Groundwater. Trichloroethene or TCE was detected at a concentration above groundwater standards in one well during sampling events in 2008 and 2009. But TCE has not been detected during groundwater sampling events since that time. And generally, lead and arsenic have been sporadically detected in water samples collected from the wells at levels which slightly exceed groundwater standards.

Again, the next step after the investigation was to do the risk assessment and the Human Health Risk Assessment for the Cannon Mine Pit area, evaluated for walker, hiker, dog walker, dirt biker, ATV rider, hunter/gatherer, current outdoor worker, future resident, and future outdoor worker exposure scenarios.

And the results of the investigation, the results of the risk assessment indicated that the cumulative potential cancer risk for game hunters

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and gatherers of wild plants who confine their activities to the Cannon Mine Pit area was about three additional cancer cases in 10,000 people. And these results indicate that there may be an unacceptable risk to hunters and gatherers due primarily to the ingestion of arsenic in plants and game tissue.

Again, we also looked in the Human Health Risk Assessment at estimated blood lead levels for certain populations. And Human Health Risk Assessment modeling indicated that about 5.6 percent of the young child hunters would be expected to have a blood lead level greater than 10 micrograms per deciliter, which again slightly exceeds EPA's target range of 5 percent.

These results indicate that there's sufficient potential risk at the site to warrant taking an action. So the next step is to develop the remedial action objectives. Remedial action objectives here are essentially the same

as those for the Peters Mine Pit area, with the exception of restoring the area for recreational use.

The next step is to develop the various cleanup alternatives. Here, again, Alternative 1 that was developed, the no action alternative. Again, we're required to look at that.

Alternative 2. Institutional and engineering controls. Installing fencing around the area, putting a deed notice on the property.

Alternative 3A. Permeable engineering cap of the Cannon Mine Pit area. This alternative would provide for installation of a two-foot thick soil cap over the Cannon Mine Pit area that cap would then be revegetated.

3B. Basically this alternative provides for installation of an impermeable cap over the Cannon Mine Pit area. That area would then be revegetated and a passive methane gas management system would need to be

installed due to the impermeable cap.

Alternative 4, in situ stabilization of the entire Cannon Mine Pit area. This alternative provides for a stabilizing agent to be mixed into the fill material. Once that area is stabilized, and a soil cover would be put over it and the area would be vegetated.

Alternative 5. Removal and off-site disposal of all industrial municipal fill material within the Cannon Mine Pit area. As the title indicates, all of the fill material, except for the blast rock would be removed. The pit would be backfilled and then the area would be revegetated.

And finally, for the Cannon Mine Pit area, Alternative 6, relocation of mine tailings from the O'Connor Disposal area and placement of an engineering cap. Basically, mine tailings from the base of the O'Connor disposal area that are debris free could be brought in and

put into the area. Then a two foot thick soil cap would be installed over that. That cap would be then revegetated.

After evaluating these alternatives, again, our set of nine criteria, the EPA has determined that its preferred alternative is Alternative 3A, which provides for the installation of a two foot thick soil cap over the area and revegetation.

The EPA notes that this alternative is expected to achieve risk reduction, comparable to other alternatives, with less impact on the community during construction.

Finally, the area we're looking at is the O'Connor Disposal area, which is a 12-acre, low-lying area on Peters Mine Road which was used by the mine companies for the settlement of mine tailing.

Later, Ford came by, purchased the property. And in 1967 through 1971

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Ford's contractor disposed of waste from Ford's Mahwah facility on top of the materials that were put in that area by the mining companies.

To be noted that pockets of paint sludge were discovered and removed from the O'Connor Disposal Area in 1990, 1998 and again in 2010, and that up to about 20 feet of fill has been disposed of in portions of the O'Connor Disposal Area.

Looking at this aerial photograph, we can again see where the O'Connor Disposal Area is located, along Peters Mine Road, just south of the Peters Pit area, located adjacent to the Park Brook.

Ford conducted supplemental investigations basically in two phases for the O'Connor Disposal Area in 2006 and 2007, and again in 2010. Activities conducted as part of the 2006 investigation included: Collection of surface soil samples, installation of test trenches, soil samples collected

from the fill material and from the bottom of the test pits and test trenches. Installation and sampling of groundwater monitoring wells in the area, and collection of surface water samples from the Park Brook.

Additional activities conducted as part of the 2010 investigation included: Completion of test trenches totaling 3,169 linear feet, and a collection of samples from the base and side walls of the test trenches.

During this investigation, pockets of paint sludge were identified and were removed by Ford in 2010. In addition, 5 drums were encountered during these investigations. Three of the drums were disposed of as hazardous waste, and two of the drums were sent off site as TSCA waste due to the PCB concentrations.

And finally, these investigations indicated that the O'Connor Disposal Area contains about 276,000 tons of fill material and mine tailings.

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Surface soil results indicate that arsenic was detected at concentrations above state standards. In addition, PCBs were detected in only one soil sample at a concentration that was slightly above state standards. As far as the test pits and the test trench samples, PCBs were detected at concentrations which were slightly greater than state standards. Arsenic was also detected above state standards. And lead was detected above state standards in one sample at a concentration which was slightly in excess of the state standard.

Groundwater sampling results during 2012 sampling, arsenic was the only compound that was detected above state standards, and it was only detected in one well.

And in 2012, surface water sampling results, no compounds were detected above surface water quality standards.

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After the investigation, the next step is the risk assessment. And the Human Health Risk Assessment for the O'Connor Disposal Area evaluated the walker/hiker, dog walker, dirt biker, ATV rider, wader, hunter/gatherer, current outdoor worker and resident exposure scenarios. And the results of this risk assessment indicated that the cumulative potential cancer risk for game hunter and gatherers of wild plants who confine their activities to the O'Connor Disposal area was three additional cancer cases in 10,000. And these results indicate there may be an unacceptable risk to hunters and gatherers due primarily to the ingestion of arsenic in the plant and game tissue.

Blood lead estimates were, again, performed for Human Health Risk Assessment. And based upon the modeling, it's expected at 5.6 percent of the young child hunter population would have a blood lead level greater

than 10 micrograms per liter, which again, slightly exceeds EPA's target range of 5 percent.

Remedial action objectives were then developed because this risk assessment indicated there was sufficient potential risk to take an action. And the remedial action objectives are the same as they were for the Cannon Mine Pit area.

The next step is developing and evaluating the alternatives. The alternatives we looked at. Alternative 1, no action. Alternative 2, institutional and engineering controls.

Alternative 3. Permeable engineered cap, minimal grading. This alternative basically means that a two foot thick permeable cap would be placed over the O'Connor Disposal Area. Wetland would be restored and area would be revegetated.

Alternative 4A. Site grading and permeable engineering cap. For this

alternative, soil from the fringes of the O'Connor Disposal Area would be brought back to the center of the area to raise the grade to enable the potential reuse of the O'Connor Disposal Area. A two-foot thick soil cap would then be installed over the area and the area would be revegetated.

This figure basically shows Alternative 4A. The yellow area is the fringe area that would be brought back and put under the cap which is identified in green.

The next alternative, Alternative 4B, site grading and impermeable engineering cap. Essentially the same as Alternative 4A. The soils and fill from the fringe areas of the O'Connor Disposal Area would be brought back to the center to raise the grade. Except in this case, a two-foot thick impermeable cover would be installed over the O'Connor Disposal Area, and then the area would be revegetated.

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The next alternative that was developed, Alternative 5A, removal of fill for off-site disposal with on-site reuse of mine tailings. As the title implies, all of the fill materials, with the exception of the debris-free mine tailings would be removed from this area and disposed of off site. The mine tailings could then be potentially used to backfill Peters Mine Pit. Top soil would then be placed over this area, and the area would be revegetated.

And the final alternative, Alternative 5A, removal of fill for off-site disposal, essentially the same as Alternative 5A, except that the debris-free mine tailings would not be used for fill in the Peters Mine Pit area. They would be simply left in place.

And this figure basically shows the area where materials would be dug up.

After evaluating the alternatives

against EPA's nine criteria, the EPA determined that Alternative 5A, removal of fill for off-site disposal with on-site reuse of mine tailings is its preferred alternative for the O'Connor Disposal Area.

And the EPA believes that implementation of Alternative 5A would allow for this portion of the site to be used by area residents without restriction.

It should be noted that the Borough of Ringwood has recently notified EPA of its intention to seek approvals to construct a new borough recycling center within the O'Connor Disposal area. The borough has also indicated Alternative 4A, site grading and permeable engineered cap would be the most compatible alternative with this use.

It should be known that it is EPA's policy to consider the reasonably anticipated future land use of an area

of the site when selecting a cleanup alternative for that area. Therefore EPA believes that Alternative 4A could be selected as the cleanup action for the O'Connor Disposal Area if the Borough moves forward with its plans to construct a new borough recycling center within a timely fashion.

And this figure is, I guess, the most current plan we have that the borough has provided with regards to the recycling center it's looking to potentially build in the O'Connor Disposal Area.

Now, this is basically the end of my presentation. So I guess at this point in time, I will hand this back over to Pat, and I guess we'll do questions and answers.

MS. SEPPI: We will. Thank you, Joe.

A couple of things. The presentation, we will be putting it up on our web site. Assuming Joe sends it

to me tomorrow, we can get it up there. You can certainly pull it up and take a closer look at it if you like.

Also, if you don't have a copy of the proposed plan, I do have a couple of extra copies here you are welcome to.

So I'd like to start with questions and answers. I just want, Doug, our court reporter here, if you need a break, let me know, because we have a lot of people probably coming up with comments.

When you come to the microphone, either ask your question or make your comment. I ask please would you say your name and spell your last name.

Doug, that would help you out, I think.

The chief has given me a list of residents who have comments or questions. So I would like the residents to have the opportunity first to make their comments. I'm just going to read some names off this list. And

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if you would come up to the microphone, we'll make sure it's turned on.

MR. MUGDAN: It's turned on.

MS. SEPPI: You did. Okay. Thank you.

Walter suggested why don't I call a few names. Then you can kind of line up so you are not going to be wasting a lot of time in between because it looks like we have about 35 people and we're going to try to restrict the time for three minutes each.

Let me read off a couple of names, Amanda Sisenstein. I'm sorry if I mispronounced your name. Greek Iverson, Tracy Basile, Rainbow Weaver, Tony Hawk Langhorn and Marcy.

So come on right up here to the mike. Anybody? And don't forget to please give us your name and spell the last name for the court stenographer. Thank you.

MR. IVERSEN: Greek Iversen, I-V-E-R-S-E-N.

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I just wanted to comment for my friends in the Ringwood area here.

(Pause)

I just wanted to comment for my friends in the Ringwood area that, who are looking for and I think deserving of a solution that is permanent and leaves the area in the same condition as it was originally. And that would mean to not, that would mean to not consider capping or putting a landfill -- or recycling center on top of an existing mess without dealing with it.

MS. SEPPI: Thank you for your comment.

MR. LANGHORN: Tony Langhorn, 177 Peters Mine Road. I'm right across the street from the O'Connor dump.

I don't know whose bright idea it was to move the recycling from one side of the road to the other. I don't know how much money you are going to waste on that. It's pointless. Don't do it. It don't make sense.

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Second, the Peters Mine Pit, if you could get the garbage out, take it out. Don't cap it -- you guys know how many times this has been. Six times? Take it out. This way it doesn't come back. If you take it out now, you don't have to come back. You don't have to see us. We won't have to see you. The land will be fine. All right?

But this covering up, under the carpet is not going to work. It's not. Because it's proof, you can look, talk to the people here. It's come up and it's in people's back yards. How it got from the mine shaft to the back yards, we don't know.

But if you get it out, you don't have to worry about that any more. Okay. And Ford was supposedly taking care of that with the monies. You all are talking about the monies. There was a lawsuit. All of this was already worked out. It was supposed to have been done.

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I live there in the area, and I haven't seen nothing come out of there in the last year. There's been no removal of anything. As far as the recycling, we don't want it that way. We don't want a park there. As long as that chemical is there, that was the other thing. Talk about a park. We don't want a park there. My kids, any of my family members will not play in that park as long as the chemicals are there. And they are there.

Now you are talking about just covering up. I didn't hear you say tonight once that you were taking it out. You said they were going to put two feet of dirt. That's not going to make it. You have to get it all out. So no park. No recycling plant. Leave the recycling plant where it is.

If you are going to leave it in Ringwood, leave it there where it is. Doesn't make sense. How much money to move it 200 feet? What is it, 200 feet?

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Across the street. That's the town. I know. But that's what I have to say.

MS. SEPPI: Thank you.

MR. MUGDAN: Let me just indicate that EPA has no control over whether the recycling center is moved or not. That would be the borough to make that decision.

MR. LANGHORN: Yeah. Another trick by the Borough, I know.

MEETING PARTICIPANT: The EPA and federal government have jurisdiction over the town, right?

MEETING PARTICIPANT: No. But O'Connor Landfill should be.

MR. MUGDAN: So EPA does not dictate land use for an area, whereas Joe said, it's our obligation to select a remedy that's compatible with the reasonably anticipated future land use.

Up until September, our assumption of the reasonable anticipated future land use for the O'Connor Disposal Area was that it would remain open space, as

it has been for the last number of decades.

In September, middle of September, the borough suggested to us that they would perhaps wish to move their recycling center. That is a municipal choice. EPA doesn't make such a choice, anywhere, here or anywhere else. If it's a legal choice that's made, that's the choice that would then guide us in selecting a compatible remedy.

MS. SEPPI: Thank you, Tony.

MR. LANGHORN: All right. Thank you.

MS. LANGHORN: Hi. I am Ramapo tribal member Marcy Langhorn. I live at 177 Peters Mine Road. As far as I hear moving the recycling center, I think it will be hazardous if you don't clean up underneath. If you leave the dirt there, for them to cap over top, they have already taken the dirt, local people from the recycle, to their houses all around town. So why can't they just

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refurbish what they have already? And let us have that land. Why can't we have some of our land back to use it?

If you do a full cleanup on the other side of the road, so we have full use of it. You are giving a tiny bit back from all the stuff they did take. So I think that recycle should stay on the other side because once you guys start digging on Peters Mine anyway, it will probably collapse because of all the traffic. So that's just my part about that.

As far as Cannon Mine Pit, I see everything is methane gas. You say you are going to monitor methane gas and stuff. And you are -- it was up there. It says there's methane gas up there.

And my concern is if the tubes are put up, like they are now -- isn't that a hazard to the people throughout the years even though they did a little bit today but 10 years from now you accumulate a lot more.

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MR. GOWERS: Okay. Well, our preferred alternative is to install a soil cap, a permeable cap. One of the alternatives called for an impermeable cap, but the one we're presenting to you, we believe is our preferred alternative is a permeable cap in the Cannon Mine Pit area. That is a soil cap, and there would be no need to put any methane fence in for that.

MS. LANGHORN: One last thing. For Peters Mine Pit, too, I suggest that you are just putting a Band-Aid on it, because 30 years from now, the people under you are going to be here in the same position you are, because it's been done to you guys so many times. You trusted people doing it and everything. But be it your children, coming up here, saying how come they didn't just remove it, fill it and be done with it?

MS. SEPPI: Thank you. Vivian, go ahead.

MS. MILLIGAN: Hi. Vivian

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Milligan.

All right. From my -- I'm going to cut down here to some of my notes.

One of the things I wanted to ask, one of the things I really wanted to say is O'Connor Landfill, okay, so this was named O'Connor Landfill to the trucking company, right?

MR. MUGDAN: Yes.

MS. MILLIGAN: Because over here it's Ford, Ford, Ford. But the Town of Ringwood also dumped there, okay. And that's a situation -- you have something to say?

MR. MUGDAN: Yes. You are right. Ringwood Borough is also what we call a potentially responsible --

MS. MILLIGAN: Okay. And then I definitely have a problem with this one. You are going by a cancer index of approximately three people out of 10,000. Okay. We might have had a total of 500 residents at one time. But since 1965, over 200 of them are dead.

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Okay? There have been no 10,000 up in Ringwood. So this cancer rate just doesn't cut it as far as I'm concerned, with what we're going through in our area alone. All right.

So I don't want to hear 10,000. Are there 10,000 people in the Town of Ringwood? I don't know. But there sure as hell aren't that many up in upper Ringwood. So I'm tired of you coming back, when I know there's concrete proof things are different.

I think you should think about this, these remedies, this money cannot take, give any one of our loved and lost ones back. All right. We're going through pure hell with what we lost, and we're still dealing with it, with the people that have the cancer.

If any of you have a heart, you have got families, you never know it's going to be yours tomorrow going to be diagnosed with cancer. You might see what the living hell is to have to sit

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and watch somebody lay and die in front of you. We want some of this stuff out of here.

I have asked and I've asked. Clean O'Connor out. Give us our hunting grounds back. Give us our trees. Give us our berries, our apples, our -- give us our land back. I literally hunted with my husband down there for the rabbit. They still hunt there.

And the proposal to the recycling center, as I said before, when you are upwind from it, doesn't matter if it's on the left or the right. And to want to give us your recycling center, again, what is there? There's a lot of waste there, wetlands there, swamp lands there, and we want our original lands back.

I understand you guys have jobs. You have a title. I have a title, too. I'm a lifetime resident. My ancestors were there before any of us here. We have been there for centuries. And we

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have a very unique living and lifestyle that people just can't comprehend and understand. If only you would take the time to sit and think about it.

Now, I mean, we are human beings and we are unique. People can't grasp that. That's a very unique neighborhood. If all neighbors could unite as we do, we need one another, then you could say you have United States of America. And if you don't --

And you are talking about a two-foot cap. Okay. At this point in my opinion, the water up here is mine. It's definitely deeper than two foot, so how are you going to do a two foot cap? Are you talking about digging to that point and then going up?

MR. MUGDAN: To remind folks, at Peters Mine Pit what we're proposing is a much, much thicker cap. We're going to bring it all the up way up to about 3-foot above the surrounding. So that would be a total of 18 to 20 feet of

fill material at the deepest point.

The pond would no longer exist. It would be filled in. That's the Peters Mine proposal.

The O'Connor disposal area, our proposal is what you requested, which is that the area would be essentially completely cleaned. But we have this contingency which is up to the Borough about the recycling center.

MS. MILLIGAN: But still at this point, the -- as far as the cleanup, like you say, you have nothing to do with the recycling center. We're here for the cleanup. All right?

And again, we're asking for our lands back. You know, we want to have what we have had. And, you know what? Listen, I know what I have seen, I know what I have lived, and when it comes to landfill, guess what? We have got methane pipes in the back of the houses on Van Dunk Lane.

I can literally show you these

five landfill sites that the borough had. You know. So we don't need a new recycling, you know. I mean, come on. Put it someplace else, not in a residential area.

I am sorry. I should be addressing this to you, because this was your ball. This is in your court. So I'm asking you. I mean, I know you have done, you know, different -- you have been out there, you are -- blah, blah, blah, blah.

But I'm just telling you from the heart how I feel. Okay. I mean we all have families, and I think we all live and die for our families. We're losing a lot on the dying part, and I'm tired of it. You know.

MEETING PARTICIPANT: We all are.

MS. MILLIGAN: So I think I'm done at this moment. I might take more than three minutes, but you have to expect that.

MS. SEPPI: You can always come

back again when we go through the first.

MS. MILLIGAN: All right. I will take a seat right now. Okay.

(Applause)

MS. SEPPI: Thank you. A couple of more names on this list, too.

Joanne Steel, Rich Chapin, Sally Berman. Miss Berman, I'm sorry. If you just want to wait in line. Thank you.

MS. SAYLOR: My name is Janet Saylor, or Dr. Janet Saylor, S-A-Y-L-O-R. I live in Montvale, New Jersey.

And I first came in awareness of the people of Ringwood when I went to a pow-wow a year ago, and there was a young man whose boss had just died of a heart attack at 45. And I happened to overhear him share that with some friends. And I went up to him. I said I'm sorry. And he broke into tears. And he said I'm 29 years old, and I have been to 165 funerals.

So I took it upon myself to try to

figure out where the gap could be between those risk assessments that say three per thousand, or three per 10,000, whatever the risks are. And the reality that was in my face when I spent time up in Upper Ringwood and saw the devastations of families.

So I sat at a table in Upper Ringwood with Vivian Milligan, who just spoke, and Maxine Milligan, who's also an elder, and member of the CAT. And Vivian has collected health records from every source, family records, municipal records. And she pulled out the death records for Good Shepherd Church, which she had very carefully copied over, for 1965 to 2005.

And with Maxine Milligan sitting there, she was able to read the names and to know who in fact had lived in Ringwood. So this is not a complete set of all the residents in Ringwood, but this is a not cherry-picked set, but a simple set of all the residents in Upper

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Ringwood whose deaths were recorded in Good Shepherd Church, who were known to live in Upper Ringwood and who did not die of accidental or accident, you know -- died of medical causes.

And I am a physicist. So I graph data, and I graphed average age of death versus years following 1965. So from 1965 to 1973 there were a lot of deaths of very young people. Starting in 1973, the average age of death was 75, which is a fairly healthy life expectancy for a population. It was a, in a steady downward tendency, of a third -- two-thirds of a year of life for year of living after the dumping.

So that in 2005 the life expectancy for the community of Ringwood was 52. So that is two -- over two decades loss of life expectancy in a community for which the health department only did the most preliminary analysis. And I understood that the lawyers told them that they had to go

away, and that their hands were tied.

So I just want to say, you know, looking at records, public records, these people, I think the average settlement from Ford and not even for the health, if I understand, but for the damage to the land, was $8,000. That corresponds to just about a dollar a day loss of life.

MR. MUGDAN: Thank you. I do want to note that there's no question whatsoever that people who lived in this area during the years of the dumping and afterwards were very likely exposed to a lot more contamination than is there now. The paint sludge was near the surface, and so that exposure was clearly there, and may have contributed to the data that you talk about.

MS. SEPPI: Chief, did you want to go next?

CHIEF MANN: I'm going to actually read a little bit from --

MS. SEPPI: Would you please --

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I'm sorry. Would you please spell your name?

CHIEF MANN: My name is Chief Vincent Mann, M-A-N-N.

I'd like it to be known, too, that now, because of this, I am an elder now. And that's pretty sad.

The area of the Ringwood mines and the people who worked them and who presently live there are inseparably woven to the fabric of the history of this nation in general, and the history of Ringwood in particular, from before the founding of the Ringwood Company in 1740.

The people who live in this historic area are descended from the original people who were here to greet and lead the European entrepreneurs to this area to exploit the vast and rich iron ores couched in these hills. They have been here and remain. This is their choice of residency to inhabit.

The mines can be considered to be

the most historic group of mines in the United States, having provided iron for every major epic of American history and from every war from 1740 until they closed in 1957, which include the French and Indian War, The War of 1812, the American Civil War, et cetera.

They also provided iron for most of the entire industrial revolution, which included the iron for the railroads, iron beams for construction, and ultimately, the U.S. Capital dome in Washington, D.C.

And my little adage to that is that we're protecting our ancestors' hands that touched that steel for people who are supposed to protect us and failed. The mines opened in the 1940s for the possible use in World War II and closed in '57. The writer knows of no other area which has played such an important role in the development of this great country.

After the death of Abraham S.

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Hewitt in 1903, Ms. Hewitt divested herself of about 32,000 acres. At this time she introduced deed restrictions, which were intended to protect not only the scenic view shed from the forges and mines of Ringwood -- which have been deeded to Dr. James O. Green and her daughter, Amelia, as a wedding present in the 1880s.

But it was also to protect the area from desecration and pollution. The first was, the first of many subsequent deed restrictions was following the same intentions. All these deeds contained the proviso that they attach to and run with the land no matter who owns it.

The 1906 deed states the following -- and before I read this, I would like to know if in this whole process, has the EPA ever looked into the deed restrictions of what is allowed and not allowed in this entire property. Because if you have, then you totally

are missing the fact that it is deed restrictions.

It says that, "Successors or assigneds shall not at any time hereafter cause, procure or suffer to be defiled or polluted in any way rendered unfit for drinking water."

You showed in your presentation, Mr. Gowers, that drinking water, which for us is the brooks and streams and ponds and has been, are polluted. There is no way you can leave this in the ground based upon just this. Never mind the fact that we have 200 Ramapos who are no longer with us in this form.

Mr. Burt Kroll (phonetic) is a very honorable man. He stood alongside us when we fought those powers. He spent a lifetime, his entire life, with all his ailments, to defend us, no matter what anybody did to him personally. He is my elder right there. And I'm very thankful that he lives outside of the mine areas. Otherwise he

wouldn't have been able to put this together for us tonight for me to read it. Thank you.

MS. SEPPI: Any that I have called? I called a couple who haven't come forward.

Rich, do you want to go? Thank you, Rich.

MR. CHAPIN: You are welcome. Rich Jacobs Chapin. I'm the technical adviser to the Community Advisory Group, a professional engineer by training.

I wrote a memo of comments, which I assume each of you have been given a copy of. I'm not going to bore everybody by reading out the questions that are in there. But I will expect, I do want to highlight a couple of things that strike me from the proposed plan as I read it, and as to what has been said tonight.

An additional remedial objective for Peters Mine was to allow recreational use of the property. It's

been out of use for recreation for a long time. Well, what you are proposing, folks, is a closed landfill in that spot. You are going to have to have -- you say you are going to have boulders surrounding it so people won't run up and down it in their quads and destroy the integrity of the cap.

I think you will need a gas fence, which will require fences. My question, whether you will be able to revegetate the capped area with trees, because trees have tap roots. Tap roots will penetrate the geo-textile fabric that you are putting there to assure the structure and integrity of the cap, and so you are asking yourself for failure.

So the question is: What is the recreational use in your proposed plan is going to allow? Admiring how pretty the rocks are or the trees? It's a very serious question. I don't mean to be, you know, smart about this. But what's the recreational use that your proposed

plan will restore to that? We already mentioned methane management. You can see the methane gas being generated if you watch the pond during the right time of the year.

Your plan calls for you are going to water the pit. You are going to compact the materials in the pit, and you are going to do that for structural integrity. And then you are going to build your capping system on top of it, including the fill and then the geo-textile fabric, and then your mound.

Well, the top of the pond is groundwater. After you de-water it, and compact it and build all that stuff, guess what? The groundwater is going to come back and re-saturate the soils underneath it.

How will that, how will those saturated soils maintain the structural integrity that you are hoping for? That's an engineering question, engineering question that I think we

need an answer for.

There's been a couple of these. And I will make a point. If you read the feasibility study, feasibility study has very specific things that it defines as alternative. In the feasibility study, Alternative 6A is an impermeable cap. Not permeable, as you provided here.

I understand you know that might not be different. But what you are proposing is not an alternative that was discussed in the feasibility study. I would like to know if your process allows that.

I bring that up because, because there's another one coming on after that. Over on Cannon Mine, if you take a look at that area now, you have got a fence. You have ground that's covered with vegetation, most of it not grass. Some of it trees. It's been vegetating itself for a couple of years now.

At the end of the day, if you do

what you are proposing to do, which is you will grade it, it will be nicer, the fence will be a -- better than the temporary fence we have there, and the vegetation may look more attractive than it is now. But at the end of the day, you haven't done anything. You have taken a -- you have got a landfill there now that's poorly closed, and you are going to replace it with a landfill that in theory is properly closed. Proper closure only lasts as long as operation and maintenance goes on.

So I would have to ask you to ask yourselves what are you really doing there, and that's in reference to what are you doing for the people who live in the middle of it? This site is unique, amongst all your Superfund sites, in that you have people living on it, right next to the waste disposal areas.

We engineers can put blinders on and look at things a certain way, but you can't forget about the people. And

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reading the proposed plan, it kind of seems like you did. Now I'm going to talk about --

MS. SEPPI: I'm sorry. We're really trying to keep it to three minutes.

MR. CHAPIN: Yes, I would mind, because I will be finished in less than three minutes. I don't want to go off on this three minute artificial --

Joe took 45 minutes to explain what's going on. We should have whatever we need to. I got an on at 10:20 tonight. You realistically accept that, too. So let's just keep going. I will be done.

MS. SEPPI: We'll stay here until all the questions are --

MR. CHAPIN: Thank you.

The recommended alternative for O'Connor. Your chosen alternative was we're going to take it all away. We're going to take it all away because that's the best thing for that waste and its

position in this community. That's what we want to do.

At about 11:59 in the process, oh, we want to reuse the property as a new recycle center. I understand the township's position, which is not at all enviable. I understand that completely.

But if the waste -- if the best option for the waste was to take it away, why all of a sudden is leaving it there okay?

(Applause)

And relating back to the process, I understand that EPA has an obligation to consider future uses. But just as we have got impermeable/permeable cap thing at Peters, which is really a nuance of the whole thing, I understand that.

Here is a, an action, which significantly affects, if not controls your decision. That whole thing was not in any way, shape or form included in the process. It's not in the feasibility study. It was never

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discussed with the CAT.

It was discussed at our September meeting almost as an afterthought. Oh, by the way, this has come up. That has to be fully explained and fully vetted by the community. The people who have to live with that decision, okay, they are owed that. And I think it's the EPA's obligation to make sure that happens. Thank you.

MS. SEPPI: Thank you.

(Pause for break)

MS. SEPPI: Sally.

MS. BERMANZOHN: My name is Sally Bermanzohn, B-E-R-M-A-N-Z-O-H-N. And I am from Rosendale, a town about 60 miles north of here, where I am a market manager for the Rosendale Farmers Market. And my passion is for healthy food, healthy water, healthy earth. And this history that you have presented to us tonight is really appalling.

What has happened to -- how this community of the Ramapo people here has

been dumped on and just abused for all these -- this long, long time, so it's really -- it is appalling. And I really feel that the story here is, you know, that we are in the middle of an ecological crisis in this country, in this region, in this world, and that, that it's really from, you know, digging up stuff from the earth and then having all -- we do not treat Mother Earth the way we should be.

And one of the things I want to say in great respect for the Ramapo people is that, in spite of all they have been through, they are a very strong community and spiritually, especially very strong. And they been having probably a number of people have been to their pow-wows and their prayer for earth. That is how I got to know them.

And there must be several dozen of us who are from the area grew up around here who have come and met each other at

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these pow-wows. And I just want to say that many of us are here and we are not going -- we are going to stand with the Ramapo people. We are not going to let this continued abuse, and especially recycling centers being moved across the road and, you know, half -- halfway fixing up things so that they just get, fall apart again. We are standing with the Ramapo community and insisting that this not happen again.

MEETING PARTICIPANT: Wanisido, ichimanado (phonetic). Thank you, Creator. Thank you for having the EPA consider this proposal and present it to us. Thank you, Creator, for all those who have come to support us, to speak for us. Thank you, Creator, for this opportunity which we have long waited for to heal Mother Earth.

We thank you, Creator, for all that you give us. Standing here is your servant Ekoqua, E-K-O-Q-U-A, the Wuhukuto Mahikanuk (phonetic) nation

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that we started. This is my land. You may use it, but it is my responsibility.

(Applause)

The Ramapo are part of the mahikanuk (phonetic). Long ago, we all came here. We have differentiated over the years, over the millennia. We have moved up the Hudson River, which we call the mahikenatuk (phonetic). We have moved over 12,000 years of moving up the Hudson River. We were headquartered at what is now Albany when the English and the Dutch arrived in what you call the 1600s, the 16th century.

We have been stewards of this land for a long time, and we welcome the opportunity to clean up Mother Earth, to assist Mother Earth in her healing and to heal ourselves at the same time. This is why we are interested in a full cleanup of Mother Earth. A full cleanup to us does not require removing of the contamination. It requires a change.

I happen to have a degree of

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chemistry with 39 undergraduate credits, so I know a little bit about contamination and a little bit about cleanup. We know that you can plant sycamore trees or let them grow in contaminated fields. And if you wish clean drinking water, you tap the sycamore.

We also know there are plant life that cleans up contaminated environments. It's not mentioned at all in this proposal. Has it even been considered?

I have not kept up in recent years, I'm retired, with the photo remediation. But I do know from my interest in it, actually is for the cleanup of people because we can take plants, we call them herbs, and we can clean up the physical body of humans. Why can we not do this with the contamination we have put into Mother Earth?

Which brings me to several

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questions. Why only a surface cleanup? Why an impermeable cap suggested over areas when the soil is removed? What is the stabilization agent that has been mentioned in the proposals? Where was the paint sludge removed to because we're hearing that it was removed to places where our other relatives live, like in Canada. This is intolerable. We cannot remove the trash on our site to somebody else's site.

How does capping improve the present condition? We consider the soil in these sites to be a cap at the present time, because there is no disturbing of the soil. We have seen with the recent installation of the pipeline through our area that this caused respiratory problems and other problems with people associated in the neighborhood, either they lived there or had something to do with it.

Why is the cancer rate among the Ramapo living in this area one in three?

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We have approximately 147 people in the targeted area. Not the entire one mile area, but the targeted area. We have had close to 50 cases of cancer. We have five cases of cancer this year. This is not 1 in 10,000. This is 5 in a few people, less than 200 people.

So what is not being measured? We need to consider the whole people. We need to consider the whole land. The people and the land are not separate. They are united. This is our way of life. We are connected to our land. That is why it is ours, because of the connection.

We are responsible. We do not interfere with others who come, but we do ask for some respect, and we do ask for some consideration. And we do ask to be considered as full human beings with our connection to the land.

And there's a more practical matter, which many raise because it's necessary in the current cultural

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environment, with the dominant culture being what it is. What is being done for the loss of value in the use of residences? This is part of, this is the result of the contamination. Why is it not part of the remediation?

And another question I have is: How is the non-hazardous soil segregated? If it's segregated on site, what's the impact on the residents? And that's all I have for the time being.

MS. SEPPI: We have Rainbow Weaver, and then Amanda, and I think that was it.

MEETING PARTICIPANT: And Tracy.

MS. SEPPI: And Tracy. I'm sorry. Right. As long as -- that's fine. I was just trying to get all the residents first.

MEETING PARTICIPANT: We have a lot of people that are residents. I live here.

MS. SEPPI: I was talking Upper Ringwood. Sorry.

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MS. CANETTI: C-A-N-E-T-T-I, Robin. I'm not speaking for the CAG. But at CAG meetings -- Community Action Group -- Community Action Group has felt all along full removal is what is the correct answer, and that's what we are hoping for.

There's been conversation from the Borough that part of why full removal would be difficult because all of the truck traffic that would impact the residents. They didn't seem to care about the truck traffic when they were bringing it in.

(Applause)

And I'm going to guess if they asked the residents, the residents would be perfectly happy to watch some trucks go in the other direction. But they need to ask the residents. And somehow they are making those decisions.

And as Rich said, this last-minute moving of the recycling center, which, I have been on CAG two years. It's been

meeting for years and years. And then all of a sudden, here we are this close to you guys doing what you need to do, and some new rabbit gets pulled out of the hat. A contaminated, dirty rabbit gets pulled out of the hat.

So if your plan and your best plan was 5A, go with what you were going to do. Forget their recycling center because to modify it so that they can have their new state of the art recycling center. It's a dump. There's a dump there now. There will end up being another dump because they won't fix that first dump.

And what's been done to the people that live up there, it really is a crime and a sin. And to perpetuate more crime and more sin, it's just really time to end it. In our mind, however much you can take out needs to go. The most you can take needs to be taken. Return the lands to the people who made the land the way it was so that their soul can

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heal. Thank you.

MS. SEPPI: Does that work all right?

MS. WEAVER: Very good. Can you hear me now? My name is Rainbow Weaver, R-A-I-N-B-O-W, W-E-A-V-E-R. And I'm from the Mohawk nation, Southern Ontario, Canada.

(Applause)

I offer my gratitude today to the Great Spirit, the great mystery we call solanbesu (phonetic), the one who created us, for us having this meeting tonight to listen, so all parties can listen to what's going on with our Mother. And being a Native American person, we are taught to look at the earth not just as a big mud ball flying through space to be used and exploited, but she is our mother, and this is our house.

And the native people of these lands are sick and tired of you non-native people leaving your bull crap

all over our house.

(Applause)

I'd like you to dig up some of the stuff -- sludge, whatever you want to call it, do-do -- and bury it in your own backyard.

(Applause)

And then watch your children die. Now, that is not my wish. But our people's hearts have been broken for many, many years. We have been fighting terrorism since 1492. And if the non-native people would have stood up for their -- I'm speaking about the two roll wampum now. And if the non-native peoples had kept their word when this treaty was made between the Dutch and the Iroquois people, that we would both travel down the river of life side by each without trying to steer each other's boats.

And part of that treaty was that we would defend and take care of the earth so that the children of our next

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seven generations would have a good place to live. We would not be in this mess.

We're now worried about World War III. Well, take a look around, boys and girls. We're in it right here. World War III is right in our backyards. We don't need to send people over across the Big Pond to kill people over there. We're doing it to ourselves right here, thanks to the government.

So we need to come back to the table and we need to listen to one another, and we need to really communicate from our hearts and not from the green dollar.

(Applause)

MS. SEPPI: Thank you.

MS. WEAVER: Green means budgets, and think how much more abundant we would all be if our lives were made a little bit easier by this.

And I would just like to share a song. And this is a song. It's called

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the youth children's song, and it's a song I want to send out to all of those children that we have lost, and not only us but all children around the world.

This has got to stop or we won't have a seventh generation. And it also comes from the children of the faces yet unborn. We need to think again once about the next seven generations and not just I, me and right now.

Because it's more than us. It's not all about us. It's all about our next seven generations to come, and what are we teaching our children about love and compassion and peace.

(Rainbow Weaver sings song)

Hey ya, hey ya, hey yoa.

Hey nai ya na.

Hey nai ya na.

Hey nai ya na.

Hey yoa, hey ya, hey yoa.

I walk in beauty, yes, I do.

I speak of beauty, yes, I do.

I sing of beauty just for you and

only you.

Hey ya, hey ya, hey yoa.

Hey nai ya na.

Hey nai ya na.

Hey nai ya na.

Hey owe, hey ya, hey yoa.

I sleep in beauty, yes, I do.

I dream of beauty, yes, I do.

I'm grateful for the beauty that comes from you and only you.

Hey ya, hey ya, hey yoa.

Hey nai ya na.

Hey nai ya na.

Hey nai ya na.

Hey yoa, hey ya, hey yoa.

We pray for healing, yes, we do.

We love our healing, yes, we do.

We sing for Mother Earth.

Hey ya, hey ya, hey yoa.

Hey nai ya na.

Hey nai ya na.

Hey nai ya na.

Hey yoa, hey ya, hey yoa.

Hey nai ya na.

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Hey nai ya na.

Hey nai ya na.

Hey yoa, hey ya, hey yoa.

(End song)

Just one thing more. I want to send these prayers out also to all of our brothers and sisters, that skunks and all the animals, all the four leggeds out there that's having to deal with their deaths, and they are dealing with trying to help with toxic materials.

And I'm reminded by one of my sacred elders that when you see these animals, speak to them in a soft voice, and let them know that you are aware of what they are going through, and we are sorry for them, just like ourselves. And they can find their healing, too, and find their strength and their peace again so that we may all walk as one body, one heart, one mind and one spirit, in love, upon Mother Earth, our sacred home. Thank you.

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MS. SEPPI: Thank you.

MS. BASILE: My name is Tracy Basile, B-A-S-I-L-E. I come before you tonight on behalf of WESPAC, W-E-S-P-A-C, a 500-member strong Westchester County based nonprofit organization that works for environmental and human justice. I come before you on behalf of WESPAC to stand in solidarity with our friends, the Ramapo Lenape, who seek a full and just cleanup of their ancestral lands.

WESPAC wishes to express to the EPA our grave concern and disappointment that such huge health and environmental issues have not been dealt with in a more timely and inclusive fashion. We urge the EPA to engage in open discussion with the Ramapo Lenape in all future planning sessions regarding this Superfund site.

As others have explained here prior, these lands and waters are the home land of the Ramapo. And in this

fact lies the heart of their steadfast determination to seek a healing of Mother Earth and the peoples, the many different peoples who live here today. Their deep commitment to protect the earth deserves the EPA's respect, attention and cooperation.

I leave you tonight with three simple questions, which I ask a reply in writing: Why hasn't the waste been completely removed? Why can't Ford Motor Company be held increasingly financially and legally accountable for leaving this community the way they found it?

And I have to close with the final question, and this relates to my observations as an environmental studies professor at Pace University. When I look around the world and I see where we are environmentally in crisis; whether it's the tar sands of Canada; whether it's the issue of hydro fracking in Pennsylvania, Colorado, parts of New

Zealand; whether we look at the Brazilian rain forest. Wherever we look, we see indigenous people at the forefront fighting the fight with a good mind to bring about a peaceful resolution to these crises.

So my fourth and final question has to do with this odd term I saw tonight in your presentation, sir. This term of vegetation or to vegetate, the verb form, to vegetate, or sometimes with the, the word "re" in front of it, to revegetate. I saw this term used repeatedly as a way that would, in looking at the different cleanup alternatives. And I would like to better understand how this term "revegetate" compares to a fully intact forest ecology.

I think my understanding of it is that it pales in comparison. And this is something that we see industry repeatedly doing; whether it's the BP oil cleanup, that we see there's no

funding done in terms of any sort of remediation. There's very little studies done on: Gee, once the cat is out of the bag, how are we going to fix it?

We see that in the tar sands. We see that -- and I just wanted to say that often it is the indigenous people that are most highly impacted by these events, and that are at the forefront of trying to bring the world's global attention to them. Thank you.

(Applause)

MS. SEPPI: I believe Amanda -- I'm sorry. I thought Amanda was next.

MS. STEELE: One more Indian.

MS. SEPPI: One more Indian. That's fine.

MS. STEELE: Joanne Steele. My name was called earlier, but somehow --

MS. SEPPI: I'm sorry.

MS. STEELE: It's okay.

MS. SEPPI: Please, go ahead.

MS. STEELE: S-T-E-E-L-E,

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J-O-A-N-N-E.

I'm from the, up the Hudson River, just south of Kingston. I'm in the Hudson Sierra Club. I'm here in support of the Ramapo Lenape and the citizens of this area that have to deal with it. I mean, I look at that map. Look at that map. Look at all that blue. That's water. That's water. And that's the big water. There's a lot of small water that's not even on the map. It's all connected. You know, we see -- we know, we understand, environmental -- you know, you tug at one thing, it doesn't matter what it is, in the environment, nature, you tug at one thing, and the whole thing moves. It's all connected.

These mines, this stuff in the mines, it should be totally removed. Not remediated. I mean, it's -- you can't remediate death. You know. And Ford did it.

Now, I was at the hearings of the EPA on the situation of the

polychlorinated biphenyls, PCBs, in the Hudson. And who was the big bull then? Oh, General Electric. General Electric was up there crying, oh, they couldn't afford to clean up those PCBs in that river. They put hundreds of thousands of tons in the river. Just, you know, get rid of it. They make more money that way, which is much more important than life, it appears, to too many.

And they cried boo hoo. And I got up and said hey, wait a minute. You have got General Electric up here complaining that they can't afford it. Do people know that General Electric has more money than France? This is true. This is true.

All right. I don't know how much money Ford has or doesn't have. But it's a familiar pattern, isn't it, where a corporation cries and complains, you know, just like the little boy who messed up his room and, I mean that's just fine, messed up the house, the

land.

Ford is bigger than that. Look what it's messed up? Look, look. You know. And when the kid messes up the room, what do we parents tell him? You are parents. What do you tell him? Clean it up. That's what you do. Clean it up. Ford, clean it up. All of it. Thank you.

(Applause)

MS. SEPPI: Thank you.

CHIEF PERRY: Duane C. Perry, current chief of the Ramapo Lenape. I have two questions. One, I'd like to reiterate what our sister said. I would like to see a complete and total cleanup of all the toxins, all of it, on the land and water.

I have one question. And I would like to know exactly what is the prosecutorial process to be followed for malfeasance that leads to death? I would like that in writing as soon as possible. Aho (phonetic).

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(Applause)

MS. SEPPI: Amanda.

MS. SISENSTEIN: I'm here. First I want to say --

MS. SEPPI: I'm sorry, Amanda. I hate to interrupt.

MS. SISENSTEIN: Amanda, Sisenstein, S-I-S-E-N-S-T-E-I-N.

So first. Two feet of dirt. That's your no action plan because two feet of dirt over a landfill, that's nothing. That's your no action plan. Just so you know.

We want every sliver of waste removed from all three sites, which should have been done decades ago. This community has dealt with this for much too long, and it's lost too many people and it's owed to them, a real legitimate cleanup with every shred gone. A cap does not stop the leaching of pollution. Air pollution, ground pollution, water pollution.

There's one thing we know about

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air and water. It moves. And the pollution in it moves, too. And just because you have done some testing now, do some testing in five years and let's see if anything has changed, because that stuff doesn't sit there standing stagnant. It leeches, gets into the groundwater, gets into the air and it moves.

There's no excuse for allowing something to remain that we know is poisoning a community, no matter how little or small amount you think might be there.

But looking at the history, every time you thought you were done, people were like, oh, wait. Here's more, here's more. What else might be there that we don't know about? We looked at how deep. So yes, okay. So it's filled with water, but that doesn't mean it's safe. It might be the whole mining infrastructure might be filled with water.

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But water moves, and there's pollution in that water and that might move, too. So we don't know what else is there, and we won't know until we clean up every last shred up and keep looking until we don't find any more.

The recycling center has been covered. Let's see. I'm sorry.

So I, I mean, as someone said, it's time the people who made the real mess clean it up. I advocated for years on funding Superfund. 13, 14 -- 13 years ago is when I started advocating through NYPIRG, New York Public Interest Research Group. I don't work for them any more. That's just my background.

But when I was working for them, one of the first things we were doing was working on ground fields at Superfund sites. And this was not why I advocated for it. I did not advocate for a few shovels of dirt to be thrown on top of a landfill.

I was advocating for every

community in this country, and in this state, including this community right here, to have every shred of pollution and toxin removed from their communities. Period. That's what I fought for, and that's what I'm expecting of you.

There's no such thing as an acceptable level of toxins. We can't pretend like we're living in isolation, as if the, quote/unquote, acceptable. And to me, I'm sorry, there's no such thing as an acceptable level of toxins, especially when it comes to the air and the water. But we can't pretend like that acceptable level is not happening in combination of all other acceptable levels that we have in our homes and in our water and in our environment and our workplace everywhere.

You have to add all that up because we're not staying in one place. We're going from place to place, and every place we go there's trace amounts

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of lead and benzene and arsenic. Which, by the way, is some of the most toxic substances known to man. No matter how small of an amount that you say there is. So I don't really buy that.

We want every shred of it removed. And I think that's it. Thank you.

(Applause)

MS. SEPPI: William.

MR. VANDUNK: I'm William VanDunk, 24 Peters Mine Road, V-A-N-D-U-N-K, last name.

I have one of the nicest houses up there on the property. When the brown maker dumped, they covered it with this toxic stuff. I had a beautiful son, 14 years old. He's 47 years old now. He lost his manhood when he was 18 because he had 26 operations from being messed up from this stuff.

Go down to the garage there. My house wasn't at the perimeter. Made me move out of that house. The best house in Ringwood, I think. I had to move out

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of there.

Now, as far as the recycling center is concerned. We live there. You watch traffic every Saturday and Sunday up and down the road. People speeding. We have got kids there. We want a speed bump or something put in there. I mean we can't keep our windows clean. We have traffic, trucks flying by all the time. It's just sickening. Thank you.

MR. SANDO: Peter Sando, S-A-N-D-O. Address?

MS. SEPPI: No, that's not --

MR. SANDO: Ringwood resident. Neighbor of Upper Ringwood. I -- you know, I -- I'm just kind of ad libbing here.

Your presentation was very complex. I kind of sat through this whole thing over the years, and it's just, it's confounding that after all of that, all that analysis and everything, and after this site has been cleaned up

by, cleaned up once, and then relisted, that you have the audacity to propose covering it up again.

If you want to redeem yourselves at all --

(Applause)

-- we're it -- as she said, the only site where people are actually living in the midst of the pollution. The only way to redeem yourself at all, to redeem any kind of faith or hope in the powers that be, in these people would be to clean it up completely, once and for all.

Otherwise, in 10 years, you are going to be right back here with the same situation, and they are going to be blaming you. So you have a moral obligation to do the right thing here.

MS. SEPPI: Could you just -- another show of hands. How many more people have comments?

Oh, my. I think we'll have to stick a little more closely to the three

minutes.

So why don't you go? Then if there's any other Upper Ringwood residents, I would like them to come up.

Chief.

CHIEF MANN: I'd like to go after her.

MS. SEPPI: Okay. Fine. Thank you. Go ahead.

MS. MOSKIN: My name is Kathleen, with a K, Moskin, M-O-S-K-I-N. And I'm looking at this maybe from a very different and more personal individual perspective. I am a college professor at Ramapo. I teach nurses. I am a nurse, nurse practitioner, private practice. And many of the people you see here tonight are patients of mine.

I believe that this is a miasma. It is nothing but a putrid fog. And we're talking about a, no criticism, because the data and the research that's been collected and done here has been wonderful. It has been on the soil. It

has been on the water.

But I don't hear anything about data collection on the people who are ill. Now, 50 years ago -- let me take it back one more step, 150 plus years ago, some very smart men, with their women behind them, built those mines, and they built an intricate system of mines.

Now, why, 150 years later, cannot with the technology we have, and the finances available to us, but not given to us, work out the solution which is to remove all of this toxic waste?

Now I want you to think about the 50 years since the dumping happened. In those 50 years, how many people in this community have suffered effects from arsenic exposure? Let's not even talk about mortality because we already know the cancer rates are off the wall, and they just need to be counted.

What about morbidity? When we look at this population, every one of my

patients, except maybe one, has diabetes. And they didn't get diabetes when they were 80 or 60. They are getting diabetes at the age of 30. We're even testing in our practice for pre-diabetes and finding it on patients in the practice. And I know that I don't see anywheres near the population that's here. We're finding pre-diabetes in people as young as 15 and 20.

And the life long in costs to the public for care of these people is far more than cleaning up this toxic waste. If we look at the association and the correlation that's there between arsenic exposure and developing diabetes, the literature is out there.

Why don't we look at the lead poisoning and think about all the special needs children that exist in this population? The babies have been tested. But have we tested the teenagers, and have we tested the middle school students who are requiring extra

funding, extra money? Have many problems associated with ADD, et cetera, et cetera. You could go down a checklist.

So I'm talking more about mortality issues on top of morbidity issues. So what happens when we decide to put a Band-Aid on a cancerous wound? We're only covering it and it's never going to go away. When we look at the philosophy of pay now or pay forever, we're looking at the pay forever as the solutions that have potentially been offered here tonight.

Now, what I have heard a lot being said here is that we're going to remediate. We're going to fix things up, but nothing is being directed towards the remediation, the fixing up, the caring of the people.

I believe that the health departments have a huge moral obligation to look at these communities and find out what's going on. Collect the data

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and measure that data against what you are actually thinking about doing in terms of remediation.

The next issue is that off site disposal is what you are doing with these people. You are putting them in grave yards. And in terms of cleanup, there is not an alternative. It has to be a total cleanup.

Now, think about 19 -- 2064, which is another mere 50 years down the road. Where are these grandchildren going to be? If the cleanup happens now, we all know that the earth will work hard to heal itself. So maybe, when we get as much junk out of there as can be gotten, maybe in time there will be some healing of this earth.

But it's going to be your grandchildren, and I'm talking collectively in Lower Passaic County, Bergen County, Newark, keep going down. The way the water goes, the junk is going to continue to harm the people.

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So I'm asking you how -- my question is: How are you going to ethically protect the people now and people 50 years from now? We're not talking about the soil. We're not talking about the air. We're not talking about the water. We are really, really talking about the people, in my humble opinion.

Thank you very much for your time.

CHIEF MANN: For the record, my name is Chief Vincent Mann, M-A-N-N.

Tonight I stand before you all as the chief of my clan, as a father, a brother, a son, a cousin, a nephew, a grandfather and as a human. I shall speak here tonight not just for my tribal clan, but for those who have been silenced by death.

I also represent the 3.5 million people who cannot be here tonight because of the lack of knowledge of these decisions that have been -- that could potentially affect their lives as

they know it.

The history of this place, in short, is that the very people affected are responsible for being the backbone of this country as it started and have been left behind. We have been documented as being here for upwards of 12,000 years. We are unmistakably the oldest, largest, surviving families in Southern New York and Northern New Jersey to exist continually from recorded history here.

When the people of Upper Ringwood filed suit for health care, complete cleaning of our ancestral lands, what we received was a disastrous assessment that all had been cleaned, and we were given the all clear to go on with our lives, just as our civil rights had suggested.

But when our friends went to make sure that what we were being told was true, we found out that it was not. And with that a history making decision was

made, and that was to relist our land as a Superfund site.

As you very well know, we have been told the very exact same thing at least five times in the years from 1970 to 2013 and a few before that, the recorded deaths of my people, my family show a decline in our life expectancy by 20 years. Throughout the lawsuit, our lives have been at a dollar a day. When the New Jersey Health Agency, the ATSDR, released its cancer statistics, Ford, the Town of Ringwood and the world decided we had not been affected. This is a falsity.

They knew, they do know that it is impossible to determine health effects of toxins in our environment with exactitude as it relates to health issues because these chemicals cause the same health issues as those that are not in the toxins. If all the factors were added up and a true assessment was put forth, there would have been a state of

emergency called.

When the EPA did their assessment, it was determined that there was a health risk to our people, shown here again tonight. They were stifled by the lawyers that could not do their jobs. Yet when the lawsuit was completed, they couldn't do their jobs. They failed.

Your decision to mostly cap these areas is based upon a lack of complete data. And just with that, should be changed to full removal. The cancer rates was based upon 800 people in 200 homes in a one-mile radius. This effectively reduced the statistics by 600 percent.

The reality of what they show is that it is, in the contaminated site there's something like 47 homes. Not 800. And 140 or so Native Americans that live in the center of the Superfund site. So what should have been done or what should have been known is that one-third of our people had cancer.

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Never mind how many that have been affected by other ailments or birth defects or stillbirths.

When did the decision to not care about our people take place? When it was de-listed? Maybe when it was relisted? But yet it was made at first contact.

No matter when that was, it clearly was a decision that was filled with environmental racism which you potentially will allow to continue. What should we, all of us say to the 14-year-old boy who has lung cancer or my aunts and uncles who look to me for help and clear direction? What do we tell our children? Our government could fly our warriors around the globe to defend less fortunate people, government that allow the killing of their peoples by direct action or complete inaction.

I'm saying for all of you on the record what our government does is stand up to fight genocide around the world.

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Yet by their lack of action to save the first people of the nation, a quiet genocide of my clan, my family, should someone in the country fly people here to defend our civil rights and our way of life? Our right to life has been violated, and yet where is our help?

I would also like it to be known that the Town of Ringwood is not a victim here. They are a responsible party. They should hold the EPA to whatever, any decision is made, either upon our ancestral lands or our lives. And they are concerned that they would face bankruptcy because that is also a falsity. They are sure to include protections.

Why would this town increase the taxes on the houses of our people that have no value? We can't sell them. We can't remortgage them to send our kids to college. We can't fix the roof or septic. And because of that, we get fined and have to go to court. Allowing

the Town of Ringwood to be part of any decision or any plan on this Superfund site must be criminal. It would be like giving a murderer a loaded begun.

Clearly, everyone has removed the human element out of their decisions. Anything short of full remediation without any influence by the two responsibility parties, Ford and the Town of Ringwood, we have yet another travesty, another failure of our federal government upon us, and I mean all of us.

At the time of the settle fire, people will emerge. They will retrace their steps to find out what was left on the trail. Their steps will take them to the elders who they will ask to guide them upon their journey. But many of them are elders, and our elders have fallen asleep. They will awaken to this new time with nothing to offer, and some of the elders will be silent because no one will ask anything of them.

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These people have to be careful how they approach the elders. The task of these people will not be easy. And if these people will remain strong in their quest for justice, the Ramapo nation will get a voice. There will be a rebirth of this nation, and a rekindling of old flames, and the sacred fire once again will be lit.

It is in this time that the white skin race will be given a choice between two roads. If they choose the right road, the fire will light the eighth and final fire, once again creating the eternal fire of peace.

If the light-skinned race makes the wrong choice for these two roads, then the destruction of what they brought with them in coming to this country will come back at them tenfold, and will cause much suffering and death to the earth's people.

My name is Chief Mann. I am the sub-chief of this nation, an internal

clan chief.

My only question for the EPA here tonight, because I think you already know what you have to do, is: Where is Mathy? That, in itself, is a broken treaty, just like all the other treaties that say that you cannot pollute this earth, just like the land deeds say you cannot pollute it. And if you guys don't clean it up completely, you will be in violation of that deed as it runs.

We can't die any more. I'm an elder. 45 years old. It's ridiculous. I can't go and cry on my grandmother's shoulder. Who's going to pay me for her -- while the rest of us, 3,500 Ramapos that still exist in this country here.

It's not just here. You guys need to change your Superfund site because it needs to be from; where there's been a full remediation going on over there.

The answer given to me was because it was in the well or drinking water

supply near the river.

Look at that map. I asked my friend Chuck Sted, who found out that he has cancer. Lived and played alongside, guess who, the Ramapo. His spirit is here tonight. It's living through all of us, even you.

I asked if that water had been tested. They said yes. I asked if there was anything found. They said no. You have showed us time and time and time and time again. I'm sick and tired of seeing that map. I want to see a Ramapo nation flag on that map. The injustices to our people continue every day, and every single one of you are culpable.

Our civil rights are violated, our right to life, quality of life. This town, the EPA, the federal government are all responsible. And here tonight, right, that water that you see there is nothing. 3.5 million people, at least. That's the largest watershed this side

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of the Mississippi. How can you not protect it? West Boulder has 13,000 acres of watershed. They don't get one cent for a thousand gallons, or a million gallons. None of it. Yet West Milford residents pay for that, and they don't even drink that water. We can't drink our water because it's contaminated. And you guys show it.

MEETING PARTICIPANT: We pay.

CHIEF MANN: I don't quite mean it that way.

So lastly and honestly, and I'm going to stand here until you give me a direct answer. I don't care if the train broke down. I don't care. He's failed us.

I take it he's kind of your boss, right?

MR. SIVAK: He meaning Mathy?

CHIEF MANN: He meaning Mathy, unless he's going to come walking through that door right now.

No. Only thing that's walking

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through that door right now are the spirits of our ancestors coming through that drum. It's the truth. Because that sound resonates through this earth, through us. Chief Mann. That's with two Ns.

(Applause)

MS. SEPPI: Are there any other Ringwood residents -- I'd like to get all the Upper Ringwood residents.

MEETING PARTICIPANT: Where did that come from?

MS. SEPPI: Upper Ringwood residents? Vivian.

MS. MILLIGAN: All right.

MS. SEPPI: Thank you for lowering that so we could hear Vivian.

MS. MILLIGAN: Vivian Milligan. I am sorry. I have a question for, I assume, Mr. Heck (phonetic), Mr. Gowers and Mr. Holt. Where are you hiding? Over there. Sorry.

On September 11th, you had a meeting, Ford, EPA and the Borough. All

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right. This is when you considered doing your proposal for a new recycling center. September 11th, 2013 you had a meeting. This is when you considered the proposal for a new recycling center. I do have a question and a problem with that.

Again, I would like to know why were not any of the residents asked? Like it's been over the years, so this isn't to me, without any residents being, you know, at these meetings.

Is there an answer for that?

MR. HECK: Why we weren't at the EPA meeting? I don't know why.

MS. MILLIGAN: No. The special meeting. 9/11/13 you said. You know, there was a meeting, EPA, Ford and the Borough of Ringwood. And this was when a discussion was brought up about the proposal that the Borough was going to put a new recycling center. So I'm just asking again why none of the residents were asked to attend this meeting.

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MR. HECK: I can't answer that question.

MEETING PARTICIPANT: It's a back room deal.

MS. MILLIGAN: All right. That one.

And then another thing. I would like to say -- ask everybody to turn around and for those that are here, anybody who has lost someone in their family from cancer from Upper Ringwood, would you please just stand up? This is near half of the people --

MEETING PARTICIPANT: Hands up.

MS. MILLIGAN -- from cancer or somebody's family that's going through cancer problems. They have cancer. We still have some survivors at this point. Okay. I just want people to be aware. This is really nothing.

I just wanted to -- and okay, and I do want to say anybody that wants Mann versus Ford, ask for a videotape, okay, with the O'Connor Trucking firm bringing

in, you know, the dumping stuff.

I just want to make note. On that videotape, there's plenty more, okay, of a lot of things that have happened. And I'm going to be funny here, and say when I saw those ships coming in, I should have hid behind those rocks. Okay. And I want everybody to know that I have had -- I have got an eighth grade education, and if you are determined, you can learn to do things in life.

And again, I'm asking you, Walter, please, think about me. Think about where you were in 1984, and put that consideration on the table when you do this, please. All right. I think I'm done now.

MS. SEPPI: Thank you, Vivian.

MR. SPIEGEL: Good evening. Hello. Just wanted to say hello. Bob Spiegel. I am Executive Director of the Edison Wetlands Association. Also, I am the chair of the neutral CAG. I'm a facilitator. So we have been here for

about eight years now, I guess.

And we came to try to help this community at the request of Senator Lee and Senator Lautenberg, because this is a community that had never seen anything like this. And for somebody in the U.S. Senate who had championed Superfund, it was shocking for even him.

So he came up here about eight years ago, and we never left because we were just as shocked. It always surprises me, these communities, because we hear the same buzz words used over and over again.

And I'm going to actually have specific comments. But I responded very fascinated about how, you know, they talk about money. But the U.S. government is borrowing $85 billion a month to fund wars, to build bombs, to drop them on children.

But when it comes to cleaning up the environment or protecting cultural resources or protecting people's health,

there seems to be never a dime to be found. So I always find the allocation of resources our government puts towards projects really is astounding because you think about it, one month of borrowing could clean up 20 Ringwoods. So the lack of resources is really not an excuse.

This talking stick was given to me about 20 years ago by a Native American community, and I have had it, and I'm going to bring it home with me. I have never brought this out. This is supposed to require people who hold it to tell the truth and to see the truth. So I'm going to put it up here for the rest of the meeting, if you don't mind.

(Handing)

(Applause)

Perhaps it will help to see what's really going on. I always think about the community and what's been -- what's happened here and the injustice. And it always brings me back to one thing.

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That this community has given so much for so long. It has shaped this country. They have built the cannon balls that won wars. They have built the dome that built the Capitol. They have given us the metal that have built the bridges. They have been here for generations untold. And all they really wanted to do was have the same thing that I always wanted, and I know people in general want, a safe place to raise their kids, a safe place to grow up and a safe place to live. Simple.

What differentiates this community from almost any other community is how connected they are to the land. I have a barn. I try to farm. I try to grow vegetables. I don't know how to can quite yet.

But this community, hunters and gatherers, more than any other community I have seen. So for them to have poison biota, poisoned animals, poisoned stuff they pick, that directly impacts their

exposure. You can't look at this community like the EPA looks at other communities.

They are a unique community in that they are, they consume and they hunt a disproportionate amount of food that they consume, and they should be able to. They should not -- it should not be that they are afraid to go out and hunt venison or hunt animals or gather wild berries. That is a right. That is their right. And they should not have to live in fear if they let their kids go out and play outside in the woods.

And it always just strikes me as, even after eight years, we're still talking about this cleanup as though we don't know what the proper way to go is. Okay. The -- we know, as EPA knows, that this area, the only way it's ever going to be safe is cleaning it up.

Okay. Engineering controls are temporary solutions and they always

fail. EPA knows that. We know that. Environmental engineers know that. They have to be constantly maintained or they fail. And so everything that they are proposing is temporary. It requires constant maintenance. It requires babysitting forever.

And if there's one thing about the United States government is we're not good at forever. They do not know, don't do anything for longer than 20 or 30 years. So this experiment of encapsulating this waste is really just an experiment on people.

I came up, the last time I came up, when they were doing the removal work, I saw one of the people's back yards at the end of Cannon Mine Road. This is what the backyard is made of. I would open it, but it would probably clear the room.

Three generations of people were forced to live and had a barn on the property and a playground on the

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property with this, okay. And this isn't candy. Okay. This is really, really nasty stuff that Ford decided they were going to use as a way to try to get rid of the folks up there.

and when you talk about Ford, let's really talk about who's calling the shots here. And that's not Ford. It's Andy Hobbs, AHobbs @ Ford dot com. That's the web site. That's the e-mail address. If you would like to get in touch with him, and let Mr. Hobbs know that Ford needs to be a good corporate citizen. They need to take responsibility for what they did. They need to clean it up.

A Hobbs @ Ford dot com. It's pretty easy to remember. He comes up for a visit one time and he left. But he is the guy who's calling the shots. He's the one who makes the call on what happens here.

So let me start off with why I believe that EPA needs to go back to

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rethink this approach. There's the three areas of concern are the Peters Mine Pit, the O'Connor Disposal Area and the Cannon Mine.

I will start with Peters Mine Pit. There are several reasons why EPA's approach here won't work, and doesn't fit into their bureaucratic pots. One is Ringwood -- Peters Mine Pit is in Ringwood State Park. Effectively, the approach that EPA is proposing here equates to a taking of state park lands. When you take state park land, you have to compensate. And you have to do a, a lot of work where you basically replace that park land with at least a value equal.

Also, EPA has, you know, has not gotten its stick to give them approval from the State House Commission that is required for the taking of park land. That's the second thing.

The third thing, why they can't use Peters Mine Pit is EPA has a thing

about what's called consistency for their biota approaches. That's why they go to Washington, and that's why they do this little song and dance before the Revenue Review Board because they have to show consistency, that all their remedial approaches are the same and nobody gets favoritism and everything is supposed to be equal.

However, if that in fact is the case, we ask the EPA, actually, we asked the State of New Jersey, has the Superfund site waste ever been encapsulated in a state park, or has a state park ever been used for long term storage of waste? Their answer was no, it has not.

So this will be the first time in New Jersey's history where state park land and park land will be used to encapsulate Superfund toxic waste, and they are going to set a bad precedent.

But even more important, it's not consistent with current practices. So

they are making an exception to use the state park as a hazardous waste dump. They cannot do that. It goes against their program. It goes against what's consistent in New Jersey. And it sets a bad precedent, and it hasn't been done before.

Okay. So the state park land needs to be cleaned up, needs to be restored, needs to be returned to public use. So that's why -- that part can't happen.

O'Connor Disposal Area. EPA came back from the Revenue Review Board. They said well, we have -- we talked to the Revenue Review Board. This is the approach we're going to take. We're going to remove O'Connor's area. We're going to restore for the community, that's the highest and best use. The waste that's there can't stay.

Then, at the last meeting, after they had seen the Revenue Review Board, after they made their proposal and came

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out and gave us the conceptual idea of their remedial approach, all of a sudden, now we're going to consider putting a recycling center.

Well, the EPA didn't go before the Revenue and Review Board, as far as I know and propose a recycle center on O'Connor. Did they, Walter? Don't forget you have the stick up there. Did EPA make a proposal to the Revenue and Review Board in any form or fashion to use O'Connor as a recycling center?

MR. MUGDAN: You know the answer. The answer is no. We heard about this on September 11.

MR. SPIEGEL: So you really can't even consider the fact that the EPA will allow the town to use this as a recycling center because this has never been presented to Ford, neither to the public nor the Revenue Review Board who is supposed to be given recommendations by the EPA.

But in fact, all the

recommendations the Revenue Review Board gives, in fact they are actually not recommendations. EPA follows them 100 percent of the time. So once they get past that process, they are done. They are supposed to do the remedy.

It's pretty much consistent around the country. And they can't really now go back and say we want to have this area. We want to put a recycling plant on it because it hasn't been through the Revenue Review Board, hasn't been through the --

Lastly, with Cannon Mine, again, with the waste here, we really, EPA is prematurely putting an engineering control on here, and we don't know the long-term impacts of that, what it's going to do. And we don't fully know of the waste -- of what they are capping.

So EPA really cannot contain the waste in this community. They actually owe this community a lot more than just half a cleanup done badly. And they

really need to go back and come back with a cleanup that fully cleans all three of these mines, and actually this disposal area, as well as require Ford to do the right thing. And that includes restoring this community and actually doing -- becoming a good corporate neighbor.

So I appreciate EPA being here tonight. You can't do the plan as presented. And these toxic assaults on Ringwood and other towns, like Pompton -- is here tonight. Just the people at Ringwood. We're all in the same boat.

Corporations have dictated policy in this country far too long.

MEETING PARTICIPANT: That's right.

MR. SPIEGEL: It's really far time that the --

(Applause)

It's time that the public look at what we're being forced to live on, to

use for our gardens and our homes. And remember, if EPA really wanted to show us this stuff was really safe, they would dig it all up, take it out of the mines, take it from the homes, and they would go drop it off at Andy Hobbs' backyard and see if Mr. Hobbs and his corporate neighbors would really like to have this in their backyard.

(Indicating)

MS. SEPPI: All right. Let me read the rest of the names on this list that Chief Mann gave us. We have a lot more people that want to make comments.

Now I have Paul Togan. No? No Paul Togan? Oh, I'm sorry.

Paul Tobin. Then Paul Bermanzohn and Evan Pritchard.

MR. TOBIN: So I'm kind of reminded of the movie "I Robot" where he -- I forget what you call it, but he says that's not the right question, so I realize that.

MS. SEPPI: Paul, would you please

give your name to Doug, and spell it? Thank you.

MR. TOBIN: Paul Tobin, T-O-B-I-N.

So I'm 69 years old, probably because I didn't live in this area in 1947. So here's a question that goes back to biblical times: Where is your brother? It was from when Kane killed Abel, and he said the blood of your brother is crying out to me from the ground. And when I look at this, I think of the blood or the cries of the people that we have lost because of this site.

So my question is: Can you guarantee those six options will actually really clean and make this site for the future generations? I don't think it can. I think it needs, there needs to be a seventh option that could guarantee that, and that's with all of this gone.

Now, I'm from the country, so this was a story I was thinking about. I

went to see a boxing match down in New York City. At the end of the match, the people in the gallery started throwing bottles at the people. The people in New York City walked out the main door. All the people from the country went out the side door because they knew that somebody was going to get hit by those bottles.

So somebody is going to be affected by this pollution. So, you know, I think it's not right to take a chance. Not one person. Not one person should die from this, from any of those options. And those options don't guarantee the health of all the residents.

Mice produce so prolifically that generations of mice -- you can't equate mice to human beings. Human people have a much slower metabolism.

So I'm, you know, I think one more generation -- when my granddaughter has a child, that will be the seventh

generation, so I want her to have a full life. So we're here to support our relatives, the Ramapo. We have lived in this area for 10,000 years or more. We have a relationship with the land and with the people.

So I know all of us here, you guys up there, everybody here wants the best. So let's make the best decision. And that's to remove all of this, so we're not taking a chance. It's not a shell game where we're going to guess. We know for sure that if it's gone, we won't be affected by it. And then the land will cure itself. Thank you.

MS. SEPPI: Thank you, Paul. Paul Bermanzohn.

MR. BERMANZOHN: Hi. My name is Paul B-E-R-M-A-N-Z-O-H-N. Okay. And I'm here -- I'm also from Rosendale, and I'm here because I have learned a great deal over the years from my contact with people from the Ramapo Lenape about the importance of Mother Earth and how we

need to faithfully take care of our mother. It's an obligation that all humans share in order to have a life.

Now, I'm a recently retired physician. And in medical school I was specially trained in environmental medicine. And I spent the better part of my career working as a, an environmental justice activist.

And I have to say that there's a big trend here. This is not just one isolated incident. I see this happening time and again in communities all over the country, and even all over the world.

I want to just say a few things I think are components of this friend that can be seen in different places, and that I think affect our prospects as a human species, survival on earth. This is a serious problem. I think that, you know, my training in environmental medicine, most of my career as a physician I spent as a psychiatrist. I

did about 20 years of research on schizophrenia. I published a number of books, lots of articles, so on, doing research on the subject.

I'm not an industrial chemist. There's a lot of things that I don't know about the particular compounds and how they work. Here, I don't want to say I'm an expert on this. I don't know industrial chemistry, but I know crazy.

And I have to say that what I see in the way that the human people, human species are treating Mother Earth, it's completely insane. There's a trend that's going on and the features of it are something like this. Big companies produce poisons in the course of making their products. In order not to, in order not to spend too much money, what they do is they dump those poisons on wherever they could get away with dumping them.

This is true all over the world. No big secret. The companies call this

externalizing costs. What it means is they are able to get other people to pay for taking care of these poisons.

Generally, it means the government, which means tax money, which means the people end up paying for this. The level of dumping poisons into the environment has gotten to the point where it's actually changed climate patterns. And it's actually created a situation where it's not clear how much longer the human civilization can survive.

I mean, I think all these bold and fundamental stupid projections by people like Mayor Bloomberg in the city, like. And New Jersey will survive after Sandy. Nature will win. Water always wins.

(Applause)

So you have a situation here where there's kind of a craziness is allowed to persist. It keeps going and keeps going and keeps going, and there's no end in sight. Nobody is putting a stop

to it.

At the same time, I think we can see in everything that's happening that there's a greater and greater integration between large scale corporations and government at all levels, whether we're talking about local all the way up to federal government, they are increasingly the same thing. And what they have made very clear is that when it comes to large ecological collapse that we're all facing, it's business as usual. They are not going to do anything.

And I think in a situation like this, and this leads me to my one question. In a situation like this, where the government and the corporations are one thing, and they refuse to deal with the disaster that they are creating --

And by the way, the effect that this has on scientists throughout this country and throughout this society

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worldwide is that scientists are called upon to justify everything. Very often that involves people actively lying. More often it involves people looking aside and not noticing certain things, like the human factor that so many people have talked about today.

So in a situation like this, where the powers that be are increasingly integrated and committed to not dealing with the mess that they have created, the one question I have for you, and I'm serious about this as a question: Is there any other choice for people of the world than actually making a revolution? That's the question that I have for you tonight. Thank you.

MS. SEPPI: Thank you. Evan. Could you state your name and spell it?

MR. PRITCHARD: Evan Pritchard, P-R-I-T-C-H-A-R-D. And I'm the director of the Center for Algonquin Culture, and I hope you don't need an explanation, but I will explain the Ramapo people are

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Algonquin culture, part of the Algonquin cultural group. So it happens that it's my privilege to occasionally consult to them, pro bono, of course, because I love them and they are my friends. But they also advise me on my research.

So I'm here as a friend of the Ramapo community. And mainly I wanted to say that, you know, if I were to advise them in this, I would say there's a fundamental law of Algonquin, I will say Algonquin law, which is not written down, is that you always try to leave the land as you found it, or while you are using it, you may dig holes or even bigger holes. But that when you are finished using this, that you must by this law fill the holes and restore them.

Filling the holes in this case isn't really the point. The point is another law which says that you restore the land to its pristine condition. So that would mean removing all the toxic

chemicals.

And another principle, of course, is that life is sacred. So that also would say that this toxic presence should be completely removed. And another principle is that, or a saying in Algonquin culture is that, you know, our ancestors had pure, clean water and pure, clean air. And they also, and this is historically evidenced, often lived way past 100 years old in this area. You can look that up.

During the Revolution, Chief White Eyes, who I believe was the Munsee, and the Ramapo ancestors were Munsee, lived over 100 years old, was a friend of George Washington. There are hundreds of cases of these people living over 100 years old. Now we see 52. So from the old long perspective, this is about half a life span. So how do these things happen? So also -- I have some questions.

First of all, it seems that you

are saying that some of the paint sludge may or may not have gotten to the Hope Mountain mining system. And can you tell me, do you know that it's there? How will you find out if there is sludge gotten into, and how, what could be done about that?

Another question I have. It seems you mentioned there was a separation between the study on the paint sludge and study on water. And I want to directly ask you: Why is there a separation? And does that separation imply a delay on the study of water contamination and everything to do with groundwater and drinking water? And if so, does this make sense? Because it seems to me, as a non -- again, like some of those who have spoken, just looking at it from a kind of a dumbed down version is okay. Isn't it likely that the groundwater may be the most important issue? And if it's the most important issue, why aren't we starting

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with that? And how can we possibly know whether it's right to cap this or that, until we know what the water is going to do?

And to me, as a -- as a kind of a layperson, it seems like you are spending four years studying the paint peeling on a house and putting off the study. In fact, the house is on fire. So think about that. Okay. And get back to us all. Thank you. And you can report to the chiefs. They always tell me what's going on. Thank you.

MS. SEPPI: Thank you. Those are all the people on my list.

Anybody else have a question? If you want to come up and form a line, we'll certainly listen to your comments, your questions and comments.

MR. LEICH: My name is Donald Leich, L-E-I-C-H. I'm here representing Food and Water Watch. The observation, first let me say it's deplorable what the Ford Motor Company has put this

community through for the past almost 50 years. The observation was made before the water moves. This is a watershed.

This is not isolated to just the areas within the dotted lines on the map. This is an environment. Water moves through it. Rock also moves. We're in an area near the Ramapo fault. This is a geologically active area.

Anything you do to contain the contamination has the capability of coming apart. So I hope you just keep that in mind. Anything less than a complete cleanup puts the Wanaque Reservoir at risk.

The Wanaque Reservoir services something like 2, 3 million people as their primary source of water, another 3 million as their secondary source. There should be 6 million people here tonight demanding that you clean this up completely. Thank you.

MS. RIGGIOLA: Lisa Riggiola, R-I-G-G-I-O-L-A.

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I will be quick because you will have to hear me in Pompton Lake within a week.

MS. SEPPI: Within a week, right?

MS. RIGGIOLA: Right.

I just want to say when we found out we had contamination, the first phone call I made was to Mr. Wayne Mann, who's not here tonight. But the people here helped me, and I'm here tonight because I was invited to be here.

I have one thing to say, which is: I don't really understand all these alternatives. I really don't care how much it costs. Lipstick on a pig. Every alternative on there is lipstick on a pig, except for the full cleanups.

I think these people have suffered long enough, and somebody mentioned environmental racism before. And it is really real, whether it be because of your color or because of your income. If it was us committing this crime of dumping all of this, whether it be, you

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know, us dumping it in Peters Mine, the whole thing, we would be in jail.

Meanwhile, you are negotiating or giving the lesser alternative to these people. And as a former councilwoman, if there's any council people here from Ringwood, for you to even think to put a dump site there, I know what you are doing. You are trying to help them not clean it up properly. Shame on you all.

MS. SEPPI: Thank you.

MS. BENEDETTO: Ann Benedetto, B-E-N-E-D-E-T-T-O.

Environmental Protection Agency. I'm assuming that means that you are the current stewards of the lands and its people, of an intricate web, much like a spider web in that it is strong yet very fragile and you must take care of it. It includes all the species within that independent web.

So my question to you is: Within the structure that we have here, who has the power to make the decision? I heard

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you say the community members count. Do they have at least equal standing in the decision that's going to be made?

MR. MUGDAN: No.

MS. BENEDETTO: Can I get a response, or are you spacing out?

MR. MUGDAN: No. I just, I need to understand which decision you are talking about. As I said earlier --

MS. BENEDETTO: The decision as to how the cleanup will happen.

MR. MUGDAN: The EPA's decision.

MS. BENEDETTO: The community does not have equal say in this. Whatever happened to "we the people"?

MR. MUGDAN: EPA has obligations and does take their obligation and responsibility seriously to the environment. But ultimately, the law gives the EPA the final responsibility.

MS. BENEDETTO: Thank you for your response. You are all very nice people, but what I see here is a bunch of white people again telling indigenous people

what to do with the land.

(Applause)

The Ford Motor Company has blood on their hands because there are children that can't be here today that I knew 10 years ago that are dead. Don't let that blood be on your hands, too.

(Applause)

MR. DELEEUW: My name is Hubert DeLeeuw, D-E-L-E-E-U-W. I'm from the Netherlands, from Europe, from the old country. I'm from the Netherlands, the old country. I'm Dutch.

I came here 20 years ago to study Dutch, Native American history, and I fell in love with this country, the Hudson Valley, its beauty, its people, and also America. Of course, America is a leader.

And I think also I have to look at this situation from another dimension because I'm from abroad. Maybe I'm the only one doing that. Because if I sit on the moon and look at all this, it

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also goes about making the world a better place from the function of taking a leadership position.

If you want to change the world, make the world a better place, leadership, leadership can be with America. But you need to show that leadership. First and for all, with your own people. And first and for all, with the first people of this country. By doing that, you can be an example for the world, how things need to be done. How to protect the environment. How to make the world a better place so it stimulates other people to do the same thing. And that's a dimension I want to put to you on the table.

But you represent the government. You are representing America. You are representing the people, including the first nations.

That's all I want to say.

MR. ZACH: I'm Brian Zach, B-R-I-A-N, Z-A-C-H, a Renville graduate

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student, a Ramapo College graduate student.

I have a copy of a 1989 health assessment that ATSDR performed. And it states that about the groundwater, it states, it states the following. The upper -- it states that the upper, of the two aquifers underlying the site is located in the over burden and upper bedrock. The lower aquifer is in the deep bedrock. Interconnection between the two aquifers exists at most places, but vertical permeability between aquifers appears to be low. Although in general, groundwater in the vicinity of the site flows with the contours of the land, the vaulted and fractured nature of the geology may cause significant deviations in groundwater flow. This could result in movement of contaminants into areas not expected to be impacted.

Also, there's the faults that cause fractures in bedrock. And I'm hoping to find out what EPA has done to

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address these concerns. And I also would like to know why groundwater was bifurcated from the, from the other areas. That's all. Thank you.

MS. SEPPI: Thank you.

MR. GRIFFIN: My name is Kurt Griffith. That's Kurt, like Kurt Waldheim, Griffith, like Andy Griffith.

MEETING PARTICIPANT: Can't hear you.

MR. GRIFFITH: Is that better?

My name is Kurt Griffith. That's Kurt, like Kurt Waldheim. Griffith, like Andy Griffith.

I'm not -- I don't represent any agency or organization or political constituency in connection. I am an ordinary person, a citizen, although I am a singer, and over the evening, I have heard some things that reminded me about what I have been taught over the years and would like to bring to your attention.

I spent the better part of the

last two or three years trying to convince people to step the earth science back in middle school, that yeah, we'll change the planet. I have had every possible climate declined sustainable, ignoring global situation, completely dismissing argument thrown at me. This tends to thicken your skin.

But the thought occurs to me is that the Lakota people have the same, la tek ye nas sin (phonetic). It means we are all related. And we have had this evening, we've had chemists and physicists and engineers and doctors come up here and testify with conspicuous detail on the many issues that the proposals have.

Ask a quantum physicist, that everything in this world is intimately connected to everything else. You can't nudge, touch or even look at any of it without affecting all of it. And this is what you are up against with toxic waste sites. It touches everything

right down to the sub-atomic level. It touches everything.

I look at those veins of the mother going through that land. I'm saying how can it not? And that's the first.

The second, you have heard the phrase "seven generations" uttered many times tonight. I thought about that. How long is seven generations? We say we are now manifesting decisions made, started seven generations ago, played themselves out in this generation.

Seven generations. That's about 175 years, roughly the span of industrial civilization. That is the level of your responsibility. That is the crushing, overwhelming weight of what you have to dig out from under. The collective irresponsibility of 175 years of industrial civilization visited upon this microcosm of the earth.

And I look -- and I have sons, which is one of the reasons I'm here. I

want them to have a good life. I want them to be able to thrive in this world. I see it becoming increasingly difficult. And will we be here in 175 years? What we do now, right now, every day, manifests, has consequences that domino down seven generations from now.

We haven't talked about that. And that's the truth of the matter. Every decision, everything you do or say that you think, plays out for 175 years. I want them -- I want our descendants to think good of it. I want them to be here.

And that's what you are up against. Take it seriously. I think you understand the EPA faces political headwinds unlike anything they have ever seen since the agency was created. Tough. Tough it out. Fight back. Claim your responsibility. Make us proud. Toughness.

MS. SEPPI: Thank you, Kurt.

MS. WEXLER: Diane Wexler,

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W-E-X-L-E-R. Pipeline workers. We're here to support the Ramapo people. You all are EPA. Is that correct?

MR. MUGDAN: Yes.

MS. WEXLER: Did you people write this?

MS. SEPPI: No.

MS. WEXLER: Did you read it?

MS. SEPPI: Just got this tonight, so I haven't had a chance to read it.

MS. WEXLER: I want to tell you, every one of these sections is discussing about venting methane gas. You are EPA. I don't have to tell you how bad methane gas is, greenhouse gas.

Then we get to one section where we're talking about explosions. The poor woman said before, when the pipeline came through here -- we know how wonderful they are -- that people have breathing problems. You are going to leave these people with methane gas that they are going to have in their back yards. They won't be able to go in

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certain areas. You are going to fence it off? That's not acceptable.

They are fighting for their land. They want this muck cleaned up. And it is Ford's responsibility, and you can't have methane going off into the atmosphere. That's it.

MEETING PARTICIPANT: Could you please turn the microphone up so the audience can be heard? Your microphones are very loud, but our microphone is very soft. It can't be heard in the back.

MS. BUDZ: Hi. My name is Beverly Budz, B-U-D-Z. I represent the North New Jersey Pipeline Workers, and I'm a friend of the Ramapo people. The EPA needs to step out of character and step up to the plate on this issue. These three sites need to be cleaned up completely. We say no to coverups. We are not buying it, so stop selling it.

The EPA needs to stop hiding behind words like slightly under the

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level. The EPA needs to take responsibility for what it stands for, protecting the environment. Thank you.

MS. SEPPI: Thank you.

MEETING PARTICIPANT: The only name of mine that matters is the one that was gifted to me in a ceremony, so I'm going to use that name tonight because my white name doesn't matter in this context. So the name that I'm going to use this evening is Akechi Doweya (phonetic). It was given to me, and what it means is she who transforms to a forgiveness to move forward. But it's very hard to move forward on this earth when you can't forgive something that is unconscionable.

So what is heartbreaking to me tonight is I heard Chief Mann mention Chuck Sted (phonetic). Chuck Sted is a very close personal friend of mine, and Chuck Sted was the man that brought my husband and I together 27 years ago in a social setting. And because of Chuck

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Sted, I have been married to my husband as of October 23rd of this year, 25 years.

And I have to stand here, sit here in this room tonight and find out through Chief Mann that Chuck Sted now has cancer because of what happened in his community. And that's unforgivable.

The one thing I haven't heard spoken about this evening, and hasn't been talked about at all, is regardless of what method is chosen to clean up the mess, then what? What becomes of that mess? Where does it go? It can't go anywhere, because no matter where it goes, and it's still there, so it has to be destroyed.

And the sad part of that is that once it's destroyed, then it creates another problem because, as many people this evening have said, it's all connected. So even if you burn it, melt it, blow it up, do whatever you do with it, then it becomes part of the air that

people breathe. And it goes up into the atmosphere, and another three or four or however many generations down the road, it comes back to us, and it starts all over again.

So the other thing that has to be considered tonight, besides cleaning up the problem, is really thinking very seriously moving forward about how do we prevent things like this from ever happening again so it doesn't become a perennial problem that never goes away.

Thank you.

MS. SEPPI: Thank you.

MS. CONE: I am Donna Cone, C-O-N-E, but also I will use my native name which is ta has nan hat (phonetic). I'm with the Mohawk tribal nation, and I'm proud to be Mohawk. What I'm not proud of is what I see in front of me.

When I look at this up here, I see Turtle Island. Turtle Island to us is our mother. We strive in our culture to take care of our mother. We are an

example to take care of our mother. Pay attention to that example.

When I look at this, I see the water. I see all these veins. Those veins are our Mother Earth's veins, just like we have veins. If we put a poison on our biggest organ, which is our skin, where do you think that poison goes? It lands in our veins and travels to our body. That's the same thing that happens with Mother Earth. It travels through her veins, and it keeps going. It pollutes the rest of our Mother Earth, our Turtle Island.

My family is from Akwesasne. And my grandmother, who died at 52. Massive heart attack. Why? Because where we're from, we had the Colgate Company that was dumping the fluoride in the water. Again, high levels of fluoride. Even a tiny bit, what's it do? It poisons you. And we know that.

Now, my grandfather died of lung cancer, very young. I was 5 when he

passed on. I never got to meet my grandmother because she was 52. I wasn't born yet.

Talk about 52. I'm actually 52, and I, like the chief, I'm considered an elder to my people. I'm no elder. I'm only 52, too young to be an elder.

Where my parents lived actually was an apple orchard. A big company that had a big apple orchard. And the land my parents ended up with, along with other relatives right up the road, down the road, friends, had decided to build there.

What happened was years later, their wells all ended up polluted. And that was from the apples being sprayed. It went right into the land, the soil. So when we get our covering of snow, Mother Earth's blanket, when spring comes, it melts and turns to water and goes into the soil.

Where does it go? It goes in the veins of Mother Earth. It goes into our

water, waterways. It pollutes also our Mother Earth also at the same time, because that soil absorbs the water for us also.

So again, when we talk about cancers, my father died of cancer in 2003. My mother just died a year ago of cancer. The next door neighbor died five years ago of cancer. Her sister died recently of cancer, two years back. The house down the road, he died of cancer. You go down a couple of houses, their child developed cancer. You go up the road, again, every other house is cancer. Down the road is cancer.

Now there's a generation there, most of the houses, what do they have to look forward to? Cancer. All because the town covered up how can we clean it up? They didn't clean it up. It was too late. So I'm asking all of you to just not hear what I'm saying, to open your ears and listen to what I'm saying, with a good heart and good mind, because

what's going to happen when your grandchildren and your great grandchildren look to you for an example and say hey, dad, grand dad, great grand dad, what did you do for our generation? What did you do? What are you going to say?

Be the legacy. Don't be a lie. Be the legacy for your children, grandchildren, great grandchildren. Be the legacy for the Ramapo nation here. They deserve it. Even these people here that are non-native deserve it also, to have a clean environment, clean water, to live in. And not to have it just covered up with a Band-Aid like it's a wound on your skin.

So I'm asking for all sake, three things, your actions, and clean it up, so that you could be the legacy.

And as far as the treaty, recognize the treaties. Remember the treaties. Recognize them. They are still alive and well. Right here today

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and forever. So clean it up, make good, make it your legacy for your children, grandchildren and great grandchildren, and also keep up with the treaties.

MS. SEPPI: Thank you.

MR. STEWART: Thank you. I'm going to use my regular name and also the name I was given. My first name is Neil, last name Stewart, S-T-E-W-A-R-T. My native name is Raven Fire Claw.

I don't want you guys to answer the question now. I don't want you to answer it next week at another meeting.

You say we have all this stuff, all these places to clean up. Well, I have heard multiple times tonight that you said it was supposed to happen last year or this time or this time. Get it done. As Newton's law says, every action has an equal or possible reaction. If we don't clean it up now, it's not going to happen. That's all I have to say.

MS. SEPPI: Thank you. Helen?

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MS. MARTINS: Helen Martins. I'm from Pompton Lakes, New Jersey. I'm here to support the Upper Ringwood families and the Ramapo Indians. I stand before you tonight, and I am, I'm so disgusted because I also know what these people are going through, because we're living on top of a contaminated site in Pompton Lakes.

I don't understand. I know we have to move forward, and we have to have companies to make and develop and whatever. But it seems like these corporate companies have done good, but when they have done good, they have destroyed.

I stand here and I hear this lady say about Colgate and the fluoride in the water. I hear about Ford and them dumping on this site. And to me, they know what they are doing. It wasn't a mistake. They knew what they were doing. So did everybody else, with the fluoride and DuPont, and everybody else

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in the corporate world that has dumped oil into our waters and polluted our grounds. And yet our federal government, the EPA, our elected officials, they all sit back and they let the big corporate run the show.

To me, there is no question that Ford should come in here and remove every bit of this, and restore this land back to the way these people expect it to be. As I stand here before the EPA, and you all know my opinion, there's no exception, you know. You say well, what about the ramifications or what -- that's nothing.

The company who has done this -- and I have heard Superfund -- the company is responsible. They need to clean it up. There is no exceptions of how much it's going to cost. Clean it up. We're killing ourselves. Where are we going to be? What about the future generations to come? What are they going to have? They are going to live

on nothing but toxic sites all over this country.

And our water, we're allowing people to dump chemicals and stuff into the water. An acceptable level? Well, when is it not acceptable? I think we have to stop this crap, and deal with it. Clean it up and get it cleaned up so we can live normal lives and not have to live in fear if we're going to get sick and die at an early age.

And there's one other question I want to ask. The EPA's presentation states lead levels in several slides were within the safe level. Is EPA's risk assessment saying there is a safe level of lead in children, or anyone can be exposed to it? Because there is no safe level. Lead is not -- there's no safe level for lead.

So all the charts and everything of what everybody says, what are we doing? What are we putting our tail between our legs and makes excuses for

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these companies? Clean it up. Thank you.

MS. SEPPI: Thank you.

MS. PEEL: Susan Peel, P-E-E-L. I'm a professional engineer, civil engineer. I have a real question about the basis of your design. You say that the way the land could be used as a hunter could result in perhaps five deaths out of 10,000. Do I have that right, is it's kind of an average --

MR. GOWERS: Human health risk --

MR. BADALAMENTI: Additional.

MR. SIVAK: Additional incidence of cancer over baseline.

MS. PEEL: So is that like a typical hunter? There's people in our neighborhoods and our communities who hunt. They go out a couple of times a year. Is it based on the intensive way these people hunt and use the lands?

MR. MUGDAN: Yes.

MR. SIVAK: It's based on, I think it's 310 days a year, I think, of

hunting.

MS. PEEL: So it really did take into account --

MR. SIVAK: We met with people from the community to come up with the exposure about scenarios that are included in here. They do reflect the behaviors and the culture in the community to the best --

MR. MUGDAN: It also assumes that the hunting and gathering would take place exclusively in the 22 acres that we're talking about here.

MS. PEEL: Okay.

MR. MUGDAN: But those are what we believe to be appropriate assumptions for this community, and conservative as well.

MS. PEEL: Right. I also had a question about the VOC, volatile organic compounds. Do we know that all of those have been released? If you have got some of the sludge that's under water, maybe the -- there's still more that can

be released over time. Certainly we know the paint sludge on the surface, generally on the surface gets dried out, released in the VOCs.

But I have heard with the sludge, you know, at times people can cut it open and it's still there. The VOCs are still there.

MR. MUGDAN: There is still very low levels of benzene in the groundwater immediately near, for example, Peters Mine Pit, close to it. We assume that that comes from past paint sludge deposits.

MS. PEEL: That level may just, you know, keep -- keeping around for a great, long time. Thanks.

MR. MUGDAN: And we have been monitoring the groundwater for about 25 years now. So that will continue in, essentially into perpetuity.

MS. PEEL: I also was surprised that, if my numbers are right, 10 decaliters per milligram were acceptable

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for 5 percent of the population. That's acceptable for 5 percent of children to be lead poisoned?

MR. SIVAK: It's the CDC recommendation.

MS. PEEL: That's a very serious level.

MR. SIVAK: In fact, that's the recommendation of the Centers for Disease Control. EPA's policy is based on that recommendation. It's being reviewed, but it's still current policy.

MS. PEEL: Thank you.

MS. SEPPI: Thank you.

MS. TURNER: Good evening. My name is Dr. Janice Turner. That's J-A-N-I-C-E, Turner.

And in addition -- well, I'm a medical doctor. And in addition, I have an MPH in environmental health sciences. But most importantly, these are my cousins. I'm a citizen of the Lenape Indian tribe of Delaware, and I'm here to support them.

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And what I would like to say is I would like to see a complete removal of the pollution, and I will be sending you my questions in writing. Okay.

Also, I want the EPA to fully investigate the effects of earthquake tremors on your, your preliminary proposals because this is a very active area. I'm on the advisory board for the American Indian Center for Cancer Research Education and Training at UC Davis. And I will work, and put all of my efforts into helping my people.

MR. MUGDAN: Thank you.

MS. SEAMAN: Good evening. My name is Laurie Seaman. And I'm here to stand with the Ramapo people tonight, as a neighbor in the adjacent area of Rockland County. In my work, I represent the people of Rockland County on water issues as one of the leaders of the Rockland Water Coalition.

I teach children about watershed education in schools. I run a waterways

summer camp. I understand that the health of the waters of our earth is the core of the health of us as a human race.

I understand in my work through the water coalition how the days of looking at our water problems as localized issues is over. We have to look at water as a regional concern. What happens here in Ringwood is not just a Ringwood problem. That has to change now. It has been like that for the past 15 years.

I'm calling upon the EPA to change that condition. I heard Chief Mann talk about the potential for this to be a hazard to the Wanaque Reservoir. That is like red alert. That would affect my people, too, because Rockland and Bergen share water. And there's big discussions right now about water sharing agreements between New York and New Jersey. And the name Wanaque Reservoir is part of that discussion.

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New York and New Jersey are just beginning to sit down at the table together in a non-adversarial position on water. This could be terrible.

My question to you. I have been taking notes. If you don't mind, I would like to know what plans does the EPA have for the Wanaque Reservoir? If it's a problem, what's your backup plan for water and how much will that cost?

If you can't get this cleaned up for the sake of the Ramapo and Ringwood people, clean it up for the sake of the EPA. And use Ford's money to do it. Not the EPA money, not the New York State taxpayers, not New Jersey taxpayers. Make Ford pay now.

While it's -- this is a relatively simple problem compared to what that would be. This is a contained issue.

Finally, after all these years, and these people have suffered, there's an identifiable goal here. Go in and clean this stuff up. Not partially.

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Don't explain it in data.

Thank you very much.

I understand why you have data. It's to explain how you don't have to explain all that money. You are going to have to spend the money. These people deserve a blank check. I want you to go back to Ford and say write the check. It's time. This story book needs a final chapter, and the final chapter is these people feel redeemed.

It means they want to feel like they are 100 percent on the way back to health here. Not sort of, 1 percent of the 10 families, maybe if they only hunt on 10 case days a year. That is completely absurd.

I can't believe they are so courteous at this point. Thank you. For showing these people how to be like very healthy people, like I think you are really remarkable people. And I think you are remarkable, too. You have to deal with the problems of the world

in a different way. You have a different language. You have a different means to process everything. But I understand, from being here, you also have a relationship with these people after many years.

I looked at the film, Mann versus Ford last night. I have seen this movie. It breaks my heart that you have to come back to these people after all these years with a somewhat of a maybe message. Please get this figured out. I don't believe that it's always going to be billions of dollars. We're talking millions of dollars. It would be the dignified thing to do for your careers.

This is a double Superfunded site. Unheard of. You are put in charge of it. And it's really no question.

I worked with the Ramapo to get some gardens put in here, a garden idea. I was told in the meeting you can't put gardens in the Ringwood because even

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raised gardens are a hazard. When it rains, everything is toxic. You can't put a garden in there.

MS. SEPPI: Thank you.

MS. PEEL: And lastly, two things I loved hearing .10 community acceptance. There is no community acceptance for this plan for anything short of taking out everything possible and cleaning this up fully. I'm hearing that clearly. I'm just 100 percent clear there's zero acceptance.

And lastly, there's one thing I would like to ask of the EPA, which I haven't heard anybody say tonight. I believe these people, and I, myself am concerned, too. I'm going to write my congresswoman, too.

We need more time. We need more time for written comments. What you presented here tonight is complex, the options and such. And the people want to write informed comments that are really going to be of help to, to you.

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I ask you extend the comment period by 30 days, please.

MR. MUGDAN: On receiving the request for extension of 30 days, we'll give you that extension. New date for public comment, actually, more than 30 days because I think that would make it January 2, which is a silly time.

Anybody have a calendar handy? Before the meeting is over, we'll specify a date. It will be later than 30 days. It will be the end of that week or something like that.

If we could just ask a favor of the drums. Keep it down a bit, so we can hear the speakers.

(Pause)

MS. MINEHEART: My name is Marcy Mineheart. Like I said, I'm 42 years old. I have a lot of medical issues and such because we eat a lot. We have our own gardens and everything. But you know, you guys at EPA failed us so many times.

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You had numerous things to correct. You had plenty of opportunities. And what I'm asking you, I'm 42. I want to see people here. I know the town but Ford didn't. You know who is to blame? You guys are because you allowed it. You have been here so many times. They still failed. They thought they were done. So really, it's the EPA's fault.

I feel Ford should give up some of their sister companies, maybe two or three. Who cares? Two or three companies and they can have this fully cleaned up. So I really blame the EPA for allowing this to go on so many years and us up here letting you. We're trusting you. We used to never let nobody in because of this. Now we let you guys in, and it's still numerous, numerous times.

So I'm asking you, please, a full cleanup is all we ask. So what? Ford has to give away a few companies. Some

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of their sister companies. Who cares?

I can't re-mortgage my house. I can't send my kids to school because I'm adjacent from a Superfund site. When you put them caps on, is my property going to be no longer considered part of the Superfund site? Because I went for an appraisal, and they can't give me an appraisal. I could show you the letter.

You could re-mortgage your house. You can go to the banks and say, hey, I need $10,000, $5,000. I can't. So please, a full cleanup. I have a chance to send my children to school. Please, a full cleanup is all I ask the EPA to do.

MS. SEPPI: Thank you.

MS. SAYLOR: Janet Saylor.

MS. SEPPI: You spoke before, right? Thank you.

MS. SAYLOR: So truth and reconciliation, sort of that Groundhog Day movie. But we don't get to the deep underlying issue. We're sort of doomed

to repeat and repeat and repeat. And one of the issues that's deeply underlying is the history of how Native Americans have been treated in this country and the act of racism. And the -- one -- I mean it's actually a really encouraging thing.

We're all here in this room together, many voices speaking on behalf of the Ramapo. But the reality, if we go back to where things were in 1965 or 1970 is that was a very racist time. And as those truck drivers drove those trucks up the hill, the kids who lived around the road, exposed to the PCBs, and heard the vicious, disparaging comments that the truck drivers made about the people who were living right there, and listening under the covers. And so there's a reality here.

Now, the town was the leaseholder, and the community, after the mines closed, was an unwanted community. They wanted them gone. And this is back in

the 1960s. I'm not saying this is what's happening now. They were a blight. And I'm not saying that, you know, I can't sit here and say the people intentionally dumped, because I don't know that. I don't have any basis for doing that, but at least the possibility is there that they just didn't care. There was a failure of caring about the people.

And there was, there was pressure to make them move. So as a familiar, the familiar, a family moved out of a house, there was pressure to take that house down as fast as possible because that was one more family gone. So I'm saying, the reality of this is we're looking back at where our country was, and we wish to heal that.

And part of the story here is there's some real possibility that this community was targeted. And, you know, I'm not saying the people here have anything to do with that. But the town

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at the time was complicit. The time allowed. The town was not protected.

And unfortunately, there's still something of an adversarial, not very trusting relationship with the people of Upper Ringwood and their own local government who should be looking out for their welfare.

So when the EPA, at the last hour, gets the information from the town that we could go move the recycling center over there, and it's not properly vouched, and you look at the whole history of what's happened here, that does not stand up.

MS. SEPPI: Thank you. Dana.

MS. PATTERSON: Hi. My name is Dana Patterson, P-A-T-T-E-R-S-O-N, and I'm the program supervisor for Edison White Lung Association. I have been involved with the Ringwood Superfund site for about five years. I have gone to every community advisory group meeting since then.

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I think what we have to ask ourselves tonight and what EPA has to ask themselves is: What does environmental justice mean to you? What does true environmental justice in Ringwood mean to you? Because we have a few facts. Right?

We have Ringwood was listed as one in five environmental justice communities, petitioned for the State of New Jersey. So we know Ringwood is an environmental justice -- Upper Ringwood.

Second, we have EPA did an environmental justice assessment. Well, they released it seven -- finalized it seven years later from when it was released. We have that. We know they are an environmental justice community.

So when I asked myself what is environmental justice, I say clean air, clean water and clean land, no matter your race, no matter your income, no matter who you are, that is what you deserve, and that's what you should get.

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And that's the residents of Ringwood, the Ramapo nation and everyone who's been affected by the Ringwood Superfund site should get, environmental justice.

Clean means to restore this land to the original land, so they can hunt and so that they can gather without being poisoned. Clean means leaving no trace of Ford's waste behind; none, zero.

Clean means removing all of it so that the community can have their land back, which is the only way to do that is to require Ford to remove all the waste and do a full cleanup. Clean means clean. Thank you.

MS. SEPPI: Thank you.

MR. SPIEGEL: Bob Spiegel, Executive Director, Edison Wetlands.

Two quick issues. One is during your presentation, and I just heard you talking about it again, which was the biota. They said they found levels of lead that were acceptable in the biota,

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that -- and the residents consume this biota at a very much disproportionate rate. Is that a correct assessment of what EPA is saying in this community?

MS. SEPPI: That's really probably more a question for --

MR. SPIEGEL: As somebody who does risk assessment, the risk assessor, are you saying levels of lead that are found in the biota are acceptable levels of lead for the community to consume?

MR. SIVAK: We -- I believe that the elevated levels of lead were associated with the carrots.

MR. SPIEGEL: And also the small mammals.

MR. SIVAK: The small mammals were not included in the ingestion scenario. The small mammals, the voles, the shrews and mice were evaluated whole body to determine whether or not the contaminant could get into the food chain. And so they were analyzed, fur, claw, tooth, whole body, bone, everything.

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MR. SPIEGEL: So you just didn't do the muscle?

MR. SIVAK: Not for the small mammals, because we found no evidence that that would constitute a significant portion of the diet, and that was not the purpose of that, of that trophic level of the food chain.

MR. SPIEGEL: So you did evaluate the small mammals for consumption.

MR. SIVAK: We looked at squirrel, rabbit, wild turkey and deer, based on or conversations with the community at the CAG, based on all the feedback we got and based on all the work that Mark Springer --

MR. SPIEGEL: Sure. I'm familiar with it.

But you did find there was level in the biota, and there was lead in the carrots and there was lead in one -- you only tested three deer, correct? And there was only lead -- there was lead in one of the livers of the deer. I think

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there -- wasn't there three deer? Because you couldn't catch --

MR. MUGDAN: We need to have -- he won't be able to pick this conversation up.

MR. SPIEGEL: SO there was three deer tested. They found lead in the liver of one. The question I'm getting to, your stake in the community that the lead levels in these animals and the biota is an acceptable level for consumption, or at least in the carrots, you are making that assumption, right?

MR. SIVAK: No. We're saying that the carrots -- I think it was in the slide that Joe put up there, that the carrots had an elevated -- or the produce.

MR. GOWERS: Basically, we did find elevated levels of lead in the wild carrot.

MR. MUGDAN: The basis of our taking action is the risk that is presented or that, to human beings who

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hunt and gather. That is the risk that we have identified.

MR. SIVAK: Carrots were collected from areas that have since been remediated through removal actions.

MR. SPIEGEL: Is there an acceptable level of lead by which a child or adult can consume? Just a yes or no. I don't need the -- an acceptable level of lead somebody can consume safely?

MR. SIVAK: Yes. There is a level at which we will not take an action.

MR. SPIEGEL: That doesn't mean that it's safe. Is there a -- any amount of lead that somebody can consume safely?

MR. SIVAK: No. The level -- lead is a chemical for which we have not identified a level where there -- we can't identify an adverse -- but there is a level at which we will not take an action through our policy.

MR. SPIEGEL: So there is no safe

level to consume. That's all I wanted to know.

Now, that leads me to the issue of the O'Connor Disposal Area again. So the reason really for the action in O'Connor is because the residents use that as a food source, and they gather and they hunt and they collect carrots, and they use it and they utilize it as a food source. So EPA's remedial action there is, as much to address environmental threat as it is to address a food source, a cultural food source for the community that they have used for generations. So that you're prohibiting the carrots from being ingested. You're prohibiting potentially other small mammals from being caught and ingested.

So how could it be acceptable, if that is the reason for an action at the O'Connor Disposal Area so that you can have a safe food source, carrots that are not contaminated with lead, other

mammals that are not contaminated with lead, that the residents could theoretically use as a food source. You take that away from them and then you cover it with a recycling center. You are then depriving the folks here of a cultural thing that is meaningful to their religion, to be able to go out and hunt and gather food and to collect food. That's part of the culture, so you --

EPA, by even considering the removal of that, instead of the restoration of that for their hunting and their cultural way of life, you are considering removing that, taking that away, and allowing instead the, not just the poisoning of the people, but the removing of the food that they use, that they survive on because that was the whole purpose of the biota study to begin with, because you knew the people were collecting the biota. You knew they were consuming it. And EPA was

concerned about the level of chemicals that were being ingested.

Now you are considering a path of cleanup that not only derives them of that, but deprives them of a way to get sustenance and it's a culture way of life. You cannot do that. You cannot deprive somebody of their religious beliefs or their cultural beliefs and their ability to go out and collect food and collect animals, hunt animals, if that's something they have done for hundreds of years here. Hundreds of years. Not five years or ten years.

We see, as people, as North Americans, we look at things in 10, 20, 30 years because that's what we understand. But from a U.S. EPA, you have to look at this as a cultural and a religious thing that is taking place. These -- they have lived here for 300 years. They have a religious and a sacred connection to the land that you and I and everybody here will never

understand. Okay.

And if you take away their ability to hunt, to gather, to get food for their families, and you allow it instead to be turned into blacktop, instead of restored, which is what you told us you were going to do, you are going to deprive them of their ability to worship, to have religious beliefs and to also practice things that are culturally meaningful to them, and -- all of us.

Because what happens to them up here has a rippling effect. When you take away somebody's religious ability, when their cultural ability, their ability to practice something that's important to them, a belief system, that takes it away from everybody. And I ask you go back and really rethink this consideration.

I would not even allow this consideration to be moved forward, because you should restore this ability

for the community to hunt and gather safely and practice their beliefs safely without a threat, without having to try to go around cans, bottles and other recyclables that s you are looking to put on this property instead of actually cleaning it up.

MS. SEPPI: Thank you. I think we understand your comment. Thank you.

Chief.

CHIEF MANN: I'm going to be Vincent Mann right now.

MS. SEPPI: You are going to be Vincent Mann now?

CHIEF MANN: Chief Mann asked a question before, and he didn't get an answer, and that was where Mathy was, why he wasn't here.

I know that you guys must have talked to him prior to coming here. So can I have an answer to that question? As he came to -- what we have to use as a community center.

MR. MUGDAN: Let me explain that.

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Chief Mann is speaking about Mathy Stanislaus, who's Assistant Administrator for Solid Waste and Emergency Response, the senior person at the EPA, Washington D.C. headquarters who manages and oversees the Superfund.

He was here on two occasions, February and June. It would be highly extraordinary or unusual for him to attend this kind of meeting. He never does. That's not part of his job. That's my job.

CHIEF MANN: He said he would be here.

MR. MUGDAN: He said he would be here in June, and he was here.

CHIEF MANN: If I'm not mistaken, we have somebody who could probably pull it up somewhere to actually show that he said that he would be here and make that decision.

MR. MUGDAN: He did come here after the Revenue Review Board had rendered its reaction -- and that was in

June.

CHIEF MANN: When did we find out --

MR. MUGDAN: We will convey to him. You will recall that he was here February 11th and June 8th, two occasions.

On February 11th we asked that if we were heading toward a decision on the Cannon Mine Pit -- and on the O'Connor Disposal Area, as we had clarified at that time. It was to remove all material, and that is still our preferred alternative. Let me stress that. Our preferred alternative --

CHIEF MANN: Unless the Town of Ringwood gets to you in time.

MR. MUGDAN: We do not own the land. We do not control the land. The Town of Ringwood owns that particular parcel. We don't have the right to say that it must be kept in perpetuity as open space.

It was our assumption that that

would be the future land use because we had never heard anything otherwise. That's why we chose to make full removal.

CHIEF MANN: Next question. Where is Riche Outlaw?

MR. MUGDAN: Not here.

CHIEF MANN: I don't know what she looks like, because I have asked to see her for a year and a half.

MS. SEPPI: Chief, you want to explain who Riche Outlaw is?

CHIEF MANN: I don't even know if Riche Outlaw actually exists. I'm being honest with you. I'm being honest with you.

Let's think about this. I mean, a year and half, in two weeks five Ramapo have died. One Ramapo who was in remission with cancer has it back.

We have just had two babies born. One of them is from my cousin who had to be put on bed rest and special medication in order to make sure that

that fetus would survive.

And I mean -- this is real, and I don't know where this stuff goes. I really don't.

By the way, there's an elephant in the room right here behind the Snapple. Just in case you are wondering, that's an elephant.

Has anybody in here every really looked at the map of New Jersey? When you look at it, it resembles a Native American. And before the lines were drawn and we were forced to live on both sides, and unfortunately, in the late 1600s. And then actually until 1884 or '9, until the border was definitive because of inadequate equipment, our people paid taxes in two states for roads and schools, neither of which came.

How it did come to us was by the good people that came here and supported us tonight. Their ancestors, and I'm sure yours as well because you are good

people. I know you are.

But on top of that map there used to be an extension that went off the top of Sussex. And if you think that looks like a Native American, you should have seen it when it had the feathers. And it's the truth. I'm speaking the truth. And it's important. It's important to us. And it should be important to this community.

The Town of Ringwood should be proud to say that the Native Americans who were here before their ancestors came are still here. And we're still supporting the town, right, because we pay taxes. And one thing that not many people know is that as a kid, I grew up playing in the stuff over here.

And even though I moved away, I decided to give up a 23 year life to come back here and fight for my people, and I don't say that lightly. That's the truth. I have unexplained illnesses. I'm not sitting here and

saying this is where it comes from. I have said many times before, if you are independently wealthy, and you have a whole community. I don't mean 866 souls but 149. Not in 209 homes, but in 47 or less. If they are independently wealthy and they never worked a day in their lives, and you guys pick up a cancer cluster based upon inadequate information, which this all is based off of that stuff, I don't really get that yet. But -- if that was the case, right, you couldn't go to their job to see if they took their finger and licked that little dial and stuck it in their mouth to see whether or not they got throat cancer.

So if you eliminate that, which you can do, you at that point would have to go into the homes, into the environment, which you guys kind of have done. And even though we're sitting here talking about the remediation, we still are not talking about the people.

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And the only ones that are speaking about people are us. That's not to say that you don't have that in your heart, or the Revenue Review Board doesn't have that at their heart. We understand the bureaucracy.

The fact remains is that, you know what? We are people who are breathing and we're living, and we have -- our ancestors have contributed more to this country than anybody else in this room. I will guarantee it. It's the truth.

My grandfather, Abram, marched next to George Washington. It's the truth. If you don't believe it, you can go take my genealogy and do it yourselves. My last name does not come from Dutch or German. My last name comes from Manns, who was a chief.

And if you take that knowledge, then you will understand I'm not just the chief, I'm also hereditary, responsible for 42,000 acres, Sloatsburg, New, York and another one in

the middle of the mountains that one day we'll go to visit because that needs to be cleaned up as well.

I like you guys, I really do. You know, I'm sure that you guys have an affection for us, too. But the reality of it is that we're still sitting here sick and dying, and it's an impossibility to leave that stuff in the earth for all the people who are down here, and it's an impossibility for that to be left in the ground and for us to have the quality of life we're supposed to have by law. And we didn't make it.

But we, as the people who are affected by this, not just us Ramapos, everybody. I go around with paint in my car. I can't say I got sick from that in my car. But I will tell you this. It was a very closed area.

My friend, Mr. Zimmerman, who is no longer a part of our cadence, got somewhat candid one day. You know, the reality is that every single person who

is in an important position, with an authority to speak on something or an authority, a municipality or authority at the EPA, Mr. Terry from the Environmental Justice Program, all know that all of that stuff in that ground is no good for us. And to leave it there now -- makes up for nothing. We're still sick and dying, and yet we still don't have help.

If we broke that down into one-third of the people who live within that box have cancer, that is a cancer cluster that's amazing. And still nobody -- I'm sure everybody is hearing it, but nobody is doing anything about it. They can't continue to die.

There is no option on the table to take our people and move us to the other side of the mountain. So what do we do? We have to go on with our lives like nothing is wrong, which is the same exact thing that everybody else in this whole process is doing because of a

document that was done.

Because you know what they said to us at the church? We can't go down lower than one mile radius. When they drew that on that piece of paper, it's not even a circle. So even that's fictitious.

And they couldn't go down smaller than a one mile radius in the Census records because then they'll know our names. It's too personal. I can guarantee you everybody who stood here tonight and spoke, the ones that all sat in the back which are Ramapos, very distinguishable by the way they look, would not get up here and speak.

So those of us that got up here to speak spoke for them. It's a very honorable thing for us to do. You know, you guys got upset with me because you thought that I accused you of not caring. And that is also a falsehood because I -- trust me. I don't think that you don't care. I know you do.

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You, particularly. I mean you spend more time on our people than almost probably Bob.

That's not true.

So we can sit here, and I can talk to you about it for the next 20 years. Except I probably don't have that, because based on upon the statistics we're putting together now, I only have 10.

When Mr. Evan Pritchard sat up here and spoke, and said that our people used to live to over a hundred years old. That's the very truth. We had an aunt that did, right? Aunt Anna. 104.

So my aunts, my elder -- my cousin is my elder. Two. Who else we got? Me. You know.

We have a non-Ramapo who is an honorary Ramapo move into our community to help us. Gave up a life that us Ramapos could only ever dream of. She gave up that life to come here to help us fight. It's going.

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I would think you know by now that we're not going to lay down. No more. Thank you for allowing me to speak.

MS. SEPPI: Thank you.

(Applause)

MR. CHAPIN: Rich Chapin. I will be very brief. One question.

If the township wants to redevelop the piece of ground that's now known as the O'Connor Disposal Area, that lot and block -- the EPA, and use it as a recycling center, why is it necessary for the waste to remain in place for them to do that? Why must that waste remain in place for them to do it? Why could not the waste be removed and then a facility be built there? It's only an engineering problem.

MR. MUGDAN: That's correct.

MR. CHAPIN: Thank you.

MS. SEPPI: Thank you, Rich.

Do we have anybody else that would like to make a comment? It's 11:30. My goodness. One more quick question.

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MEETING PARTICIPANT:

Anthony. I hope you guys understand, after hearing people over here tonight that we don't want the recycling moved. I was told to come to this meeting because this was for the public to come and state.

MS. SEPPI: That's correct.

MEETING PARTICIPANT: Don't let the Town of Ringwood dupe you into anything like that, please. You can't -- don't let them do it. If it's up to us, we don't want it. We want you guys, you guys to get -- if it's going to be done, we're not going to do it. You guys have to do it. Leave it alone. Leave the recycle.

I mean think of the money. It don't make sense. Think about it. It don't make sense to move it from one side of the road to the other. They have got something planned. Don't do it.

MS. SEPPI: Thank you, Anthony.

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MEETING PARTICIPANT: You heard the people, what we say. Right?

MS. SEPPI: Yes. We do have to --

MEETING PARTICIPANT: I --

MR. MUGDAN: You are the last speaker, okay? Thank you.

MS. SEPPI: Yes, we really do have to --

MEETING PARTICIPANT: One last thing I am going to say, and I have a loud voice. I'm only 17 years old, and I probably know more than you guys related to biological stuff, references from video games versus real life.

We're trying to prevent World War III. If you have ever seen -- I think it's called -- what is that -- zombie, zombie biohazard? It's called biohazard. Literally, what you guys are doing, if you don't clean it up, it will become biohazard.

MS. SEPPI: Thank you very much, everyone, for being here tonight. It's been a long night. We have heard some

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really good comments. We have a lot of questions. I want to tell you the next --

MR. MUGDAN: Let me say we had a request earlier for an extension of the public comment period. During the break, we looked at the calendar. We'll not just have a 30-day extension. We're going to end up being 90 days. We're going to go to Monday, January 6. The close of business Monday, January 6th is the deadline for written comments.

Thank you. Now let me let Pat say one more thing.

MS. SEPPI: I just wanted to say thank you.

Remember the next document you will see from us is our Record of Decision. That's going to be the document that identifies the cleanup that we have chosen. And attached to that will be the response and summary which will address your comments, your questions, your concerns, everything

that we heard here tonight.

I can't give you the exact time we'll have that Record of Decision yet. I think we have a lot of comments to address. When it's available, I will make sure everybody gets it.

Thank you again, everyone.

(Time noted: 11:34 p.m.)

C E R T I F I C A T E

I, DOUGLAS WINTER, a Shorthand Reporter and Notary Public, do hereby certify:

I reported the proceedings in the within-entitled matter, and that the within transcript is a true record of such proceedings.

I further certify that I am not related, by blood or marriage, to any of the parties in this matter and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 20th day of November 2013.

DOUGLAS WINTER

ATTACHMENT D – Written Comments

Joe Gowers
Remedial Project Manager, U.S. EPA
290 Broadway, 19th Floor
New York, New York 10007-1866

ANDREW RUNNINGWOLF 1/29/14
70 RED CEDAR LN
STATEN ISLAND, NY 10309

I FEEL WAITING TILL SPRING IS FOOLHARDY
BELOW ~~5FT~~ 5 FEET OF FROZEN GROUND IS
UN FROZEN GROUND WHERE CONTAMINANTS ARE
STILL FLOWING

A R W

BOROUGH OF RINGWOOD

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Borough Manager/Director of Public Works
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Borough Clerk/Deputy Borough Manager
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February 5, 2014

Mr. Joseph A. Gowers, Project Manager
Southern New Jersey Remediation Section
USEPA Region II
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: Ringwood Mines/Landfill Site – Ringwood, New Jersey
Borough of Ringwood's Comments on Sept. 30, 2013 EPA Proposed Remedial Action Plan for Three Land Areas of Concern (Cannon Mine Pit, O'Connor Disposal Area and Peter's Mine Pit)

Dear Mr. Gowers:

On behalf of the Citizens of the Borough of Ringwood, please accept the enclosed submission (including attachments) from the Ringwood Council and a copy of Resolution No. 2013-337 dated December 17, 2013 authorizing the submission to the EPA, which sets forth the Borough's comments on the September 30, 2013 EPA Proposed Remedial Action Plan ("PRAP") for the three Land Areas of Concern, Cannon Mine Pit, O'Connor Disposal Area and Peter's Mine Pit.

This submission is made as part of the CERLCA process providing for an open public comment period for the PRAP, and constitutes "Community Acceptance", one of the several CERCLA criteria mandated to be considered by the EPA during the remedy selection process.

If you or anyone at the EPA has any questions about the Borough's submission on the PRAP or would like to meet with the Borough, please do not hesitate to contact me.

Thank you for your consideration of our submission and the concerns and comments expressed by the Borough, as the host municipality, on behalf of our 12,000 residents.

Regards,

Scott Heck, C.P.W.M.
Borough Manager/DPW Director

Enclosure

Resolution Number
2013-337

BE IT RESOLVED that the Municipal Council of the Borough of Ringwood hereby authorize the Borough's Special Environmental Council and Environmental Engineer to submit on behalf of the Governing Body of the Borough of Ringwood comments to the EPA's Proposed Remedial Action Plan which comments were summarized and discussed in Executive Session.

Linda M. Schaefer

LINDA M. SCHAEFER, MAYOR

I hereby certify that the above Resolution was adopted by the Municipal Council of the Borough of Ringwood at its Business Meeting of December 17, 2013.

Kelley A. Rohde

KELLEY A. ROHDE, RMC
BOROUGH CLERK

Council Member	Motion	Second	Ayes	Nays	Abstain	Absent
Schaefer			X			
Speer			X			
Anderson			X			
Davison			X			
Marsala	X		X			
Martocci		X	X			
Noonan			X			

Ringwood Mines/Landfill Site – Ringwood, New Jersey

Borough of Ringwood's Comments on September 30, 2013 USEPA Proposed Remedial Action Plan for Three Land Areas of Concern (Cannon Mine Pit, O'Connor Disposal Area, and Peters Mine Pit)

Ringwood, Passaic County, New Jersey

Submitted to:

The Southern New Jersey Remediation Section

U.S. Environmental Protection Agency Region II

Submitted by:

Mayor and Council

of the Borough of Ringwood

February 5, 2014

1.0 Introduction

As the host municipality for the Ringwood Mines/Landfill Superfund Site (Site), the Borough of Ringwood's (Borough's) first priority is to ensure the Site is thoroughly investigated and properly remediated for the protection of human health and the environment both in the short and long term, and as such the Borough's objectives are aligned with the United States Environmental Protection Agency's (USEPA) selection of a remedy which will be:

- Protective of human health, environment, community and residents;
- Technically justified and appropriate for the documented risks;
- Can be implemented in a timely manner;
- Does not cause further risk or harm to the environment, residents, existing infrastructure, or the community; and
- Least disruption/disturbance to the community and its residents.

After consultation with its environmental expert, Excel Environmental Resources, Inc. (Excel), the USEPA, New Jersey Department of Environmental Protection (NJDEP), Ford Motor Company (Ford), and Ford's environmental consultant, ARCADIS, **the Borough is in agreement with USEPA's Preferred Alternative 3A, Permeable Engineering Cap for the Cannon Mine Pit (CMP), because this remedy is fully protective, will achieve long-term risk reduction with less impact on the community and at a cost less than other protective alternatives (See Section 3.0 for further detail).**

With respect to the O'Connor Disposal Area (OCDA), the Borough disagrees with USEPA's Preferred Alternative 5A (Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings), but agrees with Preferred Contingency Alternative 4A (Site Grading, Consolidation of the Fill Material, Construction of a Permeable Engineering Cap, New Borough Recycling Center). The condition of the area following Preferred Alternative 5A presents significant concerns since the excavation will result in a steeply sloping crevasse that would only be covered with six inches of topsoil. **The land would not be backfilled to current levels since restoring to existing grades is not a remedial action requirement under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or NJDEP regulations. This excavation would therefore result in an increased risk to human health and the environment and public safety as discussed in further detail in Sections 4.1 and 4.2.**

Conversely, the selection of Alternative 4A for the OCDA, Site Grading (and Consolidation of the Fill material) and Construction of a Permeable Engineering Cap, is the only remedial action alternative that is fully protective of human health and the environment and results in a level ground surface so the land can be beneficially and productively reused. **As further detailed in Sections 4.3 through 4.7, this alternative is fully protective of human health and the environment, minimizes the uncertain and unwarranted additional risks to human health and the environment associated with excavation of fill below the water table and transportation of this material through the Ringwood community, and enables preservation and/or reuse by**

the community of the existing land where the existing outdated Recycling Center is currently located. The planned construction of a state-of-the art Recycling Center on top of the remedial cap provides added protection to human health and the environment while incorporating the use of USEPA's presumptive remedy for landfilled areas, which is capping, and fulfills USEPA's public policy of beneficial reuse of a former Superfund Site.

With respect to the Peters Mine Pit Area (PMP), the Borough agrees with USEPA's preferred alternative of construction of a permeable engineered cap which is consistent with USEPA's presumptive remedy for landfills, but disagrees with excavation of Historical Fill surrounding the Peters Mine Pond since the excavation of fill within the pit itself creates undue risks without providing any added protection of human health and the environment when compared to the consolidation and capping remedy.

As further detailed in Section 5.0, excavation within the original mine pit creates unnecessary and unpredictable risks to the deep inner mine workings as well as disturbance and introduction of finer grain materials to the groundwater. Since the risks posed by soil in the PMP is direct contact and ingestion, both of which are fully addressed through cap construction, excavation provides no further environmental protection benefit but comes with great risks (above) coupled with added risks related to potential releases of dust laden with contaminated fill and increased truck traffic generated by transporting excavated material for offsite disposal.

2.0 Facts Common to All Three Land Areas of Concern that Must be Seriously Considered when Determining the Appropriate Remedial Action for this Site

Before providing a detailed rationale regarding the remedial action of each individual Land Area of Concern, the following sections discuss issues common to all three Land Areas of Concern (AC) that must be considered when determining the appropriate remedial action.

2.1 Significant Difference between Surficial Paint Sludge (SR Areas) and Three Land Areas of Concern (PMP, OCDA and CMP)

The Borough notes that there is a definitive distinction between the historic occurrence of paint sludge on the surface of the Site where Ford has previously completed removal actions (this material has been excavated and transported for offsite disposal, referred to as the "Sludge Removal", or SR Areas) and the conditions within the three land ACs that are the subject of the USEPA Proposed Remedial Action Plan (PRAP): the Peters Mine Pit, Cannon Mine Pit, and O'Connor Disposal Area. As the agency is aware, paint sludge, soil and other waste materials have been removed from 15 SR areas and from within the Peters Mine Pit and O'Connor Disposal Area. All of this material was excavated by Ford and transported for offsite disposal at a permitted facility between the late 1990's and 2012. The analytical results of post-excavation soil samples confirmed the effectiveness of these removal actions and the achievement of the most stringent soil remediation standards for all constituents of concern within each area.

2.2 Any Residual Contamination in Three Land Areas of Concern (PMP, OCDA, CMP) is Low Level Threat Waste

Approximately 2,200 tons of this paint sludge was removed during exploratory test pit activities within the O'Connor Disposal Area and paint sludge was not encountered within the Cannon Mine Pit and only sub-grade pockets or accumulations of paint sludge were encountered within the Peters Mine Pit. The findings of the extensive investigation and characterization of each of these three land ACs indicate that the detections of soil exceedances within each land AC are sporadic and infrequent and the concentrations in soil are variable but generally low and would meet the USEPA definition of "Low Level Threat Waste".

USEPA defines "Low Level Threat Waste" as waste that poses a relatively low long-term threat in that they exhibit low toxicity, low mobility in the environment, or are near health-based levels (USEPA, 1991). The USEPA's "Presumptive Remedy" (or preferred technology) for Low Level Threat Waste, especially when it occurs in conjunction with non-hazardous solid waste from municipal sources, is containment using Engineering Controls (i.e., capping) and an Institutional Control such as a Deed Notice which is deemed protective of human health and the environment and consistent with remedial action objectives for landfills such as those at the Ringwood Site (USEPA, 1991; USEPA, 2012).

As outlined in each of the three Feasibility Study (FS) Reports, excavation and offsite disposal is another feasible remedial action alternative which has been considered for the three land ACs as part of the FS process to date. Excavation and disposal are typically recommended for remedial action only when there is "Principal Threat Waste"[1] that is an active source of adverse impacts to groundwater and other remedies will not effectively control the source material (USEPA, 1997).

2.3 By USEPA's Own Definition, There is no Principal Threat Waste in Peter's Mine Pit, O'Connor Disposal Area, or Cannon Mine Pit

Given that **none** of the fill/waste material in any of the three land ACs at the Site is "Principal Threat Waste", the advantages and disadvantages of excavation of any kind, including excavation of "historic fill" surrounding the Pond within the Peters Mine Pit included in Alternative 6A or excavation and offsite disposal of all of the fill within the O'Connor Disposal Area as specified in Alternative 4A are extreme and highly intrusive remedies that need to be fully and carefully vetted and evaluated, especially given that, **under existing "pre-remediation" conditions, groundwater quality poses no risk to any human or ecological receptor** (ARCADIS, 2012a-2012k; USEPA, 1991).

[1] "Principal Threat Waste" is defined by USEPA as source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur.

2.4 USEPA's Own Presumptive Remedy is Capping of Landfills when there is No Principal Threat Waste

In fact, the Borough is opposed to excavation for either the O'Connor Disposal Area or the Peters Mine Pit Area given the additional risks to the environment and human health posed by such activities when the USEPA's presumptive remedy for landfills which do not contain Principal Threat Waste is use of an Engineered Cap. An Engineered Cap is equally protective with significantly less uncertainty and potential risk and unnecessary future liability risks to the Borough related to the increased truck traffic, vehicular accident risk, dust generation, and possible instability to Peters Mine Road related to excavation of the O'Connor Disposal Area.

Capping also poses significantly less uncertainty/risk to the stability of the extensive network of underground mine shafts in the case of the Peters Mine Pit as further discussed in Section 5.1 of this document and safety concerns posed by conditions after an excavation remedy at the O'Connor Disposal Area.

2.5 Expert Traffic Study Concludes Excavation Remedy Will Increase Traffic, Causing Increased Risk of Injuries, Including Fatality; Ringwood Police Chief is Concerned about Public Safety with Increased Traffic Caused by Excavation Remedy

Based on an analysis of traffic safety impacts associated with the excavation of impacted soil from the Site performed by Sam Schwartz Engineering and documented in a report dated December 4, 2012, "complete removal of the landfill materials will statistically result in approximately 14.7 crashes, including 2.5 injuries, and 0.07 fatalities."

As further expressed by Mr. Bernard F. Lombardo, Chief of Police for the Borough of Ringwood, in a letter dated September 10, 2013, there is great concern regarding the impact that the remedial action will have on emergency response and public safety. Mr. Lombardo states that the "increase in traffic, without any improvement with the traffic control…will result in an increase of wait times at both intersections as well as impede emergency response from Borough Hall and negatively impact public safety. From an emergency management perspective, any and all measures should be taken to minimize the amount of truck traffic and duration of time needed for remediating the superfund site." See attached letter dated September 10, 2013 from Chief Lombardo provided as Attachment A.

2.6 There has Never been any Contamination in The Wanaque Reservoir Caused by the Ringwood Site

Throughout the process, some members of the public have expressed concern about the impact the Ringwood Site may have on the Wanaque Reservoir (which is over 1.5 miles away from the Site). The nearly thirty (30) years of groundwater data collected from the Site, under the supervision and with the approval of the USEPA and NJDEP [and for the past several years with the approval of Richard Chapin, the Technical Advisor of the Citizen's Advisory Group (CAG)], documents that any groundwater contamination associated with this Site has not

reached even the sentinel monitoring wells located downgradient of the Site and upgradient of the Wanaque Reservoir, let alone reached the Wanaque Reservoir itself.

It should be noted that much of this groundwater data was collected **before any remediation of the Site began** (i.e., removal of the 22,000 tons of paint sludge and impacted soils). It is unreasonable, and technically unjustifiable, to believe that **after remediation of the Site** (including capping remedies for all three Land ACs) that groundwater impacts to the Wanaque Reservoir would now suddenly occur.

3.0 Cannon Mine Pit Area: Borough Agrees with USEPA's Preferred Alternative 3A, Permeable Engineering Cap

In USEPA's PRAP, the agency selects Alternative 3A, Permeable Engineering Cap, as the preferred alternative for the Cannon Mine Pit Area stating that USEPA expects this alternative "to achieve a comparable level of long-term risk reduction with less impact on the community and less cost than other protective alternatives". Sporadic, infrequent, and generally low concentrations of various constituents, including metals, Polycyclic Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and Polychlorinated Biphenyls (PCBs) have been reported within the soil/fill material within the Pit with no pattern exhibited by the distribution. Concentrations are consistent with UESPA's definition of "Low Level Threat Waste" and do not rise to the level associated with "Principal Threat Waste" (USEPA, 1991).

The groundwater analytical results generated over more than 20 years of monitoring for the Cannon Mine Pit Area indicate no adverse impact to groundwater whatsoever within the Cannon Mine Pit Area (ARCADIS, 2012a). Concentrations of iron or manganese and other naturally-occurring secondary metals are consistent with upgradient background concentrations and only sporadic detections of any constituents of concern have ever been reported.

Based on the results of the extensive remedial investigation activities completed within the Cannon Mine Pit Area, the Borough agrees with the agency's selection of Alternative 3A, a Permeable Engineering Cap, because this remedy is fully protective, will achieve long-term risk reduction with less impact on the community and at a cost less than other protective alternatives.

4.0 O'Connor Disposal Area: Borough Disagrees with USEPA's Preferred Alternative 5A (Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings) but Agrees with Preferred Contingency Alternative 4A (Site Grading, Consolidation of the Fill Material, Construction of a Permeable Engineering Cap, New Borough Recycling Center)

In USEPA's PRAP, the agency selects Alternative 5A, Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings, as the preferred alternative for the O'Connor Disposal Area "because it is expected to achieve substantial and long-term risk reduction through the permanent removal of contaminated fill from the Site" and would "allow the portion of the site

that is most readily accessible to the residents to be used without restriction". What is not acknowledged, however, is that the resultant land area following excavation would be a steeply sloping crevasse that would only be covered with six inches of top soil. The land would not be backfilled to current levels since restoring to existing grades is not a remedial action requirement under CERCLA or NJDEP regulations.

4.1 Excavation = Increased Risks to Human Health and the Environment and Public Safety

As a result of the Alternative 5A excavation activities, the land would steeply grade downward from Peters Mine Road (the depth of excavation immediately adjacent to a portion of Peter's Mine Road would be up to 20 feet deep) into a low-lying wetlands unsuitable for any productive future use by the residents of Ringwood or by the Borough, the owner of the property. This steeply sloping crevasse would be located immediately adjacent to several hundred feet of Peters Mine Road creating a potential hazard to the long-term stability of the road (and underlying utilities such as the single-source water supply line that is located within the road) as well as a potential hazard to drivers utilizing the roadway.

4.2 The resultant land condition would be a barrier to any productive or beneficial reuse of the land by the property owner, the Borough, and by residents due to the slopes and wet conditions that would exist.

Just as the USEPA cited the potential disturbance and disruption of the remedial cap by trespassers and ATV riders due to lack of security and measures to limit access to support not selecting the capping remedy, the Borough remains concerned about unauthorized trespassers such as ATV and motor bike users who would be attracted to this vast, vacant steeply sloped crevasse of land, creating real public safety issues.

In addition, as accurately stated by USEPA in the PRAP, excavation of fill materials within the O'Connor Disposal Area involves removal of approximately 110,500 cubic yards of material with the option of potentially excavating an estimated 73,100 cubic yards of underlying mine tailings for reuse as backfill elsewhere on the site that resulted from the historic use of this area as a mining sluice pond many decades ago. The result of these activities would be an estimated 12,519 truck trips through the Ringwood community which, as USEPA states in the PRAP, "presents the greatest potential for community and worker exposure to contaminated material" (PRAP Pg 21). The Borough does not agree with selecting a remedy that introduces additional risk to the Ringwood community given there is no commensurate added protection associated with full excavation compared to construction of an engineered cap.

4.3 Consolidation and Capping Remedy = Full Protection of Human Health and the Environment and Beneficial Reuse of Property without Undue New Risks

USEPA also states in the PRAP that, Alternative 4A, Site Grading (and Consolidation of the Fill Material) and Construction of a Permeable Engineering Cap, could be selected as a contingency

remedy for the O'Connor Disposal Area given that the Borough intends to redevelop this land for use as a state-of-the art Recycling Center. Consolidation and capping is the only remedial action alternative that is fully protective of human health and the environment and results in a level ground surface so the land can be beneficially and productively reused. Contrary to statements made during the Public Meeting on November 7, 2013, unless hundreds of thousands of yards of clean fill were imported to fill the crevasse created by excavation of all the fill material, there would be no way to beneficially redevelop the O'Connor Disposal Area if the excavation remedy alternative was implemented.

Based on the data generated by the extensive Remedial Investigation (RI), risk assessment, and paint sludge removal action completed within the O'Connor Disposal Area, the Borough finds that this alternative is fully protective of human health and the environment, minimizes the uncertain and unwarranted additional risks to human health and the environment associated with excavation of fill below the water table and transportation of this material through the Ringwood community, and enables preservation and/or reuse by the Borough of the land where the existing outdated Recycling Center is currently located.

4.4 Construction of New Recycling Center on Top of Remedial Cap Provides Added Protection to Human Health and the Environment

As USEPA acknowledges, redevelopment on top of the Engineered Cap once constructed on the O'Connor Disposal Area also provides **additional protection** of the underlying two foot remedial soil cap through installation of asphalt-paved surfaces that will be incorporated into the new Recycling Center design. Further protection of the cap and the Recycling Center facility is achieved given that the Center will be fenced as well as occupied, operated, and maintained by Borough personnel. There will also be other provisions made for the security of the facility to dissuade and minimize the potential for unauthorized access to the land containing the Engineered Cap both underneath and on the surrounding side slopes of the new Borough Recycling Center.

The selection and implementation of Alternative 4A, Consolidation and Construction of an Engineering Cap, followed by the productive and beneficial reuse of the capped land by the property owner, the Borough of Ringwood, incorporates use of USEPA's presumptive remedy for landfilled areas, which is capping, and fulfills USEPA's public policy of beneficial reuse of a former Superfund Site. Moreover, it recognizes that the Borough as property owner should not be prevented from being able to beneficially and productively reuse this land and Alternative 4A is the remedy consistent with the anticipated future reuse of the property.

4.5 Borough's Consideration of Relocating Recycling Center to O'Connor Disposal Area

As early as the Borough's first meeting with the USEPA Region 2 Team, including Director Walter Mugdan, in January 2011 (and again at a subsequent meeting in January 2012), the Borough expressed its concerns to the USEPA about a full excavation remedy for the O'Connor

Disposal Area (whether including the mine tailings or not which underlie the OCDA from its use during mining operations as a sluice pond). Director Mugdan asked Borough Manager Scott Heck why the Borough would not want to have a ballfield at OCDA post-excavation with unrestricted use. What USEPA failed to realize is that the resulting post-excavation OCDA land would be unsuitable for a ballfield or any other practical re-use by the Borough due to the steeply sloped crevasse created by the scope and depth of the excavation proposed by USEPA.

At that first meeting in January, 2011, the Borough advised USEPA that it was considering relocating its Recycling Center to the OCDA (across the way and further down Peter's Mine Road from the Borough's existing Recycling Center which is outdated and insufficient to meet the needs of the Borough and its residents). The Borough raised it again during a follow up meeting with USEPA, including Director Mugdan, in January, 2012. In the Borough's May, 2012 submission to the USEPA during the first National Remedy Review Board (NRRB) process (which, USEPA unilaterally postponed and re-scheduled for June, 2013), on Page 13, the Borough stated among the benefits of a capping remedy instead of an excavation remedy for OCDA, "Enables beneficial reuse of the area based on the flatter top cap design of the engineered cap to enable any future use consistent with zoning and Borough planning for the area."

The Borough believed that the NRRB process (both in 2012 and 2013) and a closer examination by the USEPA of the Borough's submissions including data supporting the Borough's technical positions as to remedy selection for OCDA that the USEPA would agree that the capping remedy was the best alternative, over a full excavation remedy. However, at the August 2012 public meeting at the Ringwood Library and again at the February 2013 CAG meeting at the Good Shepherd Church, Director Mugdan again indicated that the USEPA was still considering an excavation remedy at OCDA.

The Borough further consulted with its engineer, Jeff Yuhas, and its environmental consultant, Excel, about the most appropriate remedial alternative and re-use of the OCDA land. On April 10, 2013, Borough Manager Scott Heck, Borough Engineer Jeff Yuhas, Wanda Chin Monahan, Esq., special environmental counsel to the Borough, and Lawra Dodge and Eric Mertz from Excel conducted a site visit of the OCDA.

During this site visit, it became abundantly clear that the excavation remedy being considered by USEPA would create unnecessary stability risks both to the adjacent Peter's Mine Road and the underlying utilities and other mine workings, connected to the nearby Sheehan Drive neighborhood. It was also clear that the steeply sloped crevasse that would remain after excavation (even with some soil stabilization work) would pose an unnecessary attractive nuisance and risk to the general public welfare and safety. The proposed excavation would be as deep as up to twenty (20) feet very close to the Peter's Mine Road. See attached cross section from the OCDA FS provided as Attachment B.

Following this initial site visit on April 10, 2013, the Borough's efforts began in earnest including continued discussions with and evaluation by the Borough Engineer, Jeff Yuhas, Borough Manager Heck and the Excel Team about the feasibility of constructing a new Recycling Center on top of a capped OCDA. These efforts included the assemblage of all necessary documents, information, data and figures/drawings relevant to the OCDA and its possible reuse from the Ford/Arcadis Team and verified by the Excel Team. Coordination of the preparation of a fully engineered conceptual site plan with the existing site conditions of OCDA, including the environmental issues and combined remedial alternative of consolidation and capping, and the requirements by the Borough for the function and increased capacity of a new Recycling Center ensued over the next few months.

In August, 2013, the Borough approved a proposal from Engineering & Land Planning Associates (E&LP) to prepare a Preliminary and Final Site Plan including engineered drawings and figures for construction of a new Recycling Center at OCDA which would be fully compliant with all applicable regulations. Those plans were completed in time for presentation to the USEPA at a meeting held on September 11, 2013. The Borough's proposal for the new Recycling Center at OCDA was discussed further at the September 24, 2013 meeting of the CAG.

Contrary to some of the comments made during the September 24, 2013 CAG meeting, Nov. 7, 2013 USEPA public hearing on the PRAP, and most recently at the January 28, 2014 CAG meeting, the Borough did not come up with the proposal to relocate the Recycling Center to the OCDA at the eleventh hour or as a "Hail Mary" pass. Careful consideration about all issues attendant to a proposed excavation remedy, including the protection of human health and the environment against the risks posed by the environmental conditions of OCDA as the primary priority for the Borough, was made by the Borough in consultation with the Borough's professional team including the Borough Engineer.

The Borough remains convinced that the consolidation and capping remedy for OCDA and the construction of a new Recycling Center on top of the capped OCDA is the preferred remedial alternative that is fully protective of human health and the environment when compared to the introduction of unnecessary risks and unknowns and known risks that come with an excavation remedy.

4.6 Status Update and Summary of Borough's Actions to Relocate Recycling Center to O'Connor Disposal Area

Since presenting the proposal to relocate the Borough's Recycling Center to the O'Connor Disposal Area to the USEPA on September 11, 2013, the Borough has taken the following actions to advance this proposal:

1. Authorized Engineering & Land Planning Associates to revise and finalize the design and engineered drawings and preliminary and final site plan for the new Recycling Center which complies with all current regulatory requirements. See attached Final Site Plan and engineered drawings from E&LP dated February 3, 2014 provided as Attachment C;

2. Obtained official approval from Ringwood Council to proceed with relocation proposal at December 17, 2013 Council meeting. See attached Ringwood Council Resolution No. 2013-338 dated December 17, 2013 provided as Attachment D;

3. Preliminary and Final Site Plan was presented to the Ringwood Planning Board at their January 13, 2014 meeting for a courtesy review only as no formal approval is needed from the Planning Board by the Borough to proceed with its relocation proposal. See attached Agenda for the January 13, 2014 meeting of the Ringwood Planning Board provided as Attachment E;

4. Authorized E&LP to prepare applications for permits required by the NJDEP and the Highlands Commission for the new Recycling Center; and

5. Applications for some of the permits are expected to be submitted this month.

4.7 There is No Impact to Groundwater Within or Downgradient of the O'Connor Disposal Area

Furthermore, groundwater quality within and immediately down gradient of the O'Connor Disposal Area indicates no impact to groundwater in this area, specifically no indication of any of the PAH, VOC, and PCB constituents reported sporadically in the fill material and only various concentrations of metals, including iron, manganese and occasionally arsenic that are naturally abundant in the native bedrock, at concentrations above background. Other than naturally occurring iron and manganese associated with the native bedrock and historic mining activities at the Site, only the occasional, sporadic reporting of arsenic slightly above its 8 part per billion groundwater quality standard has been reported at a handful of wells but these levels are not indicative of a condition that would pose any risk to surface water quality in this area nor any adverse risk to human health or the environment.

5.0 Peters Mine Pit Area: Borough Agrees with USEPA Preferred Alternative of Construction of a Permeable Engineered Cap but Disagrees with Excavation of Historical Fill Surrounding the Peters Mine Pond

In USEPA's PRAP, the agency selects Alternative 6A, Removal and Off-Site Disposal of Historic Fill Surrounding Peters Mine Pit, Fill Peters Mine Pit and Permeable Engineered Cap of Peters Mine Pit with Engineering and Institutional Controls as the preferred alternative. The Borough agrees with the USEPA's selection of construction of a Permeable Engineered Cap as the preferred alternative given that this alternative is fully protective of human health and the environment and is consistent with USEPA's presumptive remedy for landfills.

The Borough does not agree, however, with the agency's selection of Alternative 6A given that it includes excavation of "historic fill" surrounding the Peters Mine Pit Pond. In the PRAP, USEPA states that Alternative 6A is recommended "because it is expected to achieve substantial and long-term risk reduction through the permanent removal of shallow contaminated fill and containment of the remaining fill", however, the results of the Peters Mine Pit RI indicate that

approximately 50% of the approximately 21,000 cubic yards of "historic fill" surrounding the existing pond that would be excavated in Alternative 6A is soil that was used to cap the Peters Mine Pit Area in the early 1970s. The balance of the material that would be excavated is fill mixed with miscellaneous debris including plastic, wood, etc. Since this material is not highly contaminated, removal of this material and transporting it to an offsite landfill would therefore not result in any "substantial" reduction of risk at the Peters Mine Pit.

5.1 Excavation of Fill within Pit Itself Creates Undue Risks without Providing any Added Protection of Human Health and the Environment when Compared to the Consolidation and Capping Remedy

Given that the vast majority of the approximately 21,000 cubic yards of material that is targeted for excavation is located between the edges of the Pond and the bedrock walls of the Peters Mine Pit itself and that this material is only marginally contaminated, excavation of this material means that heavy equipment will be operating within the Pit for longer periods of time above and beyond what would be needed for Engineered Cap construction creating unwarranted additional risk with little to no added benefit to human health or the environment.

Excavation of this material which is nearly 100% within the Pit brings into question concerns expressed repeatedly by at least one Upper Ringwood Sheehan Drive resident objecting to any excavation within the Peters Mine Pit and concern over the effect of excavation on the stability of mine shafts that extend throughout the area surrounding Peters Mine and up into the Sheehan Drive neighborhood.

Excavation within the original mine pit creates unnecessary unpredictable risks to the deep inner mine workings as well as disturbance and introduction of finer grain materials to the groundwater. Since the risks posed by soil in the PMP is direct contact and ingestion, both of which are fully addressed through Engineered Cap construction, excavation provides no further environmental protection benefit but comes with great risks (above) coupled with added risks related to potential releases of dust laden with contaminated fill and increased truck traffic generated by transporting excavated material for offsite disposal.

5.2 USEPA's Selection of Capping Deems Material Safe to Remain in PMP Yet USEPA Also Requires Excavation of Same Material from Around Perimeter of the PMP "Pond" and to Extend Cap over the Entire Excavated Area

Furthermore, based on the RI conducted within the Peters Mine Pit, the fill material surrounding the Pond that would be excavated as part of Alternative 6A contains more than 50% original soil cap material, less than 0.5% paint sludge and, the balance is soil mixed with solid non-hazardous waste that exhibits low levels of constituents that clearly meet the definition of Low Level Threat Waste. Following excavation of the fill surrounding the Pond, **the area will still be capped** (USEPA's proposed cap will extend over and include the entire extent of PMP, including the post-excavation area). Since the Engineered Cap will extend over the

area that has already been excavated to the top of the water table, excavation of this material is little more than a superficial ceremonious exercise with no added environmental protection benefit, especially when compared to the additional and unquantifiable risks it poses.

USEPA's selected remedy proposes capping the entire area due to residual Low Level Threat Waste within the Peter's Mine Pit Area and below the water table. USEPA therefore has deemed the material within the PMP Area and below the water table (i.e., under the PMP "pond") safe to remain in place beneath an engineered cap. The data demonstrates that the material USEPA proposes to excavate is of **like material** that is within the PMP below the water table (i.e., the material which is beneath the PMP "pond") and the prior soil cap constructed in the 1970s. It does not make sense and is unreasonable for USEPA to require excavation of material which it also deems is safe to leave behind beneath an Engineered Cap.

On Page 5 of its September 30, 2013 Memo, the National Remedy Review Board stated:

> "The Region's proposed Peters Mine Pit remedy, as presented to the Board, includes, among other components, the excavation and off-site disposal of the historic fill material located above the water table in the "collar" area of the pit. **This fill material, based on the package description, appears to be similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit.** The Region estimates this fill material's excavation and removal cost to be $2 million. The State of New Jersey commented that this historic fill could be segregated from hazardous materials and, subsequently, used as backfill within the pit. **Therefore, the Board recommends that the Region's decision documents provide further justification for this fill material's off-site disposal rather than its consolidation within the Peters Mine Pit like other materials (e.g., mine tailings) proposed for on-site disposal/consolidation."** (emphasis added)

In the Proposed Remedial Action Plan, the USEPA failed to provide any justification for this fill material which the NRRB recognized to be "similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit" to be disposed of off-site "**rather than its consolidation within the Peters Mine Pit".** The Borough agrees with the NRRB's assessment that the fill material located above the water table in the "collar" area of the pit (which USEPA proposes be excavated and disposed of off-site) should be consolidated within the Peter's Mine Pit and protected beneath the cap which USEPA proposes to encompass the entire Peter's Mine Pit.

6.0 Response to Public Comments

The Borough has attached a matrix, provided as Attachment F, that provides responses to comments made by the Technical Advisors to the Ringwood CAG in a memorandum dated November 6, 2013 which is provided as Attachment G. It is important to note that the CAG's Technical Advisors have never stated publicly (not even at the most recent CAG meeting on January 28, 2014) that use of the Presumptive Remedy of construction of an Engineered Cap for

any of the three Land ACs would not be protective other than to raise the issue of "burrowing animals" which the Borough has pointed out the Cap can be designed to address.

7.0 Borough's Prior Submissions to the National Remedy Review Board Dated May 19, 2012 and May 28, 2013

The Borough refers and incorporates by reference its two prior submissions dated May 19, 2013 and May 28, 2013 to the agency during the National Remedy Review Board process as part of its present comments on the USEPA Proposed Remedial Action Plan.

8.0 REFERENCES

ARCADIS, U.S., Inc., October 20, 2011. Revised Feasibility Study – Peters Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., January 2012a. Revised Screening Level Ecological Risk Assessment for the Peters Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., February 23, 2012b. Revised Remedial Investigation Report for the Peters Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., March 24, 2012c. Draft Baseline Human Health Risk Assessment for the Peters Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 10, 2012d. Draft Remedial Investigation Report for the Cannon Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 20, 2012e. Draft Baseline Human Health Risk Assessment for the Cannon Mine Pit Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 23, 2012f. Revised Screening Level Ecological Risk Assessment - Cannon Mine Pit, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 23, 2012g. Draft Feasibility Study - Cannon Mine Pit, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 19, 2012h. Revised Remedial Investigation Report for the O'Connor Disposal Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 20, 2012i. Draft Baseline Human Health Risk Assessment for the O'Connor Disposal Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., April 25, 2012j. Revised Screening Level Ecological Risk Assessment for the O'Connor Disposal Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

ARCADIS, U.S., Inc., May 1, 2012k. Draft Feasibility Study – O'Connor Disposal Area, Ringwood Mines/Landfill Site, Ringwood, New Jersey.

USEPA. 1991. *A Guide to Principal Threat and Low Level Threat Wastes*. OSWER, Superfund Publication: 9380.3-06FS. November 1991. Accessed online at: http://www.epa.gov/superfund/health/conmedia/gwdocs/pdfs/threat.pdf

USEPA. 1997. *Rules of Thumb for Superfund Remedy Selection*. EPA 540-R-97-013. OSWER 9355.0-69. PB97-963301. August 1997. Accessed online at: http://www.epa.gov/superfund/policy/remedy/rules/rulesthm.pdf

USEPA. 2012. *Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide*. Updated. Accessed online at: http://www.epa.gov/superfund/policy/remedy/presump/caps.htm

ATTACHMENT A

SEPTEMBER 10, 2013 LETTER FROM CHIEF LOMBARDO

BOROUGH OF RINGWOOD

POLICE DEPARTMENT

60 MARGARET KING AVENUE
RINGWOOD, NJ 07456

TEL: 973-962-7017
FAX: 973-962-7335
E-mail: lombardo@ringwoodpolice.com

BERNARD F. LOMBARDO
CHIEF OF POLICE

To: Scott Heck
Borough Manager

From: Bernard F. Lombardo
Chief of Police

Date: September 10, 2013

Re: Margaret King Avenue

Presently Margaret King Avenue is a through street for up county residents to commute to and from their places of employment. Traffic peaks at the intersection of Sloatsburg Road and Margaret King Avenue from 6:30 A.M. through 9:00 A.M. and the intersection of County Route 511 and Margaret King Avenue from 4:00 P.M. through 6:00 P.M. Traffic typically backs up for a half mile during these times, causing up to a 15 minute wait time for residents to get through the intersection. This also slows emergency response from Ringwood Police Headquarters as well as reduces productivity of the DPW crews leaving our Borough garage. Anything we can do to minimize additional traffic would be beneficial.

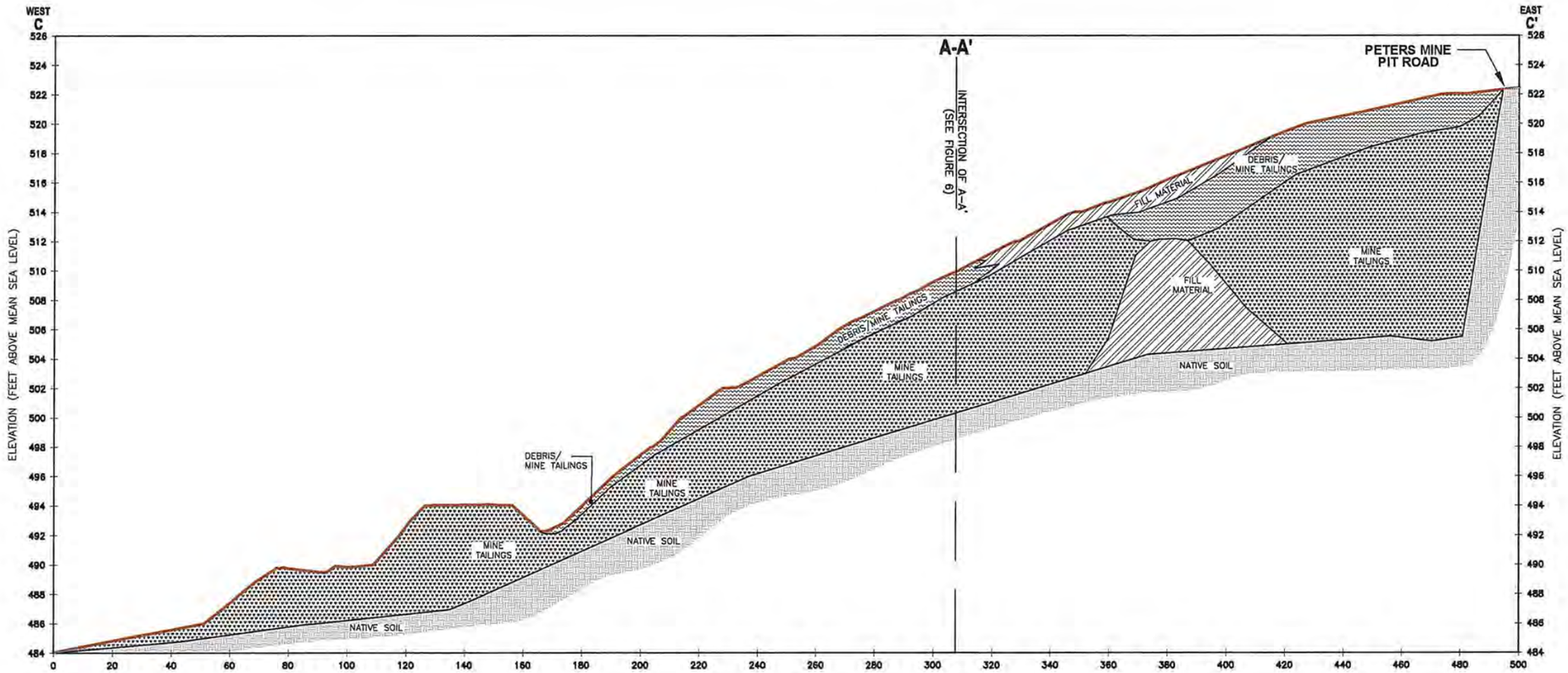
We understand that there is about to be a significant amount of activity in the superfund site in the Upper Ringwood Area of our community. While we understand the need to address the environmental concerns, my Department is concerned about traffic and the safety of our residents. This activity will obviously greatly increase the amount of truck traffic on Margaret King Avenue. This increase in traffic, without any improvement with the traffic control at the intersections of Margaret King Avenue and Sloatsburg Road and Margaret King Avenue and County Route 511, will result in an increase in wait times at both intersections as well as impede emergency response from Borough Hall and negatively impact public safety.

From an emergency management perspective, any and all measures should be taken to minimize the amount of truck traffic and duration of time needed for remediating the superfund site.

I would like the above information to be conveyed to the EPA, the NJDEP and the County officials prior to any final decisions being made. I am also available to discuss this issue, if needed.

ATTACHMENT B

FIGURE 8 FROM O'CONNOR DISPOSAL AREA FEASIBILITY STUDY



CROSS SECTION C-C' (C-C'0+00 TO C-C'-5+00)

LEGEND:

- GROUND SURFACE
- FILL MATERIAL
- DEBRIS/MINE TAILINGS
- MINE TAILINGS (GRAVEL, SAND & SILT SIZED ROCK FROM ORE PROCESSING AND MILLING)
- NATIVE SOIL

NOTE:

1. LITHOLOGY OF MATERIAL SHOWN ARE BASED ON INVESTIGATION TEST PITS/TRENCHES AND THE INTERPRETATION THEREOF.

HORIZONTAL SCALE: 1"=40'

VERTICAL SCALE: 1"=8'

KEYMAP

RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY
FEASIBILITY STUDY REPORT
FORMER O'CONNOR DISPOSAL AREA

O'CONNOR LANDFILL FOCUS AREA CROSS SECTION

ARCADIS

FIGURE
8

ATTACHMENT C

SITE PLAN FOR O'CONNOR DISPOSAL AREA

BOROUGH OF RINGWOOD RECYCLING CENTER

ATTACHMENT D

BOROUGH OF RINGWOOD RESOLUTION NO. 2013-338

Resolution Number
2013-338

BE IT RESOLVED that the Municipal Council of the Borough of Ringwood hereby authorizes relocation and construction of a new Recycling Center on top of the capped O'Connor Disposal area.

Linda M. Schaefer

LINDA M. SCHAEFER, MAYOR

I hereby certify that the above Resolution was adopted by the Municipal Council of the Borough of Ringwood at its Business Meeting of December 17, 2013.

Kelley A. Rohde

KELLEY A. ROHDE, RMC
BOROUGH CLERK

Council Member	Motion	Second	Ayes	Nays	Abstain	Absent
Schaefer			X			
Speer			X			
Anderson			X			
Davison			X			
Marsala	X		X			
Martocci		X	X			
Noonan			X			

ATTACHMENT E

BOROUGH OF RINGWOOD PLANNING BOARD AGENDA FOR JANUARY 13, 2014

AGENDA OF THE REORGANIZATIONAL MEETING OF THE RINGWOOD PLANNING BOARD, TO BE HELD ON MONDAY, JANUARY 13, 2014, 8:00 P.M., BOROUGH HALL, 60 MARGARET KING AVENUE, RINGWOOD, NEW JERSEY

I. Statement of Chairman as to compliance with Statute.

On January 16, 2011, a notice of this Reorganizational Meeting was published in the Annual Notice to the Suburban Trends, and the Annual Notice was also posted on the Bulletin Board in the municipal building. This meeting is also being electronically recorded. Meetings shall be adjourned no later than 11:30 P.M. unless changed by Resolution of the Board.

II. **Roll Call:**
Atlas___, Cody___, Kidd___, Loweth___, Sergi___, Speer___, Schaefer____, Wiley___, Bontatibus____, Alt. 1 Taukus___.

III. Flag Salute.

IV. Appointment of Temporary Chairman.

V. Election of Chairman.

VI. Election of Vice Chairman.

VII. Election of Executive Secretary.

VIII. Closed Session to discuss appointment of Planning Board professionals.

IX. Motion to appoint Planning Board professionals.

X. Adoption of Annual Calendar for 2014.

XI. Chairman appoints liaisons to the following organizations:

Board of Adjustment	Economic Development Commission
Board of Health	School Board
Environmental Commission	R.E.V.O.A.

XII.	Public Portion.	
XIII.	**Approval of Minutes:** Regular Meeting – 11/25/13	JA, DC, LL, LS, TS, BW
XIV.	**Approval of Vouchers:** Banisch Asso. – P.O. #13-02955	$909.00
XV.	Presentation of Proposed Ringwood Recycling Center – Peter's Mine Road.	
X.	Attorney's Report.	
X.	Correspondence.	
X.	Adjournment.	

NOTE: FORMAL ACTION MAY OR MAY NOT BE TAKEN ON ANY OF THE ABOVE ITEMS.

January 8, 2013 Helen M. Forsa, Secretary

ATTACHMENT F

MATRIX OF RESPONSES TO CAG COMMENTS ON PRAP

RESPONSE TO COMMENTS MATRIX		
Comment No.	**CAG Technical Advisor Comments**	**Borough's Response**
Peter's Mine Pit		
1	The PP includes this Remedial Action Objective [RAO] for the Peter's Mine Area: "Permit recreational use of the Peter's Mine Pit Area given its location within the Ringwood State Park". As presented, the PMP will, after completion be a moderately sloping mound surrounded by boulders with fences around methane vents at a number of locations. The area will not have trees and disruption of the cap is not permitted. What types of recreation does this configuration support? Who will the users be? An explanation is required. How will it be maintained if a ring of boulders restricts access? How will burrowing animals be controlled? How does this ecologically restore Ringwood State Park?	As stated on Pages 22 and 23 of the PRAP, respectively, USEPA notes that Alternative 6A which includes construction of a permeable soil engineered cap for the Peters Mine Pit Area will enable visitors and residents to utilize the property for recreational use and restoration of the area through construction of the soil cap would include vegetation with trees naturally present in Ringwood. The permeable cap will be designed to permit the establishment of trees, including those with deep tap roots to allow this area to return to a state similar to that of surrounding areas of the Ringwood State Park.
2	The PP states the need for methane management will be determined during design. The PMP is known to contain organic materials that are undergoing anaerobic degradation [gas bubbling to the surface is readily apparent]. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical – the FS indicates that passive vent wells will be needed. The PMP area will look like a closed landfill [which is what it is], not a recreational area. How does this fulfill RAO for the PMP? The USEPA should ascertain the need for methane management now and then incorporate that information into its section process.	It is completely consistent with industry standards to finalize the need for and design of a methane management system to be conducted during the Design Phase of the Remedial Action and not during the Feasibility Study phase of work. There are a variety of design alternatives for incorporation of methane vents into the design to minimize any potential safety and aesthetic issue associated with them, should it be determined that active venting is warranted.

Comment No.	Excel's Comment	Borough's Response
3	The PP indicates the materials within the PMP will be dewatered and then compacted. The surface of the PMP pond is the top of the water table – its groundwater. After the materials are dewatered and compacted, the groundwater will saturate those materials again, recreating the organic muck that is currently present [and making the cost of dewatering a useless expenditure, btw], which has poor structural support capabilities. How is the proposed cap going to be stable and not settle under these conditions? What is the contingency for a cap that fails due to settlement? The PMP is deep, over 60+feet at the east end; how will those materials be effectively compacted? Again, the USEPA must not ignore the implementability of compaction. If those materials cannot be reliably and consistently compacted the costs for this option would increase dramatically. The time to ascertain the constructability of a project is before it is selected. The USEPA should ascertain the compaction now and then incorporate that information into its selection process. This is a data gap that must be closed now, before the ROD, not after during design.	The implementability of dewatering, placement and compaction of fill was thoroughly evaluated during preparation of the FS for the Peters Mine Pit and is not anticipated to result in recreation of the "organic muck" that is currently present given that material is due to detrital natural organic materials (leaves, tree branches, algae, etc.) decaying at the bottom of the existing Pond which will no longer exist once the water is pumped down and backfilling is initiated. Clearly, the materials placed below the water table will be resaturated, however, those materials will be compacted dry and will extend above the groundwater table prior to cessation of dewatering so that they serve as a stable base upon which to continue raising the grade for final soil cap construction. The final material and compaction specifications for the fill are most certainly a design phase detail and would not be included in the FS phase of work.
4	Why will it take "a few years" to complete a ROD for the groundwater? What are the specific technical issues causing this time frame?	The Borough agrees that completion of the ROD for the groundwater at the Site should not take "a few years" given that a comprehensive Draft Site-Related Groundwater RI Report was submitted to the agencies in January 2013 and, although supplemental surface water and pore sampling will be conducted in Spring 2014, the findings of that study are not expected to substantially change the conclusions outlined in the Draft Groundwater RI Report. The Borough has stated publicly on several occasions and in both of our previous submissions to the NRRB that, in our view, the Groundwater AC should not have been bifurcated from the three Land ACs in the first place and the findings of the Groundwater RI should be used to inform the agency's remedial action decision making for the three Land ACs.

Comment No.	Excel's Comment	Borough's Response
5	PMP has shallow overburden groundwater contamination emanating for the Peter's Pit. How will the selected remedy rectify this problem, given the wastes will remain within the pit? Has the likelihood of buried drums been considered?	Buried drums and drum remnants were removed from the area surrounding the Peters Mine Pit during implementation of the RI activities in these areas and there is no indication that any remain within the fill surrounding the Pond. Shallow overburden groundwater within the Peters Mine Pit as documented at well SC-01 confirms that only very low levels of benzene, hovering close to the 1 ppb Groundwater Quality Standard, remain even under "pre-remediation" conditions within the Peters Mine Pit. Benzene concentrations in groundwater downgradient of the Pit are in the low single digit range and are decreasing over time at key overburden and shallow bedrock well locations with statistically significant decreases already documented using both Mann-Kendall and Linear Regression techniques. The data indicate that post-capping, the low and decreasing concentration trends will continue due to natural attenuation, including aerobic biodegradation among other mechanisms, continue over time.
6	There is an on-going study to ascertain whether the PMP is discharging contamination to the adjacent Park Brook. If that study finds the PMP is discharging to the Brook how can leaving the wastes in-place within the PMP be justified?	Although Ford has agreed to proceed with the surface water and pore water sampling plan required by the agencies for the Park Brook, it is fully anticipated that the results will confirm the conclusions regarding the absence of any adverse impact associated with residual, single digit benzene concentrations in groundwater within and downgradient of the Peters Mine Pit. Based on the preponderance of data generated during the Site-Related Groundwater RI in this area which informs this conclusion, all indications are that the agencies also anticipate this outcome and the data from this study will be available to confirm this conclusion prior to final design and implementation of the remedy.

Comment No.	Excel's Comment	Borough's Response
7	How long will the "long term monitoring" of the engineering controls last? What financial assurance mechanisms are required for this monitoring?	Consistent with federal and state regulations, long term monitoring of the Engineering Controls for each of the three land ACs will continue as long as they remain in place as part of the final remedy. Financial assurance will be incorporated into the approved plans as required by applicable regulations. Note also that, per NJDEP regulations, the engineering controls monitoring and maintenance will be reported during the biennial certification process and a five year review will also be conducted per CERCLA requirements.
8	Alternative 6A, as presented in the FS, has an impermeable cap while this Alternative's description in the PP has a permeable cap. What is the engineering basis for this change? Where is that basis described in detail? USEPA must provide this information.	At the request of USEPA, Alternative 6A was revised in the most recent version of the FS for the Peters Mine Pit Area to include construction of a permeable cap. It is the Borough's understanding that the request was predicated upon the agencies desire to enable restoration of native vegetation, including trees with deep tap roots, upon the Engineered Soil Cap and to facilitate natural, passive venting of any methane through the soil cap. Such a cap minimizes direct recharge through the cap to the underlying materials being capped but doesn't full preclude it which also enhances the natural attenuation mechanisms that the RI has documented are contributing to the natural degradation of residual benzene concentrations in groundwater.

9	The geofabric is being placed atop the wastes that will remain in the pit to provide structural stability to the soil cap. Trees with deep tap roots will puncture that geofabric. Have the effects of that puncturing been evaluated? If so, where is that data provided?	The design for Alternative 6A which includes a permeable soil Engineered Cap includes a geofabric to minimize the loss of fine particulates from the soil cap to the underlying horizons. The geofabric is in no way intended to serve as a means of enhancing the structural stability of the soil cap. Should such support be warranted during construction, geomats and/or other techniques will be utilized for such a purpose. The determination for use of such techniques will be made during design and/or during field implementation which is not at all unusual for a landfill capping project.
Comment No.	**Excel's Comment**	**Borough's Response**
10	What is the basis for assuming that trees whose roots will penetrate into the wastes left in the PMP will survive?	Given that the wastes to be capped are already supporting vegetation, including large growth trees in the areas surrounding the Pond, and the concentrations of constituents in the fill are low to moderate and do not rise to the levels of Principal Threat Waste, there is every expectation that native trees, including those with deep tap roots, will thrive.
	What are the specific concentrations of contaminants that will be allowed to present in the "non-hazardous soil and fill" that will be reused as fill for the PMP? Where are the specific testing protocols that will be use? Will an NJDEP soil reuse plan be prepared and approved for this?	It is our understanding that the reuse of material excavated in the areas surrounding the Peters Mine Pit Pond will be predicated on the absence of hazardous waste which, in the case of this Site, includes only paint sludge. There is no specific requirement for a NJDEP soil reuse plan, however, the protocols for evaluation of excavated material for reuse will be specified in the Remedial Action Workplan to be prepared for review and approval by both the USEPA and the NJDEP.

11		
Comment No.	**Excel's Comment**	**Borough's Response**
Cannon Mine Pit		
1	The PP states the need for methane management for the CMP will be determined during design. The CMP is known to have received municipal wastes that contain organic materials. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical to the future look and possible use of the site. The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.	It is completely consistent with industry standards to finalize the need for and design of a methane management system to be conducted during the Design Phase of the Remedial Action and not during the Feasibility Study phase of work. There are a variety of design alternatives for incorporation of methane vents into the design to minimize any potential safety and aesthetic issue associated with them, should it even be determined that active venting is warranted.
2	The selected alternative does not address restoration of the site for community use. Apparently that was a driving force behind selection an alternative for the OCD [both Alternatives], but was not a factor here. Why?	Given the small size of this area and its location on top of the ridge, restoration of this land as green space and restriction of access to this area once capped is preferred by the Borough as landowner.

3	The proposed actions will result in a closed landfill abutting a residential neighborhood. As a practical matter, it will look exactly as it does today.	We respectfully disagree that the Cannon Mine Pit Area will look exactly as it does today following consolidation of materials surrounding the pit and construction of a graded and landscaped soil cap. The aesthetics of this land AC will be significantly improved and, as stated above, given the comparatively small size of this area and its location on top of the ridge, restoration of this land as green space and restriction of access to this area once capped is preferred by the Borough as landowner.
Comment No.	**Excel's Comment**	**Borough's Response**
O'Connor Disposal Area		
1	Alternative 6A is the preferred alternative, and we concur with the USEPA's selection. The removal of the OCD would, as USEPA states, eliminate long term risks from the midst of a residential area, provide significant benefits to the community living next to the OCD and must be implemented.	The Borough does not agree that the "long term risks" posed by the materials within the OCDA rise to the level that warrants selection and implementation of excavation of the more than 110,000 tons of material that, under existing pre-remediation conditions, is not impacting groundwater quality and poses only a direct contact and/or ingestion risk which construction of an engineered cap will fully and protectively address. Excavation of the materials in the OCDA and transportation of them through the Ringwood community poses a far greater and unwarranted risk with respect to potential vehicular accidents/injuries/death coupled with potentially destabilizing Peters Mine Road, generation of dust, exposure to workers and the community with no commensurate added protection compared to Engineered Cap construction which is USEPA's fully protective Presumptive Remedy. In fact, nowhere in the CAG's Technical Advisor's comments, whether written or made verbally at any of the Public meetings, have

		they commented that an Engineered cap is not protective of human health and the environment. Given that there is no Principal Threat Waste within the OCDA, excavation of the fill will create a steeply sloping and largely wet crevasse that will be unusable by the Borough or the residents, and consolidation and capping is the only alternative that will enable the Borough as property owner to beneficially and productively reutilize this land for the Ringwood community while returning the land where the current Recycling Center is located back to the community, the Borough supports Alternative 4A selected by USEPA as the contingency alternative.
Comment No.	**Excel's Comment**	**Borough's Response**
2	The "contingency" alternative, 4A, is not acceptable. First, it was introduced into the process for Ringwood at the eleventh hour. Its discussion at the September CAG meeting appeared as an afterthought. NO specific details were provided. This is completely contrary to the USEPA's public participation protocols in general, and considering the Ringwood CAG interactions over the last 6 years it is quite astounding. I note that page 8 of the PP states the potential human exposure due to a future recycling center worker was qualitatively assessed. This statement indicates the USEPA had the Borough's proposal, and specific information on that proposal for sufficient time to have its risk assessment staff conduct a review. How long was that? This data is something the USEPA had, but failed to share with the residents, who are most impacted. Why? Who made the decision to exclude the	In our White Paper submitted to USEPA in May 2012, the Borough discussed its desire to productively reutilize the land where the O'Connor Disposal Area is located. The Borough had previously discussed the concept of potentially relocating the Borough Recycling Center with the USEPA as far back as January 2011. Since the Borough was focused on and assisting Ford in the performance and completion of the RI, FS, and risk assessment documents for all three land ACs and the Site-Related Groundwater AC during all of 2012 and most of 2013, the focus could not be placed on the engineering feasibility for such a redevelopment and beneficial reuse, however, as soon as it was possible to do so, the Borough's engineers began working on preliminary engineering plan development which culminated in the Design Package that was presented to USEPA during a meeting in New York City on September

	people most directly affected? The USEPA must provide the full details and all information it utilized to propose its "contingency". Until that is done and the residents have had the opportunity to fully vet that information, all actions on the PP must be stayed. In addition, all permits must be secured by the Borough within six months; this is not realistically feasible. The residents that live directly adjacent to the OCD are adamantly opposed to this "last second" addition.	11, 2013. Following that meeting, USEPA requested that Ford conduct a qualitative risk evaluation of the reuse of the OCDA for the Borough's Recycling Center. The plans for the Recycling Center were subsequently discussed at the September CAG meeting which was the first opportunity for such discussions to take place. Details of the Borough's plans are being finalized to enable beneficial reuse of the land once consolidation and cap construction is complete.
Comment No.	**Excel's Comment**	**Borough's Response**
3	The OCD alternatives include 5A, which uses mine tailings as fill at PMP, and 5B, which leaves all mine tailings in-place. The cost difference is approximately $6 million, or moving the tailings to PMP adds $6 million to the cost of that OCD alternative. However, the movement of those tailings from OCD to the PMP will result in lower costs for the PMP alternative, as well as reduced impacts via less truck traffic through the residential area. Where are those PMP costs quantified? And where is credit taken for those reduced costs?	At the request of USEPA, the FS document for the O'Connor Disposal Area was revised to include reuse of excavated mine tailings from the OCDA to either the Cannon Mine Pit or the Peters Mine Pit, however, USEPA did not ask for or require a commensurate revision to the FS documents for the Cannon Mine or Peters Mine Pits to reflect the cost savings. It is the Borough's opinion that the fill materials and underlying mine tailings within the OCDA should not be excavated in the first place and, rather, the preferred alternative for this land AC should be consolidation and permeable cap construction to enable the Borough to relocate the Recycling Center to the capped land as previously discussed in response to the comment above.

ATTACHMENT G

NOVEMBER 6, 2013 CAG COMMENTS ON PRAP

RINGWOOD MINES/LANDFILL SUPERFUND SITE
Citizen's Advisory Group Technical Advisor
Chapin Engineering, A Professional Corporation

Memo

To: Robert P. Spiegel, TAG GM
Ringwood Superfund Site Community Advisory Group
From: R.W. Chapin, M.S., P.E., BCEE, Technical Advisor
RE: Comments on "Superfund Program Proposed Plan, Ringwood Mines/Landfill Superfund Site Operable Unit 2" Dated September 30, 2013
Date: November 6, 2013

In accordance with your request the United States Environmental Protection Agency's [USEPA] Proposed Plan [PP] for the Ringwood Mines/Landfill Superfund Site has been reviewed by the Technical Advisor's Team. This memo provides review comments by the Team, including Mr. Leo Frey, P.E. of Frey Engineering and Mr. Peter deFur, Ph.D. of environmental Stewardship Concepts.

The Proposed Plan presents the USEPA's Preferred Alternative for each of the three disposal areas that comprise Operable Unit 2 [OU2] of the site. As presented in the PP, the Preferred Alternative for each disposal area is summarized below. [Note: the identifying number for each alternative is defined in the Feasibility Study [FS] for that disposal area.]

- **Peter's Mine Pit [PMP]:** ***Alternative 6A***-Removal and off-site disposal of Historic Fill surrounding Peter's Mine Pit, Fill Peter's Mine Pit and Permeable Engineered Cap of Peter's Mine Pit with Engineering and Institutional Controls, Peter's Mine Pit Pond would not remain. This alternative calls for removal of the fill down to the water table; should drums or sludge be encountered they would be totally removed to whatever depth is needed. Materials within the pit would be compacted prior to placement of a geotextile and clean fill. The fill will be "mounded" to a height of approximately three feet to establish drainage away from the former pit. Long term groundwater monitoring would occur on a quarterly basis until the PP for groundwater is selected "...within a few years". Long term monitoring of the cap and the engineering controls would be required and would include an annual inspection of the area. The need for methane gas management would be evaluated in design. Engineering controls, such as a fence or boulders, would be implemented "...to restrict access." Institutional controls [e.g., a Deed Notice] would be placed on the site.
- **Cannon Mine Pit [CMP]:** ***Alternative 3A***-Permeable Engineered Cap of the Cannon Mine Pit Area. Wastes around the perimeter would be removed and consolidated with the other wastes, wastes in the pit would be compacted, then a two feet thick soil cap would be installed. Long term groundwater monitoring would occur on a quarterly basis until the PP for groundwater is selected "...within a few years". Long term monitoring of the cap and the engineering controls would be required and would include an annual inspection of the area. The need for methane gas management would be evaluated in design. Engineering controls, such as a fence or boulders, would be implemented "...to restrict access." Institutional controls [e.g., a Deed Notice] would be placed on the site.

- **O'Connor Disposal Area [OCD]:** ***Alternative 5A***-Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings. This alternative was selected "... to achieve substantial and long-term risk reduction through permanent removal of contaminated fill...and would allow the portion of the site that is most readily accessible to the residents to be used without restriction. Removal of the contaminated materials would allow the community to continue to hunt game and gather plants according to their cultural and traditional practices without any inhibitions or restrictions that would be present if a cap or cover were selected." Mine tailings at the base of OCD that are not commingled with wastes would be used for fill at PMP. Restoration activities "...would focus on restoring the O'Connor Disposal Area to pre-disposal conditions". Long term groundwater monitoring would occur on an annual basis for 5 years, but the PP for groundwater, which is expected by the USEPA "...within a few years", may alter this monitoring program. Wetlands will be restored.

- **O'Connor Disposal Area:** ***Alternative 4A***-As described in the PP, this alternative calls for wastes from the fringe areas of the site to be consolidated to the center to minimize the area capped. A two foot thick soil cap would be placed over the consolidated wastes. "Fringe" areas would be restored, including any wetlands areas. ". Long term monitoring of the cap and the engineering controls would be required and would include an annual inspection of the area. The need for methane gas management would be evaluated in design. Engineering controls, such as a fence or boulders, would be implemented "...to restrict access." Institutional controls [e.g., a Deed Notice] would be placed on the site.

  Alternative 4A is presented as a "contingency remedy" to Alternative 5A that the USEPA could find acceptable if the Borough of Ringwood "proceeds in a timely manner to formally adopt and obtain all necessary approvals to construct a new recycling center at the O'Connor Disposal Area". This is based on "planning documents for construction of a new recycling center" that the Borough "recently presented" to USEPA. As will be discussed, the CAG has been provided with a cursory discussion of this concept at its September meeting and has been provided NO information upon which to evaluate this contingency remedy.

  Specific comments are provided below relative the Preferred Alternative for each disposal area.

Peter's Mine Pit:

1. The PP includes this Remedial Action Objective [RAO] for the Peter's Mine Area: "Permit recreational use of the Peter's Mine Pit Area given its location within the Ringwood State Park". As presented, the PMP will, after completion be a moderately sloping mound surrounded by boulders with fences around methane vents at a number of locations. The area will not have trees and disruption of the cap is not permitted. What types of recreation does this configuration support? Who will the users be? An explanation is required. How will it be maintained if a ring of boulders restricts access? How will burrowing animals be controlled? How does this ecologically restore Ringwood State park?

2. The PP states the need for methane management will be determined during design. The PMP is known to contain organic materials that are undergoing anaerobic degradation [gas bubbling to the surface is readily apparent]. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical– the FS indicates that passive vent wells will be needed. The PMP area will look like a closed landfill [which is what it is], not a recreational area. How does this fulfill the RAO for the PMP? The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.
3. The PP indicates the materials within the PMP will be dewatered, and then compacted. The surface of the PMP pond is the top of the water table—it's groundwater. After the materials are dewatered and compacted, the groundwater will saturate those materials again, recreating the organic muck that is currently present [and making the cost of dewatering a useless expenditure, btw], which has poor structural support capabilities. How is the proposed cap going to be stable and not settle under these conditions? What is the contingency for a cap that fails due to settlement? The PMP is deep, over 60+feet at the east end; how will those materials be effectively compacted? Again, the USEPA must not ignore the implementability of compaction. If those materials cannot be reliably and consistently compacted the costs for this option would increase dramatically. The time to ascertain the constructability of a project is before it is selected. The USEPA should ascertain the compaction now and then incorporate that information into its selection process. This is a data gap that must be closed now, before the ROD, not after during design.
4. Why will it take "a few years" to complete a ROD for the groundwater? What are the specific technical issues causing this time frame?
5. PMP has shallow overburden groundwater contamination emanating for the Peter's Pit. How will the selected remedy rectify this problem, given the wastes will remain within the pit? Has the likelihood of buried drums been considered?
6. There is an on-going study to ascertain whether the PMP is discharging contamination to the adjacent Park Brook. If that study finds the PMP is discharging to the Brook, how can leaving the wastes in-place within the PMP be justified?
7. How long will the "long term monitoring" of the engineering controls last? What financial assurance mechanisms are required for this monitoring?
8. Alternative 6A, as presented in the FS, has an impermeable cap, while this Alternative's description in the PP has a permeable cap. What is the engineering basis for this change? Where is that basis described in detail? USEPA must provide this information.
9. The geofabric is being placed atop the wastes that will remain in the pit to provide structural stability to the soil cap. Trees with deep tap roots will puncture that geofabric. Have the effects of that puncturing been evaluated? If so, where is that data provided?
10. What is the basis for assuming that trees whose roots will penetrate into the wastes left in the PMP will survive?

11. What are the specific concentrations of contaminants that will be allowed to present in the "non-hazardous soil and fill" that will be reused as fill for the PMP? Where are the specific testing protocols that will be use? Will an NJDEP soil reuse plan be prepared and approved for this?

Canon Mine Pit:

1. The PP states the need for methane management for the CMP will be determined during design. The CMP is known to have received municipal wastes that contain organic materials. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical to the future look and possible use of the site. The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.
2. The selected alternative does not address restoration of the site for community use. Apparently that was a driving force behind selection an alternative for the OCD [both Alternatives], but was not a factor here. Why?
3. The proposed actions will result in a closed landfill abutting a residential neighborhood. As a practical matter, it will look exactly as it does today.

O'Connor Disposal Area:

1. Alternative 6A is the preferred alternative, and we concur with the USEPA's selection. The removal of the OCD would, as USEPA states, eliminate long term risks from the midst of a residential area, provide significant benefits to the community living next to the OCD and must be implemented.
2. The "contingency" alternative, 4A, is not acceptable. First, it was introduced into the process for Ringwood at the eleventh hour. Its discussion at the September CAG meeting appeared as an afterthought. NO specific details were provided. This is completely contrary to the USEPA's public participation protocols in general, and considering the Ringwood CAG interactions over the last 6 years it is quite astounding. I note that page 8 of the PP states the potential human exposure due to a future recycling center worker was qualitatively assessed. This statement indicates the USEPA had the Borough's proposal, and specific information on that proposal for sufficient time to have its risk assessment staff conduct a review. How long was that? This data is something the USEPA had, but failed to share with the residents who are most impacted. Why? Who made the decision to exclude the people most directly affected? The USEPA must provide the full details and all information it utilized to propose its "contingency". Until that is done and the residents have had the opportunity to fully vet that information, all actions on the PP must be stayed. In addition, all permits must be secured by the Borough within six months; this is

not realistically feasible. The residents that live directly adjacent to the OCD are adamantly opposed to this "last second" addition.

3. The OCD alternatives include 5A, which uses mine tailings as fill at PMP, and 5B, which leaves all mine tailings in-place. The cost difference is approximately $6 million, or moving the tailings to PMP adds $6 million to the cost of that OCD alternative. However, the movement of those tailings from OCD to the PMP will result in lower costs for the PMP alternative, as well as reduced impacts via less truck traffic through the residential area. Where are those PMP costs quantified? And where is credit taken for those reduced costs?

4. Use of OCD tailings as fill at the PMP will reduce truck traffic thru the residential area; where is that quantified? And which option takes credit for that?
5. The word "contingency" means "something done to prepare for a bad event" [http://www.macmillandictionary.com]. The USEPA's use of the term to describe Alternative 4A indicates they foresee problems with Alternative 6A, their selected remedy. What are the specific issues that USEPA knows of, or fears, that requires use of this description? If USEPA lacks confidence that their selected plan may not be implementable, the residents need full disclosure of those issues now.

Dear Mr. Gowers,

I am writing to you as a concerned resident of Ringwood, NJ. I understand Ringwood Borough is promoting the permeable cap option for the O'Connor Landfill AOC, in order to locate a new municipal recycling center on it.

I have a general question. Over twenty years time, for example, what are the estimated costs of maintaining the permeable cap? Would these costs exceed those required for full remediation and resurfacing?

Personally, and from what I have learned, I favor the one-time full remediation option as a matter of practicality.

I appreciate your time and and value your response.

Sincerely,
Brian Zach

Dear Sir,
I support a clean-up plan that fully excavates the O'Conner site.

Some residents of the region belong to the Ramapough Lenape Nation and have lived off the land for generations. They want the entire O'Connor site excavated, rather than capped, so they can again hunt small game there and harvest wild carrots, berries and other foods.

As Vivian Milligan, a resident, put it, "We are a unique people with our own culture that involves hunting and fishing and helping ourselves out, but everything in this area has been killed or tainted by the contamination."

Ford should be required to pay for a thorough clean-up of their irresponsible, devastating and at the time profiteering cost-saving way of dumping toxic chemicals.

Thank you,
Carroll E. Arkema

RINGWOOD MINES/LANDFILL SUPERFUND SITE
Citizen's Advisory Group Technical Advisor
Chapin Engineering, A Professional Corporation

Memo

To: Robert P. Spiegel, TAG GM
Ringwood Superfund Site Community Advisory Group
From: R.W. Chapin, M.S., P.E., BCEE, Technical Advisor
RE: Comments on "Superfund Program Proposed Plan, Ringwood Mines/Landfill Superfund Site Operable Unit 2" Dated September 30, 2013
Date: November 6, 2013

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The Proposed Plan presents the USEPA's Preferred Alternative for each of the three disposal areas that comprise Operable Unit 2 [OU2] of the site. As presented in the PP, the Preferred Alternative for each disposal area is summarized below. [Note: the identifying number for each alternative is defined in the Feasibility Study [FS] for that disposal area.]

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  Specific comments are provided below relative the Preferred Alternative for each disposal area.

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1. The PP includes this Remedial Action Objective [RAO] for the Peter's Mine Area: "Permit recreational use of the Peter's Mine Pit Area given its location within the Ringwood State Park". As presented, the PMP will, after completion be a moderately sloping mound surrounded by boulders with fences around methane vents at a number of locations. The area will not have trees and disruption of the cap is not permitted. What types of recreation does this configuration support? Who will the users be? An explanation is required. How will it be maintained if a ring of boulders restricts access? How will burrowing animals be controlled? How does this ecologically restore Ringwood State park?

2. The PP states the need for methane management will be determined during design. The PMP is known to contain organic materials that are undergoing anaerobic degradation [gas bubbling to the surface is readily apparent]. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical– the FS indicates that passive vent wells will be needed. The PMP area will look like a closed landfill [which is what it is], not a recreational area. How does this fulfill the RAO for the PMP? The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.
3. The PP indicates the materials within the PMP will be dewatered, and then compacted. The surface of the PMP pond is the top of the water table—it's groundwater. After the materials are dewatered and compacted, the groundwater will saturate those materials again, recreating the organic muck that is currently present [and making the cost of dewatering a useless expenditure, btw], which has poor structural support capabilities. How is the proposed cap going to be stable and not settle under these conditions? What is the contingency for a cap that fails due to settlement? The PMP is deep, over 60+feet at the east end; how will those materials be effectively compacted? Again, the USEPA must not ignore the implementability of compaction. If those materials cannot be reliably and consistently compacted the costs for this option would increase dramatically. The time to ascertain the constructability of a project is before it is selected. The USEPA should ascertain the compaction now and then incorporate that information into its selection process. This is a data gap that must be closed now, before the ROD, not after during design.
4. Why will it take "a few years" to complete a ROD for the groundwater? What are the specific technical issues causing this time frame?
5. PMP has shallow overburden groundwater contamination emanating for the Peter's Pit. How will the selected remedy rectify this problem, given the wastes will remain within the pit? Has the likelihood of buried drums been considered?
6. There is an on-going study to ascertain whether the PMP is discharging contamination to the adjacent Park Brook. If that study finds the PMP is discharging to the Brook, how can leaving the wastes in-place within the PMP be justified?
7. How long will the "long term monitoring" of the engineering controls last? What financial assurance mechanisms are required for this monitoring?
8. Alternative 6A, as presented in the FS, has an impermeable cap, while this Alternative's description in the PP has a permeable cap. What is the engineering basis for this change? Where is that basis described in detail? USEPA must provide this information.
9. The geofabric is being placed atop the wastes that will remain in the pit to provide structural stability to the soil cap. Trees with deep tap roots will puncture that geofabric. Have the effects of that puncturing been evaluated? If so, where is that data provided?
10. What is the basis for assuming that trees whose roots will penetrate into the wastes left in the PMP will survive?

11. What are the specific concentrations of contaminants that will be allowed to present in the "non-hazardous soil and fill" that will be reused as fill for the PMP? Where are the specific testing protocols that will be use? Will an NJDEP soil reuse plan be prepared and approved for this?

Canon Mine Pit:

1. The PP states the need for methane management for the CMP will be determined during design. The CMP is known to have received municipal wastes that contain organic materials. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue is critical to the future look and possible use of the site. The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.
2. The selected alternative does not address restoration of the site for community use. Apparently that was a driving force behind selection an alternative for the OCD [both Alternatives], but was not a factor here. Why?
3. The proposed actions will result in a closed landfill abutting a residential neighborhood. As a practical matter, it will look exactly as it does today.

O'Connor Disposal Area:

1. Alternative 6A is the preferred alternative, and we concur with the USEPA's selection. The removal of the OCD would, as USEPA states, eliminate long term risks from the midst of a residential area, provide significant benefits to the community living next to the OCD and must be implemented.
2. The "contingency" alternative, 4A, is not acceptable. First, it was introduced into the process for Ringwood at the eleventh hour. Its discussion at the September CAG meeting appeared as an afterthought. NO specific details were provided. This is completely contrary to the USEPA's public participation protocols in general, and considering the Ringwood CAG interactions over the last 6 years it is quite astounding. I note that page 8 of the PP states the potential human exposure due to a future recycling center worker was qualitatively assessed. This statement indicates the USEPA had the Borough's proposal, and specific information on that proposal for sufficient time to have its risk assessment staff conduct a review. How long was that? This data is something the USEPA had, but failed to share with the residents who are most impacted. Why? Who made the decision to exclude the people most directly affected? The USEPA must provide the full details and all information it utilized to propose its "contingency". Until that is done and the residents have had the opportunity to fully vet that information, all actions on the PP must be stayed. In addition, all permits must be secured by the Borough within six months; this is

not realistically feasible. The residents that live directly adjacent to the OCD are adamantly opposed to this "last second" addition.

3. The OCD alternatives include 5A, which uses mine tailings as fill at PMP, and 5B, which leaves all mine tailings in-place. The cost difference is approximately $6 million, or moving the tailings to PMP adds $6 million to the cost of that OCD alternative. However, the movement of those tailings from OCD to the PMP will result in lower costs for the PMP alternative, as well as reduced impacts via less truck traffic through the residential area. Where are those PMP costs quantified? And where is credit taken for those reduced costs?

4. Use of OCD tailings as fill at the PMP will reduce truck traffic thru the residential area; where is that quantified? And which option takes credit for that?
5. The word "contingency" means "something done to prepare for a bad event" [http://www.macmillandictionary.com]. The USEPA's use of the term to describe Alternative 4A indicates they foresee problems with Alternative 6A, their selected remedy. What are the specific issues that USEPA knows of, or fears, that requires use of this description? If USEPA lacks confidence that their selected plan may not be implementable, the residents need full disclosure of those issues now.

Mr. Joe Gowers
U.S Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

RE: National Remedy Review Board Recommendations
Ringwood Mines/ Landfill Superfund Site
Borough of Ringwood, New Jersey

Dece

mber 30, 2013
Dear Mr. Gowers,

I am seriously troubled about the remediation of the Ringwood Mines/ Landfill Super fund Site, located in the Upper Ringwood, New Jersey. Please accept my stake holder comments in to the public record and submit them to the United States Environmental Protection Agency (USEPA) National Remedy Review Board (NNRB). This site is home to the Ramapough Mountain Indian community – a unique ancestral Native American Tribe that has lived off the land for hundreds of years, and long before Ford and other responsible parties decided to use their ancestral homes for a dumping ground. The community and tribe have been recognized by the State of New Jersey and their rights to this land cannot be in dispute. The underprivileged Ramapough Mountain Indian Tribe has suffered premature deaths, rare cancers and autoimmune diseases believed to be linked to toxic waste dumped in their yards decades ago.

Though USEPA declared the site clean years earlier, massive mountains of toxic paint sludge still sat out in the open. The chemical wastes that still remain in the targeted three disposal areas are a taking of our lands and rights. There is no deed or sale of this land that shows their original tribal leaders ever sold this land to anyone. In fact, the Ramapough Tribe's land and its leaders are still making a claim for federal recognition that this land and all the land around it is rightfully theirs. The NRRB should consider this fact and require Ford and USEPA to fully clean all the land impacted by Ford disposal practices. The USEPA is now considering seven options for cleanup of mines filled with toxic waste, potentially leaking into ground water, upstream of the Wanaque Reservoir – a drinking water source for over two million North Jersey residents. I favor the option of completely removing the toxic materials and site remediation and full restoration!

The tribe has hunted and gathered the local flora and fauna as a cultural way of life, which includes subsistence consumption of flora and fauna and will continue to do so. Complete removal of the waste is the only way to ensure the safety and health of the community's food source. USEPA did an extensive study of biota in the area and determined that related chemicals, including lead, are migrating up the food chain not only in vegetables, such as wild carrots, but in mammals and other organisms as well.

Engineering controls require continuing operations and maintenance forever and there is no way that their stabilization can be guaranteed. A cap will not prevent burrowing animals, such as groundhogs, from penetrating that cap and bringing contaminated materials to the surface where they would be uncontrolled. Failure to totally remove the wastes will only benefit the responsible parties. The community has accepted the short-term impacts due to truck traffic that will be required for full removal, but they will not accept leaving the wastes in the community forever.

While the NRRB is not being presented with a ground water remedy at this time, they must nevertheless consider the connection between the chemicals that have been disposed of in the Peter's Mine Pit, Canon Mine Pit and the O'Connor Disposal Area with the surface water and ground water. USEPA and Ford have still not have been able to definitively delineate the ground water. Existing well data indicates some hydraulic connection between the waste disposal areas and ground water contamination. There are documented seeps into the surface water of site-related chemicals. Full removal of all wastes from all three disposal areas would protect current and future Wanaque Reservoir drinking water. This complete remediation supports USEPA's Strategic Plan goals for protecting drinking water supplies. Peter's Mine and portions of the O'Connor Disposal Area are in Ringwood State Park, which is owned by the State of New Jersey and its residents. The USEPA does not have permission from the land owners to contain any waste or place or deed restriction in Ringwood State Park.

Hundreds of thousands of New Jersey families visit the Ringwood State Park yearly. Anything other than full removal of the waste would amount to the taking of State Parkland, and would require the USEPA to have gotten a New Jersey Green Acres Parkland Diversion with Statehouse approval. The USEPA and Ford do not have any such approval and have withdrawn their application for it after 75,000 people signed

a petition against it. There are no valid reasons why their children and grandchildren should continue living in fear after seeing entire generations die. This is the first site in the history of Superfund to be and then relisted due to failure of regulatory agencies and elected officials involved, including the NRRB. Anything short of full removal of all wastes from Peter's Mine Pit, Canon Mine Pit and the O'Connor Disposal Area is an injustice to all the Ramapough Mountain Indian families and community members. Many have become sick and died due to the failures of the USEPA and other federal and state agencies who did not properly remediate this site the first time. In fact, the USEPA and Ford have actually mobilized and told community the cleanup was done no fewer than 6 times. The community deserves closure, and the only way that will happen is with a full remediation and complete removal of all wastes.

Respectfully,

Colin Heasman

Mr. Joe Gowers
U.S Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

January 28, 2014

Dear Joe Gowers,

As a concerned citizen that cares deeply about the cleanup and restoration of the Ringwood Mines/Landfill Superfund site, I request that you fully remove the tens of thousands of pounds of paint sludge that was dumped in my community. This community has and continues to suffer the repercussions of this gross abuse of the land by Ford Motor Company. My community did not bring these toxic and harmful chemicals and should not be held responsible for having to live under these conditions. Because of these circumstances I disagree with the USEPA's decision in selecting Alternative 6A and emphasize the importance for the responsible party to fully clean up and restore this site.

The residents of this area are looking to have all this toxic material excavated in an expedited and effective manner. Many of the residents have children and senior citizens living with them who are more susceptible to the contamination in Ringwood. The people of this area have been experienced staggering rates of premature deaths, rare cancers and autoimmune diseases that are a result of this contamination. It is not possible for the USEPA to turn a blind eye and allow innocent people to suffer and die from the irresponsibility a responsible party. The USEPA cannot allow the responsible party to provide a sub-par remediation than what is needed and asked for by the residents. Residents looking to move cannot sell their homes at market price because buyers do not want to move into a contaminated area. USEPA already walked away from this site once thinking it was clean, and I will not let them do that to our community again.

USEPA must choose to remove all waste and fully clean and restore the Ringwood Mines/Landfill Superfund site back to its original state so that no more people will be negatively affected by the sludge left here. It is time to make a change and take a step in direction towards a cleaner, safer, and toxic free Ringwood. Thank you in advance for your time and consideration of my comments.

Respectfully,

THE CORTER FAMILY
612 SHEEHAN DR.
RINGWOOD N.J. 07456

Dear Mr. Gowers,
I grew up in Paramus, NJ and have chosen to live in Ringwood for the past 15 years because of the natural beauty of the area. I do not want the site capped. The tainted soil should be completely removed at the expense of the Ford Motor Company. It is time, after so many years, that Ford makes this right. I am fearful that my daughter, who is 15 and grew up here, will find out later in life that her health as well as thousands of others has been affected because of the toxic sludge resting in our soil. I feel for the people who live in the area of the dumping and I will help the fight for their rite to reclaim the land and bring it to it's once natural, healthy state. I am a teacher in Paterson, NJ and was the Environmental Advisor for one of the elementary schools. I have told them about the tragic actions of the Ford Motor Company and how it also affects them as well, as that is where their water comes from. Please live up to the name of the agency for which you work and *PROTECT* our environment.
Sincerely and Ever Hopeful,
Debra Storch

Dear Mr. Gowers,
As a resident of Ringwood NJ, I am against merely capping the Super Fund site. The answer to Ford's illegal dumping is not to put a bandaid on the situation but to remediate the site by removing the soil, filling it in and planting on top. Please, please do NOT just cap it. This has the possibility of presenting more problems in the future. We need to fully protect our fresh water supply.
Sincerely,
Debra Storch

RAMAPO COLLEGE OF NEW JERSEY

SCHOOL OF SOCIAL SCIENCE AND HUMAN SERVICES
505 Ramapo Valley Road, Mahwah, NJ 07430-1680
Phone (201) 684-7625 Fax (201) 684-7257

To: Joseph Gowers, Superfund Program, Region 2, U.S. Environmental Protection Agency,
From: Michael R. Edelstein, Ph.D.
Re: Proposed Plan for Ringwood Mines/Landfill Superfund Site Operable Unit Two of September 2013
Date: February 5, 2014

Dear Joe,

As you know, I am an Environmental Psychologist and Professor at Ramapo College of New Jersey. Beyond reviewing the remedial alternatives for which comments are being accepted, I have examined the Environmental Justice report filed for the Ringwood Mines Superfund Site in 2013. As EJ work has been part of my teaching, writing and consulting work since before the Executive Order, I became immediately concerned with a number of observations:

1. The Final EJ Report mirrors the Draft of 2006
2. The Report is narrowly framed around proof of health effects as a basis for showing disproportionate harm.
3. Despite the reliance on health studies as a basis for reaching an EJ finding, the report alludes to future work to be done by the NJDOH and ATSDR, work that I understand has commenced. The report's implication is that the EJ analysis would be finished later and might well be finalized after the remedial strategy has been selected.
4. Even accepting this narrow formulation for a finding of disproportionate harm, it is odd that the EJ report would be issued in final form prior to work being completed that would address whether harm has occurred.
5. In my reading of Executive Order 12898 and the pertinent EPA EJ regulations, disproportionate harm certainly includes proven health effects but refers to a much broader scope of impact. This includes impacts to health that would involve issues of psychological functioning and well being and stress beyond proof of physical harm. It also includes cumulative and multiple environmental impacts that might cause risk of future harm to both physical and psychological health. The resulting impact statements are to assess such factors as risk, risk communication needs, dietary and resource consumption impacts, cultural resources, community health data and occupational exposures, and the community's priorities for environmental cleanup. This list of potential impacts is large and, because the listed impacts are themselves often secondary impacts of other effects, the EJ report must incorporate all significant changes to the environment and health. There are also expectations for consultation and participation by EJ communities.
6. In sum, one could show disproportionate harm even without access to epidemiological

evidence and sources of such harm may be multiple, cumulative and interactive.
7. The finding of an affirmative environmental injustice might influence the decision about what remedial actions are most appropriate. As merely one case in point, it may be that neither inplace waste storage in Peters Mine or waste removal is acceptable from an EJ perspective. As a result, other options might be sought. For illustration, take the possibility of relocation of affected populations. Relocation might change the weighting of available options while protecting the EJ population, assuming that relocation was done effectively.
8. In sum, EPA has not done an adequate EJ analysis. Neither the draft nor the final addresses the required presence of disproportionate harm. This analysis should be completed properly, including full public comment, prior to determining the remedial choice. EPA is not currently in compliance with the Executive Order 12898 nor with its own agency regulations on this matter.
9. At the request of the Ringwood Turtle Clan of the Ramapough-Lenape, my senior capstone Environmental Assessment course has undertaken to do an EJ assessment for this action. I will appreciate agency assistance to the students, and I hope that the resulting work, due to be completed early in May, will be of help to the agency in its own completion of an EJ analysis and assessment in this matter.
10. Despite close of comment, I suggest that no decision be rendered on the remediation alternatives until such time as the matter of disproportionate harm to a recognized EJ population can be fully taken into account.

Michael R. Edelstein, Ph.D.
Professor, Environmental Studies Program and
Masters of Sustainability Studies
Director, Institute for Environmental Studies
Ramapo College of New Jersey
505 Ramapo Valley Road
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201-684-7745
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http://www.ramapo.edu/mass/

To: Joe Gowers, Project Manager Feb. 4, 2014
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 10007

Re: Cleanup of Ringwood NJ Superfund Site and Restoration of Ramapough Tribal Lands
revised

The Ringwood site is the ancestral homeland of the Ramapough Lenape Nation people. I do not live on this land but stay here often. The land is conflicted. The land has been deeply loved a very long time by those who live here but it has been deeply disrespected by those who do not. The time for healing this land is now. This is the time for cleaning up Earth. If we don't do it, she will. If we wish to avoid surprises, as well as possible loss of life and property, it is better to do it now.
The healing of the land is necessary for the healing of the people

I write both in my official capacity and as a grandmother.

I am called Etaoqua, the M'hooquethoth of the Muhheakannuck Nations at Nu Schodack. We are a sovereign people. The M'hooquethoth is advisor to, and spokesperson for, the people and the Sagamore. This person is third in line of responsibility, with the authority to declare war and/or make peace. M'hican leadership positions are ones of responsibility rather than of power, with the main responsibility being the well being of the people and the land, which includes the waters.
The Muhheakannuck Nations at Nu Schodack are a confederation of extended families [sovereign nations] whose ancestors lived in the Greater New York City, New York State and New England areas prior to the European influx which began around 500 years ago.
We enjoy a working relationship with the Ramapough Lenape Nation.
We do not have formal relations with the United States, although the U.S. is well aware of us. Our treaties predate the formation of the United States.

I am concerned with the welfare of my six year old granddaughter and her extended family who live on the site. I myself stay here with them on Peter's Mine Road from time to time and am physically aware of the ongoing health hazards.

I have several concerns regarding the studies and proposals of the EPA for the Ringwood Superfund Site:

There was no indigenous representation at the Review Board as is required. There was no representation of the people living on the site. Where is the democracy?

The cumulative effect of toxins is not taken into account, i.e., the additive and multiplicative effects of short and long term exposure to all the toxins, known and unknown. I am aware that visiting here has impacted me personally in a physical manner.
How much more are the permanent residents being affected?
What is the point of critical reaction for the human body as a result of internal and external exposure?
At what amount and duration of cumulative toxin exposure does the body become noticeably dis-

eased, in that it has impaired function and is disabling uncomfortable?
Why is this not taken into account as part of protecting the environment?
Scientists are becoming increasingly aware that lower and lower amounts of toxins adversely affect humans, animals, and plants physically, mentally and emotionally.
Is this being considered in the proposed cleanup? This information is not reflected in EPA guidelines.

Risk of dis-ease is not only determined by exposure to toxins, but also by negativity, adverse economic factors, sociological conditions, etc.
Is the cumulative effect of these factors being considered?

The impact on the Site as a whole has not been considered.
The studies break everything down into manageable chunks, but there is no recombination of results to form a "big" picture. The impact on those living on the site is not mentioned, never mind considered.
What is the total impact of the EPA proposals?
Why is the impact on humans on the site not a top consideration?

Why is ground water omitted from the consideration when it impacts all living things on the site, as well as potentially affecting the quality of the watershed supplying millions? Whatever needs to be done for the ground water impacts the rest of the site and must be coordinated with other actions. It is not separate. Why is this not a first consideration?
How can actions for the site be decided without, i.e. prior to, the completion of the ground water studies?

Why is the exploration of other means of dealing with toxins not being supported by the EPA and the U.S.? Transporting hazardous material is dangerous and expensive. Moving it from one place to another does not cleanup Earth. There has been some research into chelating and the use of plants to transform toxins but it is not enough. Some of the toxins on the Ringwood site were made less hazardous by the Ford Motor Company itself using technology available years ago. Why has this not been further developed?
Why has not the development of such technology been encouraged by the EPA?

Options

I am in favor of a total cleanup of the imported toxins and the exposed toxins on the Ringwood site, including yet to be located paint sludge left by the Ford operations.

I am not in favor, however, of the following:
1. Moving the toxins to another site, thus contaminating the receiving land. This has already been done in Ringwood. Hazardous materials from outside the site, that were contracted to be safely disposed of, were illegally dumped at the O'Connor area. I am aware that it has been done in other locations. The vibrations of the receiving lands are horrendous.

2. Cleaning up the land with the people still on it. Air born toxins, noise, vibrations, and the possibility of damaging and life threatening land movement preclude this. The residents must be moved to a comparable or better nearby location with comparable or better accommodations where they can live comfortably, with pets and livestock, during cleanup operations.

3. Temporary fixes, such as capping, which must be maintained and renewed, and which may already occur naturally. There is no point spending money to do what Mother Nature does herself. Temporary measures mean they must be periodically reviewed, repaired and/or replaced.

The O'Connor Area:

I am in favor of **EPA option #6a which is a complete cleanup of the "O'Connor Disposal Area**". This land is traditionally used for hunting, herb gathering and recreation by the Ramapough Nation. Hazardous materials were dumped here not only by Ford Motor Company, but also by the Borough of Ringwood. The contaminants are not just by products of mining and car manufacturing.

The Ramapough people live off the land: hunting, fishing, raising chickens, rabbits, turtles, etc., as well as edible plants and herbs. This is increasingly so with the widespread soil depletion of necessary minerals and the widespread contamination of food stuffs available to the general public. Leaving the land polluted severely limits the option for people, plants and animals to be healthy. Restoring the land so that the Ramapough can use it in traditional ways is the preferred option.

The Boro of Ringwood's September 2013 proposal to construct a recycling plant that was not made known to anyone other than the EPA, including the people of Ringwood, until the Nov. 7, 2013 EPA hearing is opposed:
- It violates current zoning code.
- It deprives the people of the traditional use of the land for hunting, gathering and recreation.
- It would further disrupt the residents living nearby.
- It is being proposed by one of the polluters, the Boro of Ringwood.
- The land is not stable enough to support such construction.
- It has not been approved by the people of Ringwood

A complete cleanup of the O'Connor area provides the people of Ringwood with flexibility when considering its future use. The people who currently think they control Ringwood may leave with the next election and their plans with them.

Cannon's Mine Pit: Cannon Mine has been filled mainly with mine tailings originally removed from the Earth so it is not necessary to remove them if they are stable. If nothing else had been put into Cannon's mine, a simple recapping would be sufficient. However, municipal wastes containing organic materials have been added and so must be removed or rendered inert.

Peter's Mine Pit: This situation needs more study, thought and consideration. The ground is unstable. The ground water is contaminated and other contaminants have been introduced into the

mine and the surrounding land. The road has been recently repaired by the Boro of Ringwood yet is again collapsing. There is fear of the loss of the nearby housing.

No matter what is done, it will disrupt the lives of the residents.
Therefore, the preferred solution would include that those living on this site be relocated, preferably nearby as they do not want to move away from the community. Remediation efforts cannot guarantee there will be no further injury nor guarantee the integrity of the homes around Peter's mine during any remediation. The noise and air born/wind carried debris will further injure the inhabitants.

The deeds: Hewitt family deed of 1903 references Peter's mine. It also specifically prohibits pollution of the land. The land use permitted is what is specifically allowed, otherwise it is prohibited.
The Ramapough have faced severe challenges in opposing the violations of the land deeds.

History: Those known as Native Americans, American Indians, indigenous Americans, etc. , hereafter referred to as First Americans, have had no standing in the United States or any of the several states, except through those appointed to "take care of them", such as the Frelinghuysens of New Jersey.

First Americans were considered non citizens until the 1924 Citizenship Act. This act was challenged in court and was finally resolved in 1948. Many First Americans other than those in the states challenging the 1924 act also did not consider themselves to have any rights until the Indian Reorganization Act of June, 1934. Prior to these acts, First Americans had no standing in state and local courts and so could not legally object to pollution and other violations of their lands. They were restricted to federal courts and those who did not recognize the USA were further challenged. And there is a basic problem of trust. There is little.

First Americans' experience with courts has been and continues to be very frustrating. The Ramapough, e.g., paid taxes to two jurisdictions at the same time, the states of New York and New Jersey, until the end of 19th century, when the border question was finally settled. As late as 2012, a sitting federal judge stated in open court in lower Manhattan, that "if the truth is disruptive, it is not allowed."

Our experience with the dominant culture causes us to proceed with all due caution. "Forever" used to last about 20 years. More recently, it has been about 2 years. It continues to shrink.

It was the 1934 Indian Reorganization Act which finally allowed First Americans to manage their own assets. However, this Act was interpreted as diminishing sovereignty and led to refusal to exercise the rights of US citizenship by some, including those "hiding in plain sight" in the Northeast.

There were several other events which interfered with First Americans pursuing violations of the land use and the land itself: The Great Depression 1929 – 1939; World War II from 1940-1945; the

Korean Conflict. Our people were heavily involved in these events and the focus of all was on the conditions facing all.

First Americans are not as concerned with “ownership of land” as defined by written documents but with the use of the land and our responsibility for respecting and caring for the land. We are concerned with the continued well being of the land which is primarily determined by the use and abuse of the ancestral lands we are responsible for. Our goal is to preserve the land [including the waters] for the seventh generation.

In 1955, Ford Motor Company established its plant and kept hazardous substances near the point of origin initially, so contamination was not immediately noticed. However, by 1963, concern began to be openly expressed, and in 1964, Vivian Milligan began her 50 year fight, with the help of other Ramapough, for the cleanup of Ramapough land in Ringwood, NJ, which continues in the present.

Has relocating those who live on the Ringwood site to a nearby development, which would cost less than the proposed cleanup, been considered? If not, why not? If it has, why is this discussion not been included?
Relocation would provide immediate improvement for the health of those living here and allow more time for a more thorough study, an all inclusive proposal, and development of better cleanup methods which would also benefit other sites.
It would have to be done in a manner which takes Ramapough culture and living arrangements into consideration. Existing homes could be bought or traded at what would be fair market value as if there was no toxic contamination, for newly constructed homes, of comparable value or better, nearby. Currently, the homes have no value due to the contamination, yet residents pay taxes as if it was a pristine location.
The occupants of the new homes would continue to pay the existing or equivalent mortgages, hopefully refinanced for better interest rates, an option which is not currently available..
The development must be zoned to permit the raising of food, fish, fowl and animals.
There are less than 50 homes on the site. Even at a cost of $250,000 per dwelling, replacing the existing homes would cost around $12.5 million.

Whatever is decided, the input of the residents affected should be included at every major decision point. This would go a long way toward healing the land, the waters, and the people.

Respectfully,
Etaoqua, M’hooquethoth
Muhheakannuck Nations at Nu Schodack
P O Box 266
Rahway, NJ 07065-0266

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Gary P. Gengel
Direct Dial: 212.906.4690
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File No. 019942-0059

February 5, 2014

VIA E-MAIL AND FEDERAL EXPRESS

Mr. Joseph Gowers
Remedial Project Manager
U.S. EPA, Region 2
290 Broadway, 19th Floor
New York, NY 10007-1866

Re: Comment of Ford Motor Company to USEPA Proposed Plan for Ringwood Mines/Landfill Superfund Site

Dear Mr. Gowers:

On behalf of Ford Motor Company ("Ford"), we submit these comments to the U.S. Environmental Protection Agency's ("USEPA") Proposed Plan, issued on September 30, 2013, for the three land-based areas of concern ("ACs") – Cannon Mine Pit ("CMP"), Peter's Mine Pit ("PMP"), and O'Connor Disposal Area ("OCDA"), which together comprise Operable Unit Two of the Ringwood Mines/Landfill Superfund Site ("Site"). In addition to this letter, these comments include four appendices. Appendix A contains the figures referenced throughout these comments. Appendices B and C correct, respectively, (1) certain technical errors in the Proposed Plan and (2) the comments submitted to USEPA on November 6, 2013 and January 28, 2014 by Richard Chapin, the Technical Advisor to the Site's Community Advisory Group. Appendix D contains a copy of a presentation prepared by Ford's technical consultant, ARCADIS, on the appropriate final remedy for PMP.

I. Executive Summary

The three ACs for the Site pose little-to-no risk to human health or the environment. This has been established in the Administrative Record by multiple risk assessments approved by the USEPA. Those assessments conclude that even the most significant risk exposure scenario is minimal risk, that of a "hunter" living on a subsistence diet of plant and game obtained solely from the Site ACs – an unrealistic, if not impossible, scenario for

three land areas comprising a total of only 22 acres.[1] In any event, USEPA certainly has not established in the Administrative Record that such hunters exist.[2]

This low and very conservative risk can be entirely eliminated at all three ACs through the placement of landfill caps – a remedial technology which is USEPA's presumptive remedy at landfill sites, has been demonstrated to be effective at sites throughout the country, and can be enhanced for recreational activity and other productive uses through surface contouring, tree and vegetation placement and/or the construction of land improvements (such as the new recycling center proposed by the Borough of Ringwood ("Borough")). However, for this low-risk Site where capping is a feasible, as well as the presumptive, remedy, USEPA recommends in its Proposed Plan capping at only one of the three ACs – CMP. At PMP, USEPA recommends a partial excavation of the "collar" area followed by capping, while at OCDA, USEPA recommends a complete excavation (or capping only if the Borough relocates its recycling center to OCDA, which it plans to do).

With respect to PMP and OCDA, USEPA's attempt to justify this divergence from national policy and precedent favoring capping over excavation is not based on the regulations governing selection of remedies at Superfund Sites, the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). USEPA does not state why capping is not protective, nor does it explain how excavation at PMP and OCDA is superior to capping based on any of the nine selection criteria set forth in the NCP. Indeed, USEPA provides only a cursory acknowledgement that excavation will have greater negative Short-Term Effectiveness impacts over capping, due to the increased traffic, air pollution, and high risk of accidents that will accompany the near-doubling of trucks required for excavation. Moreover, USEPA ignores the heightened Long-Term Effectiveness issues associated with excavation (*e.g.*, that excavation at PMP might disrupt the established bio-remediating equilibrium in the groundwater) and fails to explain how it came to select excavation remedies over $37 million more expensive than capping alternatives without conducting the analysis required by the NCP.

While USEPA offers as a partial explanation the impact capping could have on trespassers to the privately-owned OCDA and its desire for Ford to "restore" the ACs to their natural condition prior to decades of mining activity by the U.S. government and other parties, neither of these are criteria under the NCP for selection of a remedy – particularly, given excavation's increased risks to human health and the great cost differential. Ultimately, USEPA fails to justify its divergence from the NCP and its own guidance, because it cannot. Given these material errors in the selection of the remedies at the Site, Ford urges

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[1] At the OCDA, a theoretical potential slight risk to a young child resident was calculated due to arsenic in soil. This is an unlikely scenario given that the model assumes a child is living only on OCDA for 6 years of his or her life, directly exposed to soil 24 hours a day for 350 days a year. Arsenic is found in both paint sludge and the ubiquitous deposits of mine tailings across the area. Given the relative abundance of mine tailings compared to paint sludge, the mine tailings are likely the largest contributor to a theoretical potential arsenic risk.

[2] Moreover, there is no risk for a hiker, dog walker or trespasser for any of the ACs.

USEPA to reconsider its remedy recommendations and select, based on an analysis of the NCP requirements, capping remedies which are the determination required under the law.

II. For All Three ACs, Capping Remedies Are Fully Protective and Meet or Exceed All NCP Requirements

All of the human health risk assessments approved by USEPA show that the concentrations of constituents of potential concern ("COPCs") in PMP, OCDA and CMP – as they currently exist – pose little-to-no additional risk to humans or the environment. Indeed, the ***only*** risk scenario for PMP, OCDA and CMP showing ***any*** significant potential risk (under very conservative assumptions) was the "hunter" scenario, due to repeated or chronic ingestion of low levels of lead, arsenic and other metals contained in area plant and game tissue. However, even setting aside the unrealistic nature of the "hunter" scenario – the 22 acres comprising the three ACs could not ever provide enough plant and game to support a local hunter's subsistence diet – this low risk of exposure would be completely eliminated through capping.[3] Moreover, there is no risk for a hiker, dog walker or trespasser for any of the ACs.

USEPA concedes as much in its discussion of PMP in the Proposed Plan, stating that capping is "protective" and would "eliminate exposure pathways to the waste material by . . . containing the fill under an engineered cap."[4] In short, this Site clearly fits the definition of a low-level threat waste site – one where the "source materials that generally can be reliably contained and that would present only a low risk in the event of release."[5] To the extent there is any residual risk at any AOC (*i.e.*, to "hunters"), a capping remedy would fully eliminate the potential exposure and associated risk, and effectively render the areas safe to human health.

More broadly, the NCP prescribes as a matter of law nine exclusive criteria which USEPA must follow in evaluating remedial alternatives: two "threshold" criteria (Overall Protection of Human Health and the Environment; and Compliance with Applicable or Relevant and Appropriate Requirements ("ARARs")); five "balancing" criteria (Long-Term Effectiveness and Permanence; Reduction of Toxicity, Mobility or Volume Through Treatment; Short-Term Effectiveness; Implementability; and Cost); and two "modifying" criteria (State Acceptance and Community Acceptance).[6] The USEPA-approved risk assessments and feasibility studies[7] confirm that capping would meet or exceed all nine threshold and balancing criteria at all three ACs:

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[3] *See* Note 1.

[4] Proposed Plan, p. 16.

[5] *See* USEPA, 1991b.

[6] *See* 40 CFR § 300.430(e)(9)(iii).

[7] ARCADIS 2011, 2012a and 2012b.

(1) ***Overall Protection of Human Health and the Environment:*** As noted above, capping is fully protective of human health and the environment because it eliminates the potential exposure pathways for human and ecological receptors: direct contact and ingestion. Capping and grading also reduce potential exposure by mitigating migration of constituents to surface water and shallow groundwater immediately downgradient from the three ACs. In contrast, excavation remedies actually ***increase*** the risk to human health and the environment. Indeed, the 43,800 truck trips required for the USEPA-recommended remedies (as opposed to the 10,314 required for capping) would have extensive noise, traffic and air pollution consequences throughout the Ringwood area for years (graphically demonstrated in Figures 3 & 4).[8] Furthermore, USEPA's recommended remedies will statistically result in 10.7 more vehicle crashes associated with trucking than capping remedies, and 1.8 incremental human injuries – supposedly while seeking to protect public health. In addition, selection of the excavation alternatives at OCDA and PMP would also disregard USEPA's own sustainability policy that includes the "reduction of air emissions and greenhouse gas production" and the "minimization of material use and waste production" as central objectives.[9]

(2) ***Compliance with ARARs:*** Capping fully satisfies all chemical-specific, action-specific and location-specific ARARs and To-Be-Considereds ("TBCs"), such as the wetland mitigation requirement.

(3) ***Long-Term Effectiveness and Permanence:*** Capping is a proven, stable, and permanent solution that will maintain its effectiveness over time. Long-term monitoring and maintenance programs, along with institutional controls, provide further assurance of effectiveness and permanence.[10]

(4) ***Reduction of Toxicity, Mobility and Volume Through Treatment:*** Source removal at the Site has already significantly reduced the impacts across the Site to the point where today only small areas of concern remain – and it is these areas that are to be addressed through selection of final remedies. Indeed, the NRRB noted this, stating: "[T]he Board notes that removal actions have addressed much of the total site contamination, including removal actions taken since the site's relisting. The Board further notes that, typically, the remedy selection process, including risk assessment and alternatives analysis, takes into account the risk posed by site contamination and also considers actions taken to remove hazardous substances"[11] Given this source removal, engineered caps placed over the former mine pits and OCDA will reduce mobility of the residual low-level threat wastes and associated constituents, and analytical data from the past 20 years indicate that natural

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[8] *See* Figures 3 & 4.

[9] *See* U.S. Environmental Protection Agency, Region 2, "Clean & Green" Policy (2009).

[10] *See* U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Operation and Maintenance in the Superfund Program (May 2001), at p. 6 ("'Long-term effectiveness and permanence' is the criterion whereby O&M requirements are evaluated [during the RI/FS phase].").

[11] National Remedy Review Board Recommendations for the Ringwood Mines/Landfill Superfund Site ("NRRB Letter"), (Sept. 30, 2013), at p. 3.

bio-remediation processes occurring in soil and groundwater are active in controlling the mass flux of remaining low-level constituent concentrations.

(5) ***Short-Term Effectiveness:*** Capping is effective in the short-term and can be implemented quickly with little disruption to the local community. Although the community, workers and environment may be temporarily affected by traffic and dust from trucks hauling materials to the Site for placement during cap construction, capping's potential impacts would be significantly less and of shorter duration (834 days for capping vs. 1,276 days for USEPA's recommended remedies) than excavation, which would require waste materials to be transported to an off-site facility via local roads, with attendant safety implications (see Figure 4 – Truck Routes).

(6) ***Implementability:*** Capping technologies are proven and reliably deployed using standard construction techniques, equipment and workers. Capping also takes less time to implement than excavation and so would result in less delay in obtaining Site closure. In addition, with the recommended excavation remedy at OCDA, the exposure of the mine tailings, prior to the placement of new topsoil, would risk the movement of mine tailings (via the air or slurry spills) into area surface water regardless of the protections that may be put into place.

(7) ***Cost:*** As discussed in Sections III.A and IV.A below, there is no rational basis under the NCP's Cost-Effectiveness balancing formula for the selection of excavation remedies at PMP and OCDA, respectively, which collectively are over $37 million more expensive than capping alternatives.

(8) ***Community Acceptance:*** While this NCP criterion is not formally evaluated until after remedy selection, Ford notes that the Borough of Ringwood – the elected legal entity representing the interests of the Ringwood community, not merely individual voices – has publicly concluded, after an exhaustive review of the Site data by its technical consultant, EXCEL Environmental Resources, Inc., that capping is the most appropriate remedy for all three land-based ACs. In its May 28, 2013 submittal to the NRRB, the Borough stated that "the data indicate that selection of a remedy other than the use of Engineering and Institutional Controls [*i.e.*, capping] is not technically justified or appropriate for the documented risks."[12] Furthermore, the average attendance at CAG meetings is only three or four members out of a community of 12,000 Ringwood residents, and as such the CAG is clearly not a representative voice of the local residents. And even the CAG members are divided on removal at PMP.[13]

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[12] Borough of Ringwood NRRB Submission, May 28, 2013, at p. 14.

[13] *See, e.g.*, Comment of Vivian Milligan (long-term CAG member and life-long Upper Ringwood resident), Minutes of Special Meeting of the Council of the Borough of Ringwood, May 23, 2013 ("When it comes to the Cannon Pit and the Peter's Mine Pit, I'm not totally sure about the excavating and digging. I will tell you that these mines are all connected basically underground and I do have a fear as to what would happen if they start digging. They just found two big mine holes over by the Stonetown gas

(9) ***State Acceptance:*** While this NCP criterion is not formally evaluated until after remedy selection, it is notable that in the State's comments to the NRRB, it did not concur in the OCDA removal remedy.

III. Peter's Mine Pit: The Remedy for PMP Should Be a Cap, Without Excavation of the Collar Area.

A. USEPA erred by failing to follow NCP procedures and national guidance in selecting excavation of the PMP collar area.

While USEPA purported to evaluate each of the remedial alternatives for PMP under the NCP criteria,[14] USEPA failed to engage in the depth of analysis required under the NCP prior to remedy selection. Specifically, USEPA failed to conduct a complete and meaningful evaluation of the various remedial alternatives. For example, under the NCP, USEPA is required to determine a remedial alternative's cost-effectiveness "by evaluating the following three of the five balancing criteria . . . to determine overall effectiveness: Long-Term Effectiveness and Permanence; Reduction of Toxicity, Mobility or Volume Through Treatment; and Short-Term Effectiveness."[15]

However, without engaging in this ***mandatory*** balancing analysis, and despite the more than 1,232 tons of material already removed from PMP area in targeted removals,[16] USEPA selected a remedial alternative (Alternative 6A – excavation of "collar" area, followed by capping) over $7 million more expensive than remedial alternatives, such as Alternative 3 (engineered permeable cap), which USEPA admits satisfy all NCP criteria.[17] At no point in the Proposed Plan does USEPA explain how excavation is so superior to capping alone that it is reasonable to select a remedy over three times as expensive as an equally-protective alternative. Indeed, USEPA even admits that Alternative 3 (capping) is superior to Alternative 6A (excavation) in terms of the Short-Term Effectiveness criterion due to 6A's "pos[ing] a greater risk of exposure to contaminated fill material than the previously discussed alternatives due to the excavation of fill material."[18]

Ford also provided detailed evidence of other Short-Term Effectiveness impacts that the proposed excavation remedies would have vis-à-vis capping. As noted above, according to an analysis of the traffic safety impacts of the remedial alternatives using data compiled by Sam Schwartz Engineering, the remedies recommended by USEPA in the Proposed Plan (*i.e.*, capping of CMP, excavation of OCDA, and partial excavation and capping of PMP)

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pipeline two weeks ago. None of us know when we are going to wake up and have our houses gone. It is a dangerous thought with the pits.").

[14] 40 CFR § 300.430(e)(9)(iii).

[15] 40 CFR § 300.430(f)(1)(ii)(D).

[16] *See* Appendix D – PMP Presentation.

[17] *See* Proposed Plan, pp. 16-19.

[18] *Id.*, p. 18.

would statistically result in a risk of 12.78 crashes, as compared to 2.11 crashes for capping of all three land areas, and 1.8 incremental human injuries.[19] Indeed, the partial excavation and capping of PMP alone would double the risk of crashes associated with the capping of PMP (2.48 crashes vs. 1.20 crashes). In contrast, even without implementation of a remedy, the "hunter" risk is only 4 x 10^{-4} (*i.e.*, an increased risk of cancer for 4 in every 10,000 people). In other words, an excavation is far more likely to negatively impact human health than contaminants at the Site, even without capping.

In addition to the safety implications, the 10,700 truck trips required for the USEPA-recommended remedy for PMP (as opposed to the 6,000 required for capping) would have extensive noise, traffic and air pollution consequences throughout the Ringwood area for years (impact of recommended remedies graphically demonstrated in Figures 3 & 4).[20] Thus, USEPA's selection of excavation over capping, despite the increased risks and Short-Term Effectiveness impacts, does not indicate that USEPA has fully taken into account, as required under CERCLA Section 121(b)(1)(G), the "potential threat to human health and the environment associated with excavation, transportation, and re-disposal."

Moreover, at no point does USEPA explain how excavation and capping is more protective than capping alone in terms of the Long-Term Effectiveness criterion. While USEPA obliquely indicates that capping would not be as effective long-term because the caps "would need to be maintained to remain effective in the long term,"[21] USEPA's proposed remedy includes capping after excavation so this is no justification whatsoever. In addition, such a conclusion could not be held to be determinative given that USEPA offers no explanation why the Site's responsible parties would be unable to maintain the cap (cap maintenance is included in all proposed capping remedies), as is routinely done nationwide at Superfund sites. Moreover, USEPA does not explain how excavation's supposed long-term benefit of not requiring maintenance outweighs the numerous increased long-term risks and logical inconsistencies associated with excavation, including:

(1) ***Removal of Original Cap:*** Over fifty percent of any PMP excavation would entail the removal of the original soil cap, installed in 1971, and which still provides a protective barrier mitigating direct contact and ingestion risks. Therefore, in effect, USEPA is recommending that a cap be excavated in order to build another cap in the same location.

(2) ***Difference Between Removed Fill and Fill Left in Place:*** Core samples taken at PMP confirm that the fill material below the water table, which USEPA proposes remain after excavation, is similar to the fill material USEPA proposes to have removed. ***The NRRB also noted this and recommended that USEPA "provide further justification for this fill***

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[19] *See* Figure 4.

[20] *See* Figures 3 & 4.

[21] *Id.*, p. 17.

material's off-site disposal rather than its consolidation within Peter's Mine Pit,"[22] which USEPA never did.

(3) ***Risks of Changed Groundwater and Surface Stability Conditions:*** Nearly 30 years of sampling have confirmed that groundwater and surface water flows are understood and can be conceptually modeled accurately. Further, the data show that constituents of concern ("COCs") are not moving offsite and that natural processes are reducing concentrations, mobility and transport of the COCs at the Site. Excavation at PMP would introduce a large element of uncertainty by disturbing the current beneficial groundwater equilibrium (see Appendix D – PMP Presentation) and increasing exposure due to erosion. Ford also notes that, given the extensive and not clearly identified (or delineated) inner-workings and inter-connections of the mines, even some members of the CAG are opposed to excavation at PMP.[23]

USEPA's selection of excavation is also inconsistent with the national policy and practice of containment being the presumptive remedy for former landfill sites. The express "expectation" set forth in the NCP is that USEPA will "use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where waste treatment is impracticable."[24] Nor does it accord with prior USEPA published guidance that: "Waste in CERCLA landfills usually is present in large volumes and is a heterogeneous mixture of municipal waste frequently co-disposed with industrial and/or hazardous waste. Because treatment usually is impracticable, EPA generally considers containment to be the appropriate response action, or the 'presumptive remedy,' for the source areas of municipal landfill sites."[25] In other words, both national guidance and the NCP confirm that caps are fully effective in the long-term, notwithstanding their need for regular maintenance. However, in the Proposed Plan, USEPA neither acknowledges nor explains this inconsistency.

Finally, USEPA (Region 2) failed to respond to the concerns raised by the National Remedy Review Board regarding USEPA's recommended PMP remedy:

> The Region's proposed Peter's Mine remedy . . . includes . . . the excavation and off-site disposal of the historic fill materials located above the water table in the 'collar' area of the pit. This fill material . . . appears to be similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit. The Board recommends that . . . ***the decision documents provide further***

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[22] NRRB Letter, at p. 5 (emphasis added).

[23] *See* Note 13.

[24] 40 CFR § 300.430(a)(iii).

[25] U.S. Environmental Protection Agency, Presumptive Remedy for CERCLA Municipal Landfill Sites, *at* http://www.epa.gov/superfund/policy/remedy/presump/clms.htm (last visited Dec. 5, 2013).

justification for this fill material's off-site disposal rather than its consolidation within the Peter's Mine Pit . . . .[26]

Given that the NRRB is the body charged with reviewing remedial decisions and ensuring national consistency among the various USEPA regions, Region 2's failure to address the NRRB's concerns only underscores how far it has departed from NCP requirements and national practice.

In summary, USEPA selected a remedial alternative that creates risks to human health and the environment and is over three times as expensive as other alternatives that fully satisfy all the NCP criteria without engaging in the analysis required under the NCP. USEPA has not attempted to explain its decision, and we believe it would be hard-pressed to provide a technically-supported justification for selecting excavation over capping, given capping's superiority to excavation in terms of Protection of Human Health and the Environment (less risk of traffic injuries), Implementability (a cap can be constructed well before even the commencement of excavation), Long-Term Effectiveness (no risks to area stability or groundwater), and Short-Term Effectiveness (less noise, traffic, air pollution, and risks of accidents) (see chart below comparing satisfaction of NCP criteria). Given this, USEPA's selection of excavation at PMP would be an arbitrary and capricious action and must be reconsidered.[27]

Area of Concern	CERCLA Criteria	Construction of Permeable Cap *(Targeted removal already completed to date)*	Excavation and Offsite Disposal
Peter's Mine Pit			
	Protection of human health and environment[1]	✓	
	Compliance with ARARs	✓	✓
	Long-term effectiveness and permanence	✓	
	Reduction of mobility, toxicity, or volume through treatment	✓[2]	✓
	Short-term effectiveness[3]	✓	
	Implementability[4]	✓	
	Cost	$3M – $5M	**$11M**

[26] NRRB Letter, at p. 5 (emphasis added).

[27] For similar reasons, no weight should be accorded to the NJDEP's recommendation in its submission to the NRRB (p. 3) that the "collar" area be excavated. Given that no justification relating to protection of human health and the environment was provided by NJDEP, it can only be concluded that the recommendation relates to NJDEP's desire, as the property owner, to re-contour the site area, which is not based upon the NCP decision criteria.

Notes:
✓ - Most effective in meeting the CERCLA criterion; Equally weighted when both alternatives are checked.

1. The capping alternative has far less risk to human health and the environment than the excavation alternative. According to an analysis of the traffic safety impacts of the remedial alternatives using data compiled by Sam Schwartz Engineering, the remedies recommended by USEPA in the Proposed Plan for the three ACs would statistically result in a risk of 12.78 crashes, as compared to 2.11 crashes for capping all three land ACs. The excavation alternatives would also negatively affect the environment due to the comparatively heavier greenhouse gas and other air emissions resulting from the 33,486 additional truck trips required to conduct the removals.
2. Waste materials have already been removed from the ACs resulting in reduction of volume; additional waste material would be removed under the excavation alternative.
3. The excavation alternatives would have significantly less short-term effectiveness than the capping alternatives due to the excavation alternatives' longer construction times, and increased truck traffic.
4. While both alternatives are implementable, the excavation alternative is comparatively more difficult to implement and would take longer to implement than the capping alternative due to the greater volume of material necessary to be removed.

B. A cap's protectiveness and attractiveness can be further enhanced, if necessary, through cap design.

As discussed above, a cap at PMP would fully protect human health and the environment by eliminating exposure pathways to the underlying fill. Any such cap can be designed to ensure the long-term integrity of the cap. For example, in place of fencing, trees, large rocks and thorny bushes can be placed around the perimeter to prevent maintenance issues from trespassing ATVs and other vehicles. Additionally, the cap can be designed to allow for trees to grow on top, which would be visually-appealing, allow for phyto-remediation of shallow groundwater seeps, and serve to further stabilize the cap.

IV. O'Connor Disposal Area

A. Construction of a recycling center on top of a cap at OCDA would be fully protective and would provide for a productive reuse of the Borough property.

For the record, Ford notes that USEPA erred in selecting Alternative 5A (excavation) as the remedy for OCDA. As with its PMP analysis (*see* Section III.A above), USEPA failed to engage in a complete NCP analysis – which can be considered an even more egregious failure to comply with the NCP in the context of OCDA, given that the selected excavation remedy results in greater and real risk to human health and is ***over $30 million*** more expensive than capping remedies which satisfy all the NCP criteria. However, despite USEPA's failure to follow NCP procedures to adopt a permeable engineered cap (Alternative 4A) which, by itself, would: (1) be fully protective of human health and the environment,[28] (2) be equal or superior to excavation with respect to all other NCP criteria (see chart below comparing satisfaction of NCP criteria), and (3) potentially have the acceptance of the New Jersey Department of Environmental Protection,[29] Ford does not object to USEPA's adoption of Alternative 4A (capping), with the incorporation of a new recycling center on top of the cap.

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[28] *See* Proposed Plan, p. 20.

[29] *See* Comment of New Jersey Department of Environmental Protection to NRRB (May 2013) (not requesting or recommending at excavation at OCDA).

Area of Concern	CERCLA Criteria	Construction of Permeable Cap *(Targeted removal already completed to date)*	Excavation and Offsite Disposal
O'Connor Disposal Area			
	Protection of human health and environment[1]	✓	
	Compliance with ARARs	✓	✓
	Long-term effectiveness and permanence	✓	✓
	Reduction of mobility, toxicity, or volume through treatment	✓[2]	✓
	Short-term effectiveness[3]	✓	
	Implementability[4]	✓	
	Cost	$6M	**$26M – $32M**

Notes:
✓ - Most effective in meeting the CERCLA criterion; Equally weighted when both alternatives are checked.

1. The capping alternative has far less risk to human health and the environment than the excavation alternative. According to an analysis of the traffic safety impacts of the remedial alternatives using data compiled by Sam Schwartz Engineering, the remedies recommended by USEPA in the Proposed Plan for the three ACs would statistically result in a risk of 12.78 crashes, as compared to 2.11 crashes for capping all three land ACs. The excavation alternatives would also negatively affect the environment due to the comparatively heavier greenhouse gas and other air emissions resulting from the 33,486 additional truck trips required to conduct the removals.
2. Waste materials have already been removed from the ACs resulting in reduction of volume; additional waste material would be removed under the excavation alternative.
3. The excavation alternatives would have significantly less short-term effectiveness than the capping alternatives due to the excavation alternatives' longer construction times, and increased truck traffic.
4. While both alternatives are implementable, the excavation alternative is comparatively more difficult to implement and would take longer to implement than the capping alternative due to the greater volume of material necessary to be removed.

B. Progress toward construction of Borough recycling center since Proposed Plan.

Since USEPA issued its Proposed Plan on September 30, 2013, Ford notes that the Borough of Ringwood has made significant progress with regard to constructing a new recycling center on top of an OCDA cap, and that on December 17, 2013, the Borough Municipal Council unanimously approved a resolution authorizing the construction of the new recycling center. We understand the Borough's comments on the Proposed Plan will provide additional detail on the status.

C. In selecting excavation as the remedy at OCDA, USEPA erred by according improper weight to a small group of local residents' desire to trespass on privately-owned property and alleged hunting and gathering activities at the Site are not established in the administrative record.

In selecting excavation as the preferred remedy at OCDA, USEPA attempted to justify its decision by stating that selection of excavation would "[1] allow restoration of the area to approximately its natural condition; [2] allow unrestricted use of the area by local

residents to pursue culturally and traditionally significant activities;[30] [3] eliminate the need for and cost of perpetual maintenance of a cap; and [4] eliminate the perpetual irritant to the local community that a capped and restricted access area would represent."[31] These factors are inapplicable to the NCP and/or represent a material misunderstanding by USEPA of the Site history and conditions:

(1) ***Restoration of natural conditions***: The Site had been used for magnetite mining for well over a century and was operated as recently as the late 1950s (*see* Figure 1). OCDA, in particular – prior to becoming a local dumping ground – was the site of a large slurry pond for mining operations by the U.S. government and others. USEPA has no authority under CERCLA to require, under the guise of cleaning up a landfill site, that OCDA be "restored" to pre-mining conditions. To the extent USEPA desires "restoration," USEPA should seek such restoration from the entity that last mined the Site – the U.S. government.

(2) ***Unrestricted use of area by local residents for cultural and traditional activities:*** OCDA is private property, owned by the Borough of Ringwood, and as such no person other than the Borough possesses the right to use the property. Furthermore, there is no authority within the NCP for the selection of a remedy based on the convenience of trespassers. Since local residents possess no right to access the privately-owned OCDA, whether the residents' desired conduct at the OCDA area is rooted in local culture or traditions is irrelevant to the NCP inquiry. Furthermore, as noted above, the OCDA area has been a local dumping area for decades and, prior to that, a slurry pond for mining operations – as such, assertions regarding historic cultural or traditional activities in the OCDA area are simply not credible and cannot form the basis for the selection of a remedy. Figure 5 demonstrates, using aerial photographs, how unlikely it is that the OCDA was a suitable area for hunting and gathering activities by local residents over the past century.

(3) ***Eliminate the need for and cost of perpetual cap maintenance:*** As noted above, USEPA failed to engage in an NCP analysis in making its remedy selection for OCDA. Given that, it strains credulity how cap maintenance costs (net present worth of $484,900)[32] can be used to justify the selection of an excavation remedy costing more than $30 million over capping.

(4) ***Eliminate the perpetual irritant of a cap:*** As discussed above, access to the OCDA area would be restricted under any remedial scenario, including the selected full excavation remedial alternative, as OCDA is privately-owned property. As to the visual impact of a cap on the local community (assuming that the property is not developed into a commercial or industrial use by its owner, the Borough), USEPA asserts that a cap would be an irritant without any mention of beautification techniques that are routinely

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[30] *See also* Presentation of Joseph Gowers, USEPA, Public Meeting Transcript, p. 51 ("And the EPA believes that implementation of Alternative 5A [excavation] would allow for this portion of the site [OCDA] to be used by area residents without restriction").

[31] Proposed Plan, p. 24.

[32] *See* Proposed Plan, p. 15 (Alternative No. 3 net present worth for O&M).

incorporated into caps across the country, including surface contouring, and the planting of trees and other vegetation, which would also serve in further stabilizing the cap. Moreover, the strategic placement of trees, thorny bushes and boulders around the perimeter of the capped area could also serve, in lieu of extensive fencing or signage, to address USEPA's concerns regarding the impact of potential trespassers on the cap's integrity – particularly, by unauthorized ATV-users.

V. Cannon Mine Pit

Ford agrees that capping is the appropriate remedy for CMP. As with OCDA and PMP, all of the USEPA-approved risk assessments confirm that capping would be fully protective of human health and the environment, fully satisfy all other NCP criteria, and "achieve a comparable level of long-term risk reduction with less impact on the community and less cost than other protective alternatives."[33]

VI. Definition of the Ringwood Mines/Landfill Superfund Site

At the Public Meeting to discuss the Proposed Plan on November 7, 2013, several people commented on the economic harm that living on or near the Site has caused them, including stigma, reduced property values, and difficulty obtaining mortgages and other loans.[34] To ameliorate the negative impacts to local residents, Ford suggests that in issuing the Record of Decision for the Site, which spans over 500 acres, USEPA narrow the Site boundaries to encompass only the three land-based areas of concern. Such an act would not prejudice USEPA's authority to compel cleanup outside those areas or revise the Site boundaries again in the future, if ever warranted, and would reduce the number of residents affected by proximity to a "Superfund site."

VII. Conclusion

The Administrative Record clearly shows that the Site is already low-risk. All USEPA-approved risk assessments and remedial investigations have concluded that, apart from direct contact, the materials in the Site ACs – either alone or in conjunction with the rest of the Site – pose no additional risk to humans, wildlife or the environment, and no threat to groundwater, surface water or drinking water.[35] Given this, USEPA has failed to provide any explanation as to how its recommended excavation remedies at OCDA and PMP are justifiable in light of the presumptive capping remedy at such sites and the increased duration, cost, accident injury risk (traffic, workplace), and other short-term impacts of excavation. Furthermore, these remedy selections cannot be justified or saved

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[33] Proposed Plan, p. 23.

[34] *See, e.g.*, Comment of Marcy Mineheart, Public Meeting Transcript, p. 194, ln 3-10 ("I can't re-mortgage my house. I can't send my kids to school because I'm adjacent from a Superfund site. When you put them caps on, is my property going to be no longer considered part of the Superfund site? Because I went for an appraisal, and they can't give me an appraisal. I could show you the letter.").

[35] *See* ARCADIS 2011, 2012a, 2012b.

by the discretion typically given USEPA in matters of remedy selection due to its "specialized knowledge and expertise." Indeed, the Third Circuit has held that a court shall not uphold a response action selection by USEPA where an objecting party "can demonstrate, on the administrative record, that the decision was arbitrary and capricious or otherwise not in accordance with the law."[36]

For the reasons expressed in this letter, it ***can*** be clearly demonstrated on the Administrative Record that USEPA's remedy recommendations for this Site are not in accordance with the law or even USEPA's own precedent and guidance. This material failure on USEPA's part can only be remedied by a thorough re-analysis of the selections in the Proposed Plan incorporating all NCP requirements and USEPA guidance publications.

VIII. Appendices & Figures

A. Appendix A – Figures

1. Figure 1: Site Timeline
2. Figure 2: Site Areas of Concern
3. Figure 3: Comparison of Remedial Options for PMP
4. Figure 4: Truck Routes for USEPA-Recommended Remedies
5. Figure 5: Evaluation of Potential Time Frame for Hunting and Gathering Activities in OCDA

B. Appendix B – Technical Comments on Proposed Plan

C. Appendix C – Technical Comments on Richard Chapin Comment

D. Appendix D – PMP Presentation

Sincerely,

Gary P. Gengel
of LATHAM & WATKINS LLP

Enclosures

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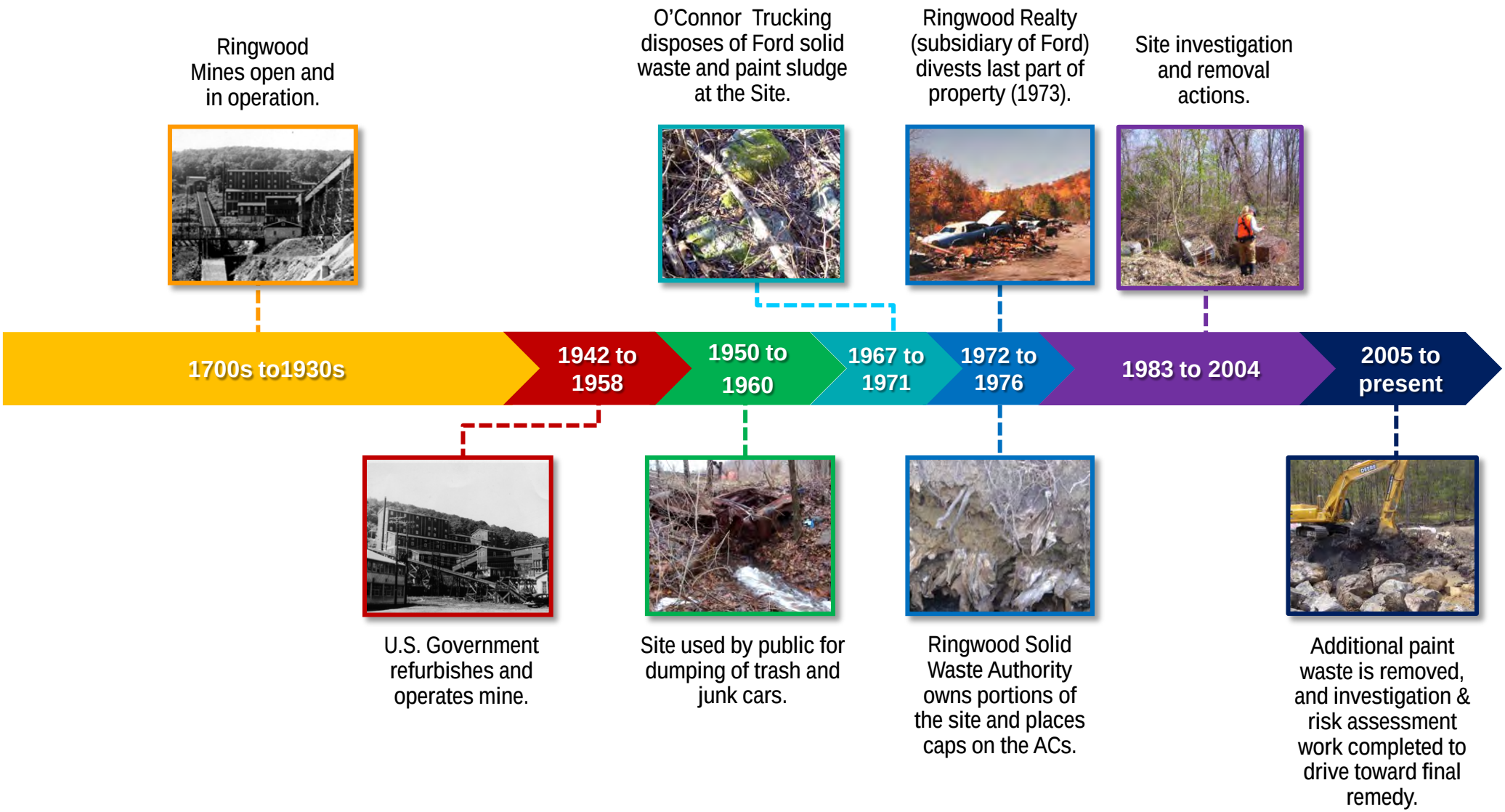
[36] *United States v. E.I. DuPont de Nemours & Co.*, 432 F.3d 161, 179 (3d Cir. 2005). *See also United States v. Sensient Colors*, 580 F. Supp.2d 369, 381 (D.N.J. 2008) (same).

Appendix A

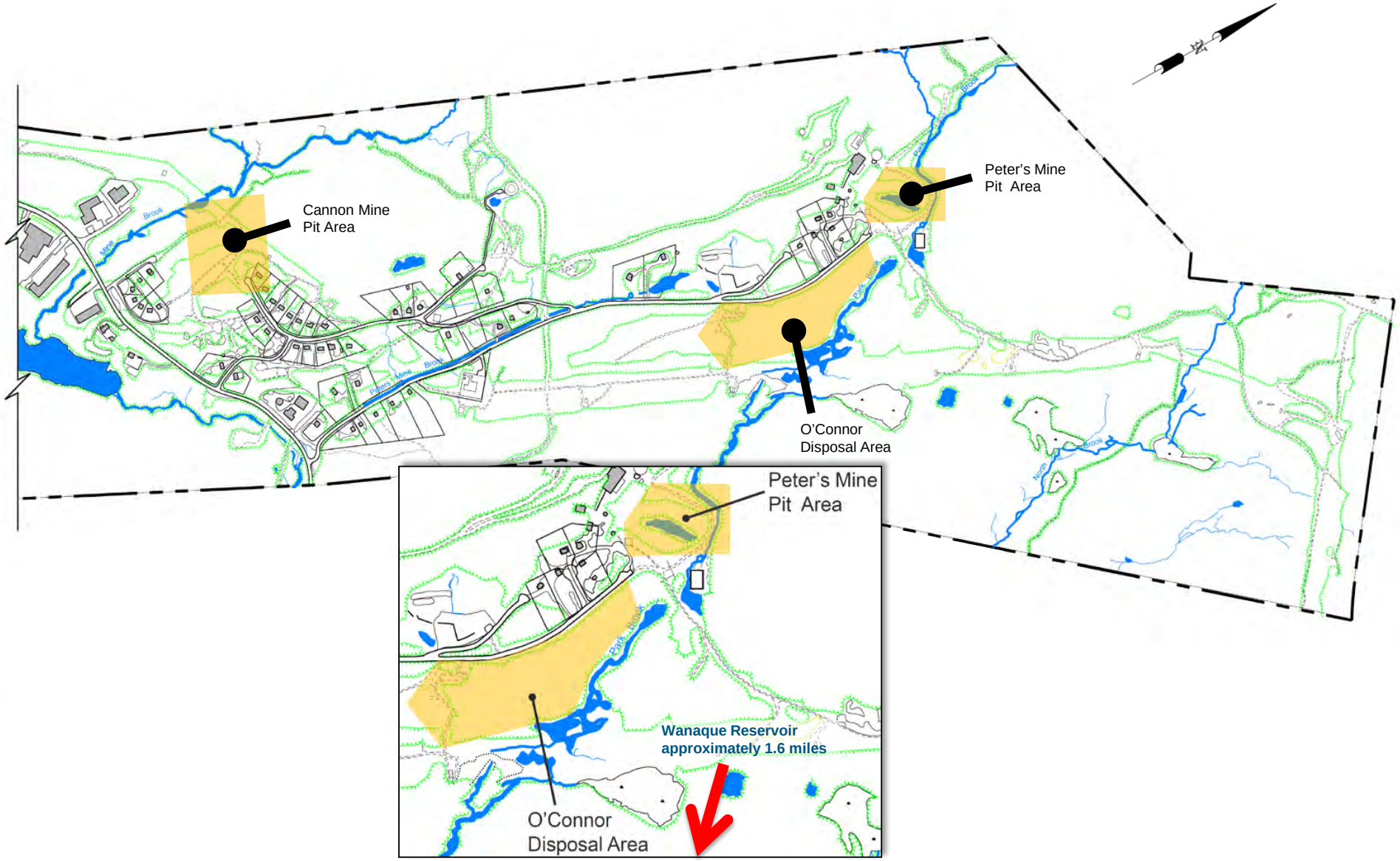
Figures

Figure 1: Site Timeline
Comments of Ford Motor Company to USEPA Proposed Plan for Ringwood Mines/Landfill Superfund Site



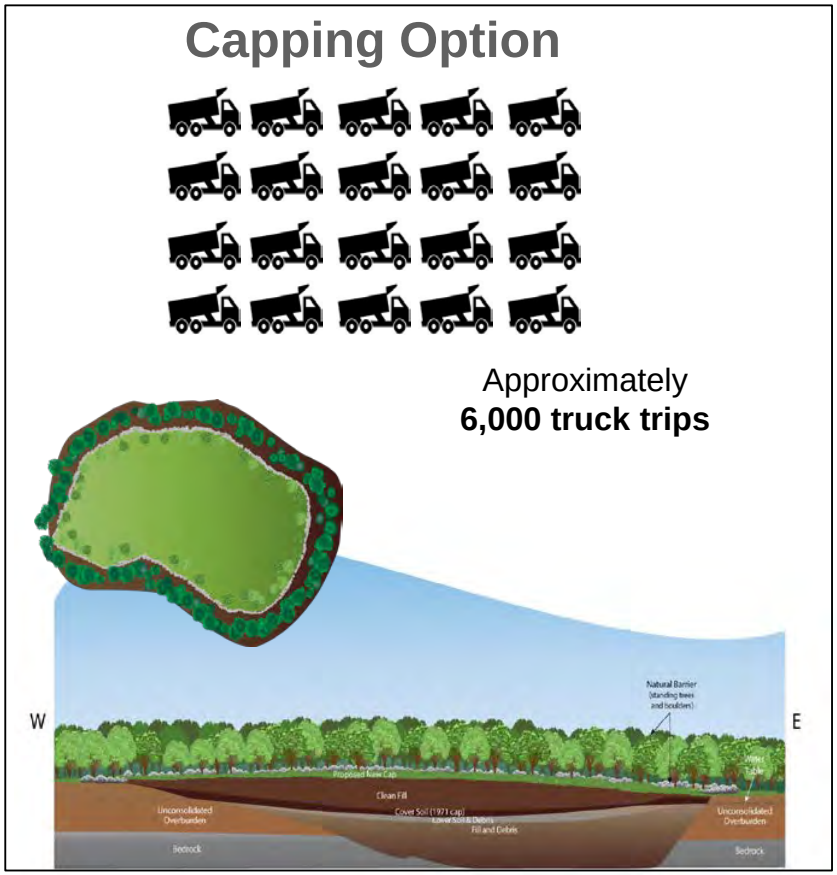
R2-0008411

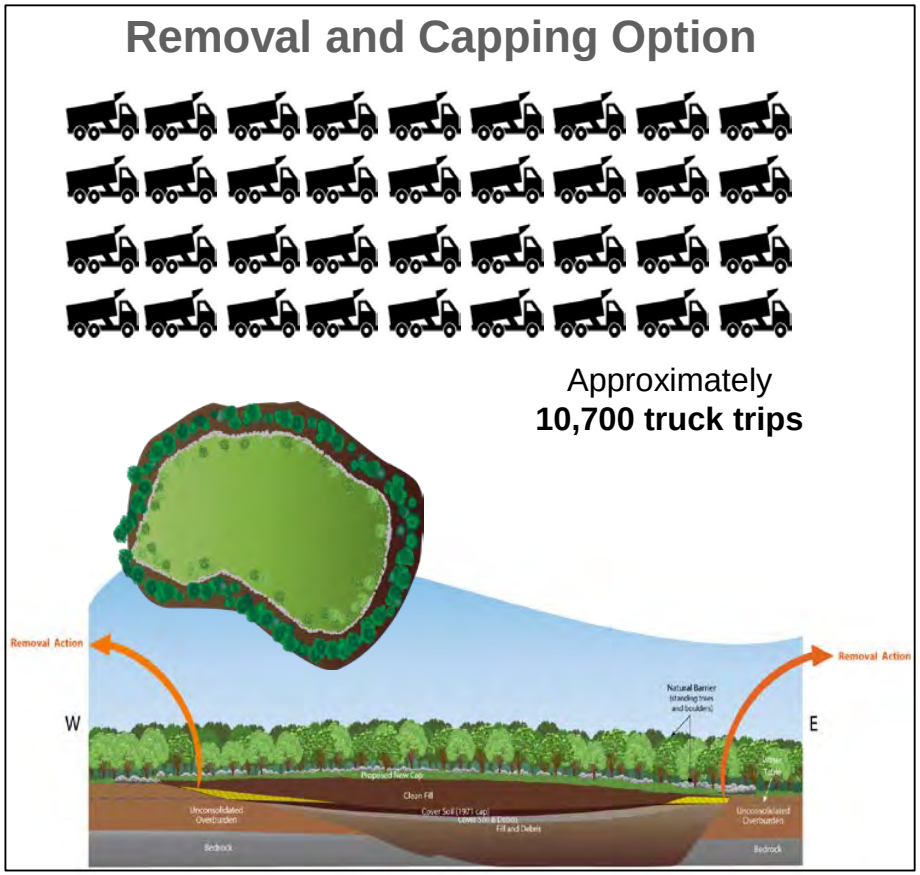
Figure 2: Site Areas of Concern
Comments of Ford Motor Company to USEPA Proposed Plan for Ringwood Mines/Landfill Superfund Site



R2-0008412

Figure 3: Comparison of Remedial Options for PMP
Comments of Ford Motor Company to USEPA Proposed Plan for
Ringwood Mines/Landfill Superfund Site





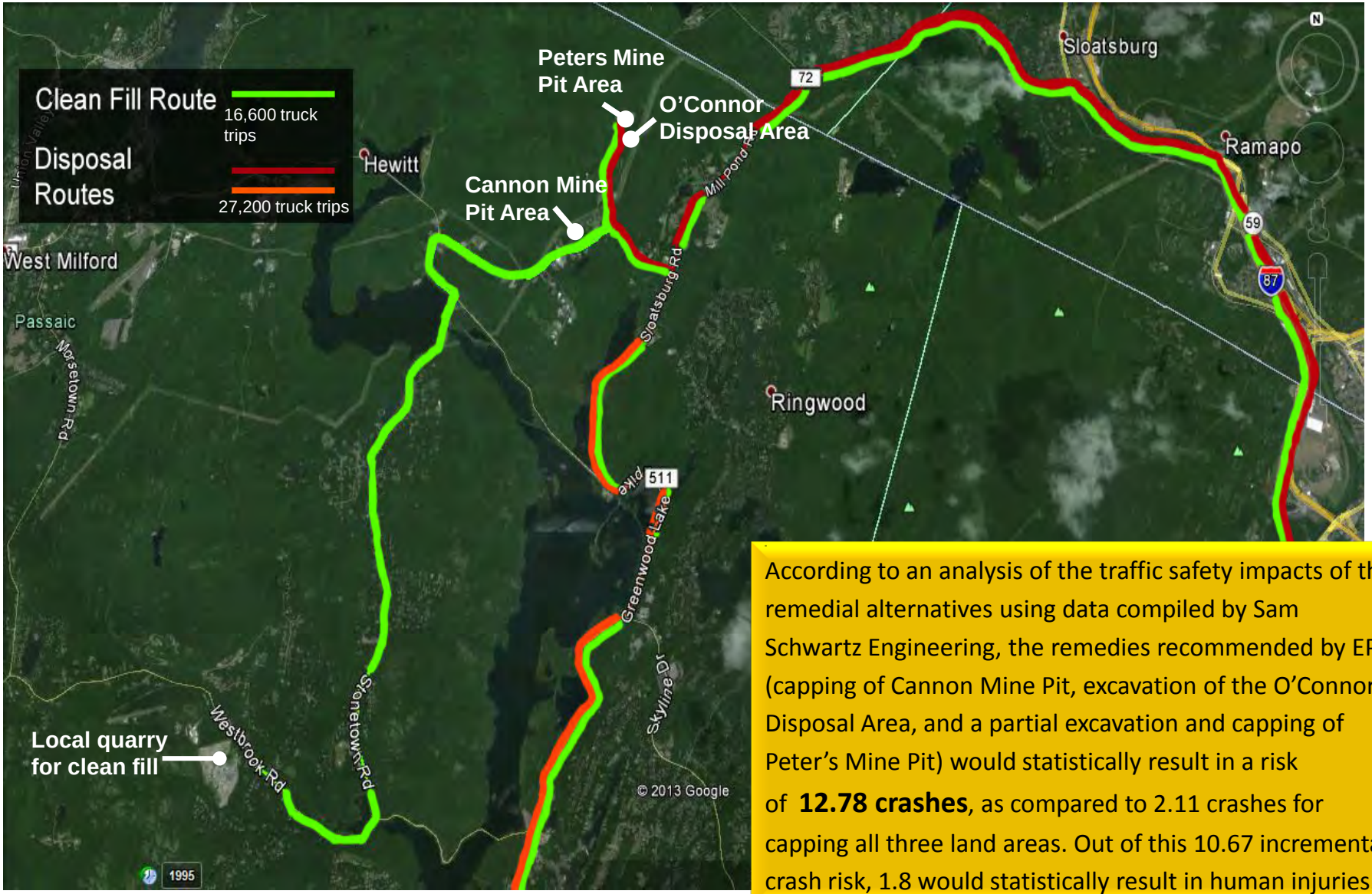
Artistic renderings – not to scale

- **Both have the same result – a capped landfill**
  - ***protective of human health and the environment***
- **Risk of injury or death from heavy truck traffic if removal action is done**

" The Region's proposed Peters Mine remedy…includes…the excavation and off-site disposal of the historic fill materials located above the water table in the "collar" area of the pit. This fill material…appears to be similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit. The Board recommends that…the decision documents provide further justification for this fill material's off-site disposal rather than its consolidation within the Peters Mine Pit…"

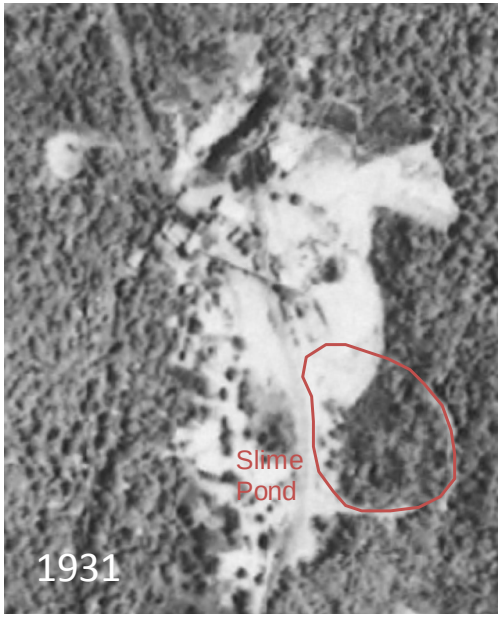
-National Remedy Review Board, September 30, 2013

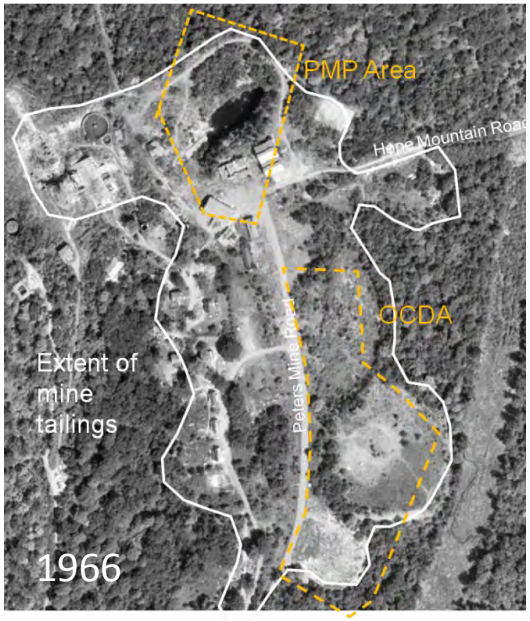
Figure 4: Truck Routes for USEPA-Recommended Remedies
Comments of Ford Motor Company to USEPA Proposed Plan for
Ringwood Mines/Landfill Superfund Site

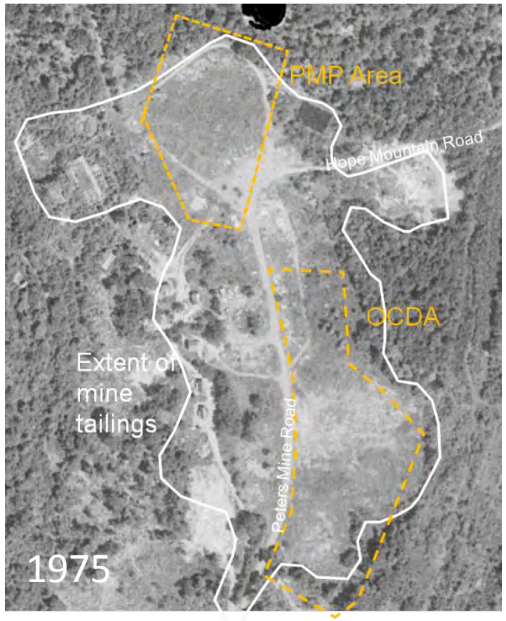


According to an analysis of the traffic safety impacts of the remedial alternatives using data compiled by Sam Schwartz Engineering, the remedies recommended by EPA (capping of Cannon Mine Pit, excavation of the O'Connor Disposal Area, and a partial excavation and capping of Peter's Mine Pit) would statistically result in a risk of **12.78 crashes**, as compared to 2.11 crashes for capping all three land areas. Out of this 10.67 incremental crash risk, 1.8 would statistically result in human injuries.

Figure 5: Evaluation of Potential Time Frame for Hunting and Gathering Activities in OCDA 1920 to 1984
Comments of Ford Motor Company to USEPA Proposed Plan for Ringwood Mines/Landfill Superfund Site







1920s to 1950s:

Active mining and mill operations (ore processing) generating mine waste - ***mine tailings and slime pond in OCDA area***. There was a "down period" from around 1933 to 1940 because of the Great Depression (limits of slime pond taken from mine maps from the 1920s and 1944).

1950 to 1965:

Mining at Cannon and Peters Mines mostly inactive with a few short periods in the early to mid-1950s of mining activity. ***OCDA clearly remains an exposed area of mine tailings and slime disposal.***

1965 to 1972:

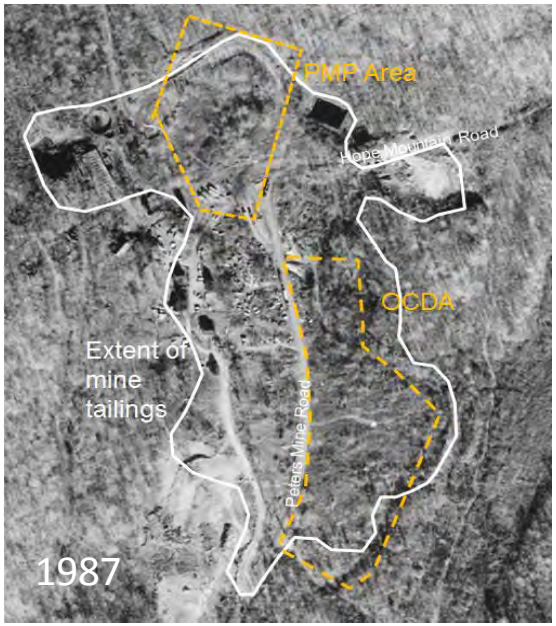
Period of Ford ownership and waste disposal at OCDA. Area capped in approximately 1971. Eliminates direct exposure to hunters and grazing game animals.

1972 to 1984:

Pre-CERCLA period. Area capped. Grassland with limited tree growth.

No extended periods of time identified that can account for continuous and unencumbered hunting and gathering activities.

Figure 5: Evaluation of Potential Time Frame for Hunting and Gathering Activities in OCDA 1984 to Present
Comments of Ford Motor Company to USEPA Proposed Plan for Ringwood Mines/Landfill Superfund Site



1984 to 1990:

CERCLA Period- Period of original Remedial Investigation (RI) and remedial action. Aerial photos from 1984/1987show OCDA as primarily grass covered with low shrubs.

1990 to 2004:

Post-CERCLA closure period- Time when some limited removal actions, and groundwater/surface water monitoring were conducted. Hunting and gathering never observed during this period and unlikely due to site activities and dispersed refuse.

2004 to present:

RI and Response Actions (RA) activities. Hunting and gathering never observed at the site (including OCDA), and heightened scrutiny by EPA/NJDEP and public awareness would limit hunting and gathering

No period of time identified for hunting and gathering activities.

Appendix B

Technical Comments on
Proposed Plan

Ringwood Mines/Landfill Site
Technical Comments on Proposed Plan

Proposed Plan Page Number	Proposed Plan Element	Comments, Technical Clarification & Corrections
1	The PP states the Preferred Alternative for the **OCDA is Alternative 5A**, which will provide for the excavation of all soil/fill material from the OCDA down to the top of the underlying mine tailings and disposal and/or recycling of all of the excavated material at appropriately permitted off-site disposal facilities.	The OCDA FS states that under this alternative, the mine tailings at the bottom of the OCDA will be removed and transported for off-site disposal and will not be segregated, staged or stockpiled on site for reuse (Section 6.7, Page 43). For clarification, any modification of the alternative in the PP should be called out as a revision based on additional consideration and analysis by Ford, the Borough of Ringwood and EPA subsequent to the submittal of the final FS documents.
4	The PP recognizes that mine tailings are a source of arsenic at the Site. It also states that arsenic is present in paint sludge, and is a source of arsenic contamination at the site (to soil, water, sediment).	The PP does not present any information on mine tailings, and how mine tailings are more prevalent than paint sludge in terms of mass and volume, and have a much wider spatial distribution, which together indicate that mine tailings are the primary source of arsenic at the Site.
5	*Biota Study:* The PP does not mention that while arsenic in game and plants drives the risks to the hunter, EPA's biota sampling report (2010) states that the concentrations of arsenic in game and plants are consistent with reference (background) locations.	EPA's biota sampling report (EPA 2010) should be referenced, citing the fact that the concentrations of arsenic in game and plants are consistent with reference (background) locations. Based on this information, the PP cannot conclude that additional risks are a result of paint sludge/waste.
8	*Ecological Risk:* The PP discusses the SLERA in the present tense (i.e., the SLERA indicates that there **is** a potential for adverse impact).	The SLERA should be discussed in past tense (i.e. the results of the SLERA indicated a potential for adverse impact) and then an explanation of how the SLERA findings prompted preparation of the BERA which concluded no to very minimal risk.
9	*Conclusions of the Risk Assessments:* The PP states that it is EPA's "judgment" that the preferred alternatives are necessary to protect public health and the environment.	For accuracy and clarity, the PP should summarize the actual conclusions of the ecological risk assessment and HHRA. The PP should then have a separate section that describes EPA's "judgment".
Peters Mine Pit		
10	*PMP Area Alternative 3- Engineered Permeable Cap of PMP Area with ICs:* The PP makes no reference to the wetlands that will be disturbed as part of the Alternative. Same comment noted for Alternatives 4 through 7.	The PMP FS states this alternative would impact wetlands in the PMP Area. Therefore, wetland mitigation would be required (Section 6.3, Page 32).
18	*PMP Area Short Term Effectiveness for Alternative 7:* The PP estimates that 28,700 truck trips through the Ringwood Community would be required to transport all of the waste material off site.	This value was not published in the FS and the approach to calculating this value should be identified for clarification purposes.

Ringwood Mines/Landfill Site
Technical Comments on Proposed Plan

Proposed Plan Page Number	Proposed Plan Element	Comments, Technical Clarification & Corrections
Cannon Mine Pit		
5	*CMP Area Investigation:* The PP states that investigations indicated that the CMP contains approximately 46,000 tons of fill material, excluding the blast rock located at the bottom of the pit.	In the CMP FS, Alternative 5 estimates that the volume of fill material, excluding the blast rock located at the bottom of the pit contains approximately 29,500 cubic yards (Figure 13).
7	*CMP Area Risk Assessment:* The PP states that non-cancer is below one when risks are analyzed by "modes of action"(i.e., target organs).	This statement is in correct. The CMP HHRA states "When the hazard index is assessed by target organ for the Hunter RME scenario for the adult, the hazard indices for the circulatory system and gastrointestinal tract are slightly above the target hazard index, with hazard indices of 2 each. When the hazard index is assessed by target organ for the Hunter RME scenario for the older child, the hazard index for the gastrointestinal tract is slightly above the target hazard index, with a target index of 2. When the hazard index is assessed by target organ for the Hunter RME scenario for the young child, the hazard indices for the circulatory system and kidney are slightly above the target hazard index, with target indices of 2 each. Additionally, the target hazard index for the gastrointestinal tract is slightly above the target hazard index, with a hazard index of 3. For the adult Hunter, concentrations of copper and zinc in game and concentrations of arsenic in both game and plant are driving the risk. For the older child Hunter, concentrations of copper in game are driving the risk. For the young child Hunter, concentrations of cadmium and copper in game and concentrations of arsenic and cadmium in plants are driving the risk. According to EPA (2010), arsenic, cadmium, copper, and zinc concentrations in both plants and game are not elevated compared to the concentrations detected in their reference samples."
14	*CMP Area Alternative 5- Removal and Off-Site Disposal of All Industrial and Municipal Fill Material within the CMP:* The PP states that blast rock at the bottom of the pit would not be removed.	*From the CMP FS*: Under this alternative neither the mine tailings nor the material at the bottom of the pits will be removed (Section 6.6, Page 40).
20	*CMP Area Short Term Effectiveness:* The PP estimates that 7,800 truck trips through the Ringwood Community would be required to transport all of the waste material off site.	The CMP FS states truck traffic is estimated to be more than 2,100 truck trips to transport all waste materials off site plus an additional 2,100 truck trips to import certified clean fill (Section 7.2.6, Page 57)
20	*CMP Area Implementability:* The PP states that Alternative 4, which also provides for the construction of an engineered cap, is expected to be more difficult to implement than Alternatives 3A and 3B, due to the need to excavate and transport mine tailings from the O'Connor Disposal Area to Cannon Mine Pit Area.	The References incorrect Alternative. Should reference Alternative 6.

Ringwood Mines/Landfill Site
Technical Comments on Proposed Plan

Proposed Plan Page Number	Proposed Plan Element	Comments, Technical Clarification & Corrections
O'Connor Disposal Area		
8	*O'Connor Disposal Area Risk Assessment:* The PP summarizes the non-cancer risks to the hunter and resident by target organ, but then states: "However, following the EPAs process for evaluating non-cancer hazards, when modes of action for the COPCs are considered, non-cancer HIs are less than the benchmark value of 1.0."	The PP confuses the results of the non-cancer risks. As stated in the OCDA HHRA "When the hazard index is assessed by target organ for the Hunter RME scenario for the adult, the hazard index for the circulatory system is slightly above the target hazard index with a hazard index of 2. Additionally, the gastrointestinal tract is slightly above the target hazard index with a hazard index of 3. When the hazard index is assessed by target organ for the Hunter RME scenario for the older child, the hazard index for the gastrointestinal tract is slightly above the target hazard index with a hazard index of 3. When the hazard index is assessed by target organ for the Hunter RME scenario for the young child, the hazard indices for the circulatory system, skin, and kidney are all slightly above the target hazard index with target indices of 2 each. Additionally, the gastrointestinal tract is above the target hazard index with a hazard index of 4. For the adult Hunter, concentrations of copper and zinc in game and concentrations of arsenic in plants are driving the risk. For the older child Hunter, concentrations of copper in game are driving the risk. For the young child Hunter, concentrations of cadmium, copper, iron, and zinc in game and concentrations of arsenic and cadmium in plants are driving the risk. According to USEPA (2010), arsenic, cadmium, copper, iron, and zinc concentrations in both plants and game are not elevated compared to the concentrations detected in their reference samples. When the hazard index is assessed by target organ for the Resident RME scenario for the young child, the hazard indices for the circulatory system and skin are slightly above the target hazard index with target indices of 2 each. For the young child Residents, the concentration of arsenic in soil is driving the risk. As noted by ARCADIS (2008a and 2008b), it is Ford's position that arsenic concentrations at the Site are dominated by naturally occurring minerals and mine tailings from historical mining activities."

Ringwood Mines/Landfill Site
Technical Comments on Proposed Plan

Proposed Plan Page Number	Proposed Plan Element	Comments, Technical Clarification & Corrections
16	*OCDA Alternative 5A- Removal of Fill for Off-Site Disposal with On-Site Reuse of Mine Tailings:* The PP states that the undisturbed mine tailings at the bottom of the OCDA which are not comingled with wastes and fill materials could be removed and potentially reused onsite within the PMP Area in place of clean fill that would otherwise need to be transported through the community.	The OCDA FS states under this alternative, the mine tailings at the bottom of the OCDA will be removed and potentially reused on site, presumably within CMP and/or PMP followed by construction of the engineered caps in these ACs (Section 6.6, Page 42). For clarification, any modification of the alternative in the PP should be called out as a revision based on additional consideration and analysis by Ford, the Borough of Ringwood and EPA subsequent to the submittal of the final FS documents.
16	*OCDA Alternative 5B- Removal of Fill for Off-Site Disposal:* The PP states that all undisturbed mine tailings located beneath the fill material would be left in place in the OCDA.	The OCDA FS states under this alternative, the mine tailings at the bottom of the OCDA will be removed and transported for off-site disposal and will not be segregated, staged or stockpiled on site for reuse (Section 6.7, Page 43). For clarification, any modification of the alternative in the PP should be called out as a revision based on additional consideration and analysis by Ford, the Borough of Ringwood and EPA subsequent to the submittal of the final FS documents.
16	*OCDA Alternative 5B- Removal of Fill for Off-Site Disposal:* The PP states total Capital Cost for Alternative 5B is $26,023,100 and Total Present Net Worth is $26,191,800. The Construction Duration is 18-20 months.	The OCDA FS states that total Capital Cost for Alternative 5B is $54,321,700 and Total Present Net Worth is $54,509,400 (Appendix B). The Construction Duration is 28-29 months (Appendix A).
22	*OCDA Cost:* The PP states the Alternative 5B cost $26,191,800.	The OCDA FS states Alternative 5B cost $54,509,400.
24	*OCDA:* The PP estimates that approximately 110,500 cubic yards of soil/fill would be disposed of off-site as part of this remedy.	The OCDA FS states Alternative 5B material for off-site disposal is 71,000 cubic yards (Figure 22).
24	*OCDA:* The PP estimates that approximately 73,100 cubic yards of mine tailings could be excavated from OCDA and used as fill in the PMP as part of this remedy.	The OCDA FS states Alternative 5B mine tailings for relocation to PMP is 112,700 cubic yards (Figure 22).

References:

ARCADIS. 2008a. Draft Report on Investigation of Mine Tailings and Background Soil, Ringwood Mines/Landfill Site, Ringwood, New Jersey, June 6.

ARCADIS. 2008b. . Memorandum from J. Sueker, ARCADIS, to Joseph Gowers, USEPA re: Statistical Data Evaluation of Mine Tailings/Background Soil Investigation, Ringwood Mines/Landfill Site, Ringwood, NJ. December 8.

EPA. 2010. Final Report. Data Summary. Ringwood Biological Sampling Efforts 2006 Through 2009. Ringwood Mines/Landfill Site. Ringwood, New Jersey. USEPA Contract No.: EP-C-04-032. June.

Abbreviations:

EPA- United States Environmental Protection Agency

OCDA- O'Connor Disposal Area

FS- Feasibility Study

SLERA- Screening Level Ecological Risk Assessments

HHRA- Human Health Risk Assessment

PMP- Peter's Mine Pit

PP - Proposed Plan

CMP- Cannon Mine Pit

COPCs- Constituents of Potential concern

RME- Reasonably Maximally Exposed

Appendix C

Technical Comments on
Richard Chapin Comment

Ringwood Mines/Landfill Site
Technical Comments on Richard Chapin Comment

Comment Number	Comment	Response to Comments, Technical Clarification & Corrections
Peters Mine Pit - November 6, 2013 Memorandum		
1	The PP states the need for methane management will be determined during design. The PMP is known to contain organic materials that are undergoing anaerobic degradation [gas bubbling to the surface is readily apparent]. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental, basic data to be considered. The methane issue i s critical- the FS indci ates that passive vent wells will be needed. The PMP area will look like a closed landfill [which is what it is], not a recreational area. How does this fulfill the RAO for the PMP? The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.	Methane collection is not a concern for a permeable cap.
3	The PP indicates the materials within the PMP will be dewatered, and then compacted. The surface of the PMP pond is the top of the water table- it's groundwater. After the materials are dewatered and compacted, the groundwater will saturate those materials again, recreating the organic muck that is currently present [and making the cost of dewatering a useless expenditure, btw], which has poor structural support capabiltiies. How is the proposed cap going to be stable and not settle under these conditions? What is the contingency for a cap that fails due to settlement? The PMP is deep, over 60+feet at the east end; how will those materials be effectively compacted? Again, the USEPA must not ignore the implementability of compaction. If those materials cannot be reliably and consistently compacted the costs for this option would increase dramatically. The time to ascertain the constructabiltiy of a project is before it is selected. The USEPA should ascertain the compaction now and then incorporate that information into its selection process. This is a data gap that must be closed now, before the ROD, not after during design.	Water management during excavation and the potential for subsidence following compaction and capping is an important engineering concern that has already been considered. Additional evaluation of this will be conducted as part of the design phase of the project.
5	PMP has shallow overburden groundwater contamination emanating for the Peter's Pit. How will the selected remedy rectify this problem, given the wastes will remain within the pit? Has the likelihood of buried drums been considered?	There is no evidence of a drum deposit at depth. Moreover, the groundwater contaminant issue will be addressed as part of OU-3
6	There is an on-going study to ascertain whether the PMP is discharging contamination to the adjacent Park Brook. If that study finds the PMP is discharging to the Brook, how can leaving the wastes in-place within the PMP be justified?	All surface water data (across the site) are within standards and have been since initial investigations began. If the PMP groundwater is confirmed to be discharging to the Brook, there will be no increased risk to downstream receptors because contaminants have never been observed in the surface water.
7	How long will the "long term monitoring" of the engineering controls last? What financial assurance mechanisms are required for this monitoring?	The long term monitoring and financial assurance for the longterm monitoring are regulated by NJDEP's remediation permit program. Monitoring continues until standards are attained. (There is no time for permit cessation.)

Ringwood Mines/Landfill Site
Technical Comments on Richard Chapin Comment

Comment Number	Comment	Response to Comments, Technical Clarification & Corrections
8	Alternative 6A, as presented in the FS, has an impermeable cap, while this Alternative's description in the PP has a permeable cap. What is the engineering basis for this change? Where is that basis described in detail? USEPA must provide this information.	Alternative 6A is the permeable cap scenario. Alternative 6B is the impermeable cap scenario.
10	What is the basis for assuming that trees whose roots will penetrate into the wastes left in the PMP will survive?	Trees rooted in waste at OCDA have survived. There is no reason why this should not be the same for PMP.
11	What are the specific concentrations of contaminants that will be allowed to present in the "non-hazardous soil and fill" that will be reused as fill for the PMP? Where are the specific testing protocols that will be use? Will an NJDEP soil reuse plan be prepared and approved for this?	The proposed cap will use clean fill.
Cannon Mine Pit - November 6, 2013 Memorandum		
1	The PP states the need for methane management for the CMP will be determined during design. The CMP is known to have received municipal wastes that contain organic materials. The requirement for a passive venting system would put vent pipes exposed thru the cap. Access to these pipes could cause exposure to methane gas and/ or an explosion hazard; consequently, a fence would be required for safety reasons. Selection of an alternative requires all fundamental basic data to be considered. The methane issue is critical to the future look and possible use of the site. The USEPA should ascertain the need for methane management now and then incorporate that information into its selection process.	Same as PMP Comment 1. The discussion of methane collection is not a concern for a permeable cap.
2	The selected alternative does not address restoration of the site for communtiy use. Apparently that was a driving force behind selection of an alternative for the OCA (both Alternatives), but was not a factor here. Why?	It is Borough property and will be a closed landfill. The Borough will determine “community” use.
Cannon Mine Pit - January 27, 2014 Memorandum		
1	The NJDEP recommended a more comprehensive remedy for the Cannon Mine Pit, which included removal of the upper 50 ft of wastes, removal of all drummed wastes encountered, sealing of the Cannon Mine Shaft, documentation of no groundwater contamination associated with the Cannon Mine and placement of a vegetative cover that would restore that area to be consistent with proximate forested areas and allow use of the area for community use. The NJDEP's revisions should be incorporated into the selected remedy by USEPA.	In their submittal to the NRRB, NJDEP does not recommend removal of the upper 50 feet, but rather recommends "…that all industrial and municipal waste within the top 50 feet of the Cannon Mine pit be re-compacted and any drum or drum remnants found during re-compaction must be removed for disposal offsite."

Ringwood Mines/Landfill Site
Technical Comments on Richard Chapin Comment

Comment Number	Comment	Response to Comments, Technical Clarification & Corrections
Biota Report - January 27, 2014 Memorandum		
1	The sampling of biological tissues was imperfect because of the passage of time and imperfect documentation of site contamination activities. The sampling plan data set was limited and like many sites this Superfund sites suffer from poor documentation and events that obscure information.	Historic biological samples cannot be collected. However, the data set was established based on input from the residents of Ringwood, NJ.
2	The tissue samples that indicate excess arsenic and lead likely underestimate the true level of contamination in biota that are used or consumed by the local community in Ringwood. The EPA estimate that a person who is exposed to the maximum extent from consuming food off the site is over-exposed to arsenic and lead is, in my opinion, correct. However, the types and amounts of contaminated biota consumed by those who use it for their diet from the site were likely underestimated by EPA.	As stated above, the types of biota that were collected were based on input from the resident of Ringwood, NJ. As stated in the HHRAs for the PMP, CMP, and OCDA, the consumption rate of wild-caught game is likely over-estimated. Population sustainability was not considered when establishing consumption rates.
5	Third, the data set for biota is only from O'Connor Disposal Area and no data was collected from other disposal areas. The USEPA must undertake a more comprehensive biota study of all three disposal areas. The resident population consumes a large portion of the biota found; consequently, it is critical to understand whether or not a broader consumption advisory is currently necessary then the existing Limited squirrel consumption advisory, which the State of New Jersey established based on the O'Connor disposal area data. Since consumption of contaminated biota would be direct pathway of exposure for people who live and recreate on the Superfund site then it is a critical need to have this data gap closed. This will provide a better understanding of the potential risk posed by contaminated biota.	As detailed in USEPA's biota report (*Final Report. Data Summary. Ringwood Biological Sampling Efforts2006 Through 2009. Ringwood Mines/Landfill Site. Ringwood, New Jersey*. June 2010. USEPA Contract No.: EP-C-04-032.) the study was conducted with input from the residents of Ringwood, NJ. Biota was collected from the areas around and including PMP, CMP, and OCDA where biota could be found. Extensive sampling efforts were made to collect a variety of plant and game suggested by the residents of Ringwood, NJ.
6	The biota sampling effort also provides a benchmark against which future conditions can be measured. Future tissue sampling will be compared against these data to determine the extent of change following the remediation. For this reason, the tissue sampling needs to be an accurate reflection of tissue levels of the site contaminants for the wide range of plants and animals that are consumed by the community, given their historical and cultural use of biota. The present data set is limited in this regard and a more comprehensive sampling effort will be needed to document future changes.	See response to comment #5.
7	The result of these limitations is an underestimate of the actual health risks from site-related contamination.	As stated in the HHRAs for the PMP, CMP, and OCDA, the consumption rate of wild-caught game is likely over-estimated. Population sustainability was not considered when establishing consumption rates for wild-caught game or plants. Therefore, risk estimates were likely over-estimated for this pathway.

Appendix D

PMP Presentation

Peters Mine Pit: The Final Remedy

Ringwood Mines/Landfill Site
Ringwood, New Jersey

February 2014

R2-0008427

Introduction

PMP "Donut" is a misnomer

- Comingled fill is mostly INSIDE the pit

Soil cap constructed when PMP was closed in 1971 is still in place

- Covers debris/solid waste (wood, glass, metal, plastic, cardboard, paper) and residual dry paint sludge
- Cap extends across entire PMP, including pond bed
- Direct contact and ingestion risks already mitigated

EPA fails to provide justification for excavation as required by the NRRB

- No additional risk reduction achieved by excavation and placement of additional clean fill between the waste material and cap

Plan per Alternative 4A also achieves new/ thicker cap without excavation

- Over the existing soil cap
- New cap will be constructed and maintained per NJDEP Site Remediation Program regulations

Introduction

Capping only remedy is fully protective of human health and the environment

Any excavation/removal will introduce risk, not reduce risk

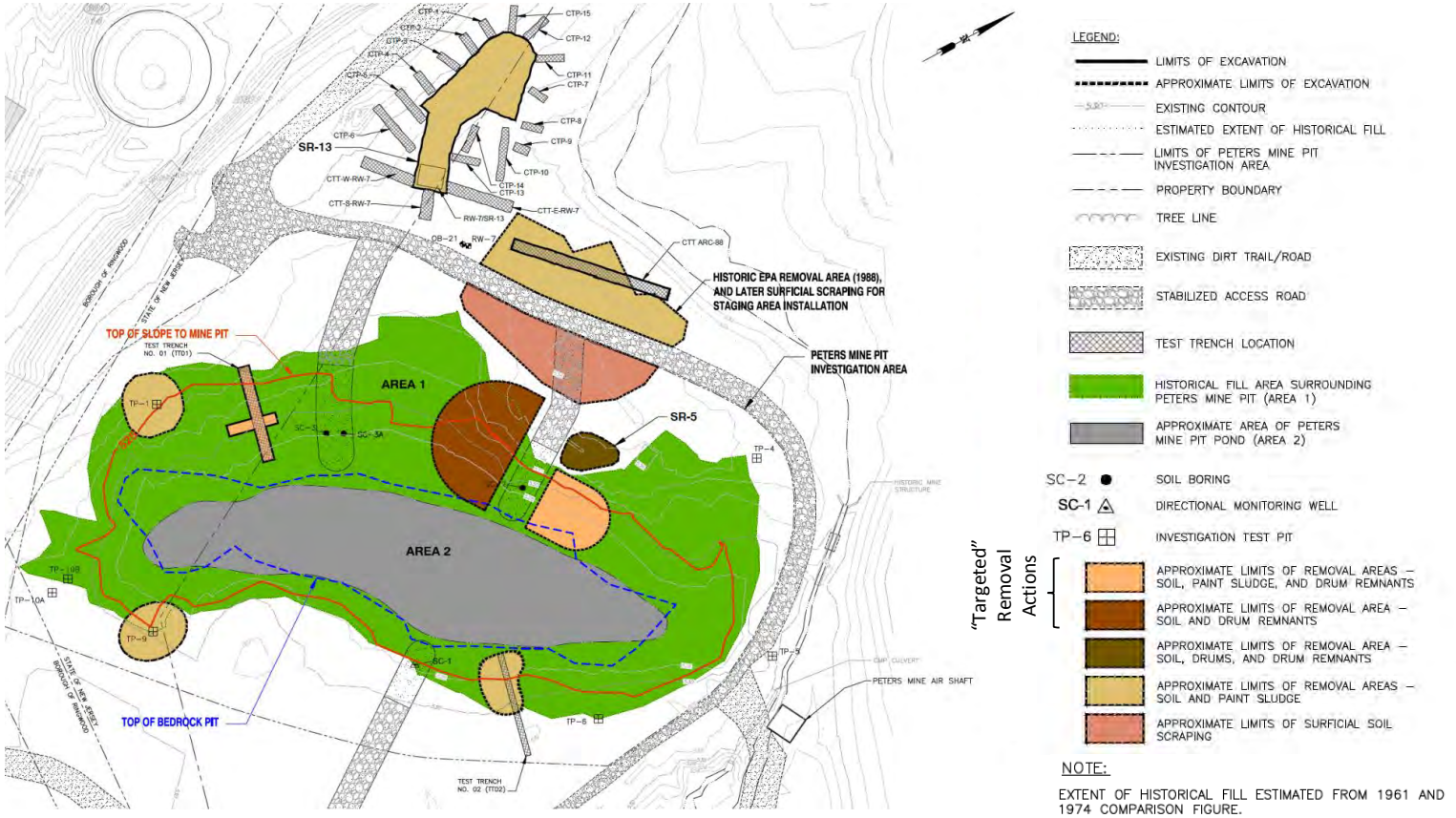
- Excavation of materials INSIDE the pit may cause stability issue
- Excavation will remove most of the original soil cap (~50% of material proposed to be excavated is original soil cap material)
- Per removal actions to date, ~0.5% of excavated material has contained paint sludge
- Excavation will not provide added benefit for long-term protectiveness
- Excavation will result in additional risks posed by heavy increase in truck trips
- Excavation will create risk of changed groundwater conditions

A capping remedy without any excavation can be designed to:

- Achieve a thicker cap while leveling the depression
- Match the topography of surrounding area (i.e., ***no mound***)
- Visually enhance the area as a park setting (trees, boulders, shrubs)

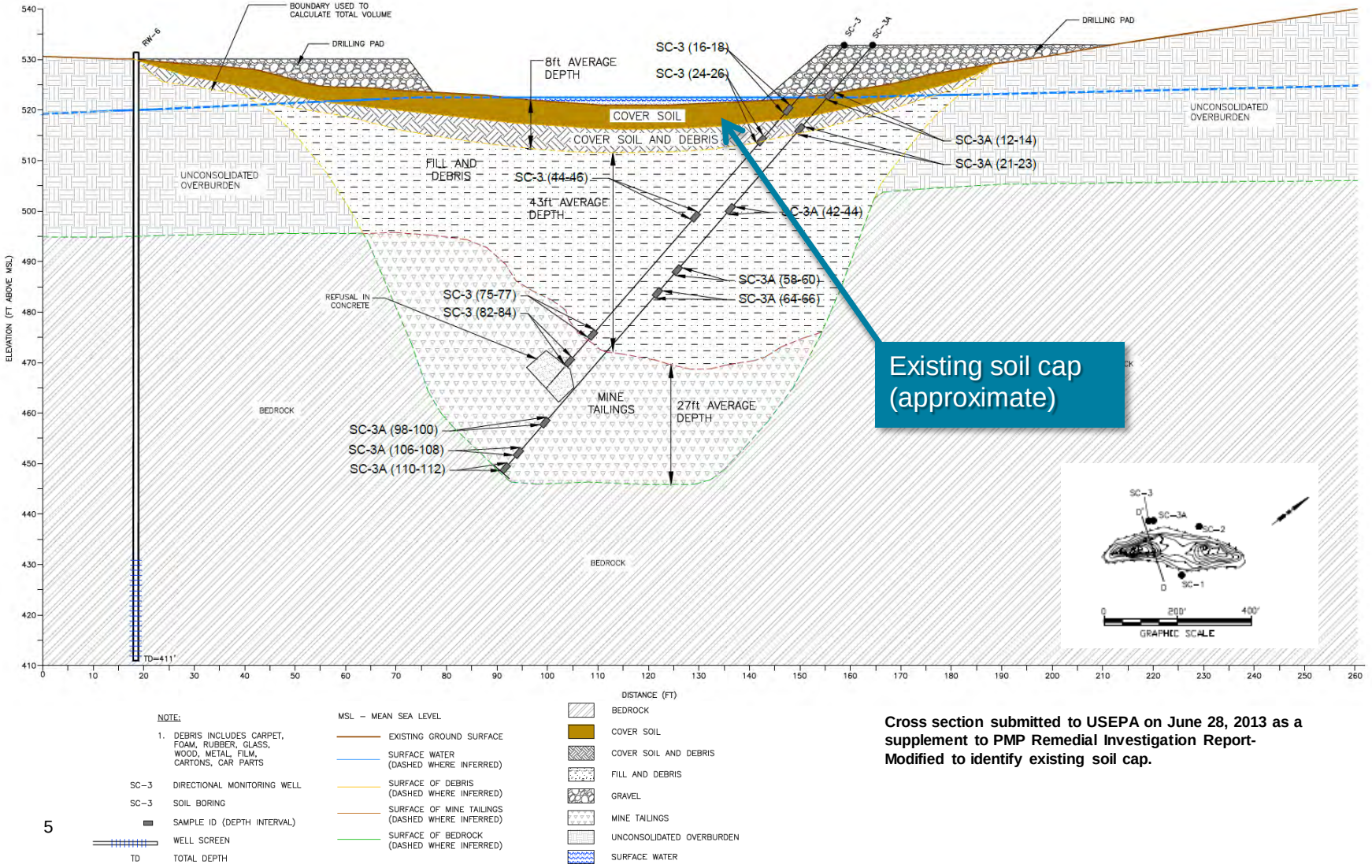
Peter's Mine Pit (PMP) "Donut"

EPA proposes removal of materials from around the PMP pond, down to the water table



- Referred to as the "donut" or collar by EPA (green area)
- The donut is capped fill surrounding the pond primarily <u>inside</u> the pit

PMP Pit Cross Section



NOTE:

1. DEBRIS INCLUDES CARPET, FOAM, RUBBER, GLASS, WOOD, METAL, FILM, CARTONS, CAR PARTS

SC-3 DIRECTIONAL MONITORING WELL
SC-3 SOIL BORING
SAMPLE ID (DEPTH INTERVAL)
WELL SCREEN
TD TOTAL DEPTH

MSL – MEAN SEA LEVEL
EXISTING GROUND SURFACE
SURFACE WATER (DASHED WHERE INFERRED)
SURFACE OF DEBRIS (DASHED WHERE INFERRED)
SURFACE OF MINE TAILINGS (DASHED WHERE INFERRED)
SURFACE OF BEDROCK (DASHED WHERE INFERRED)

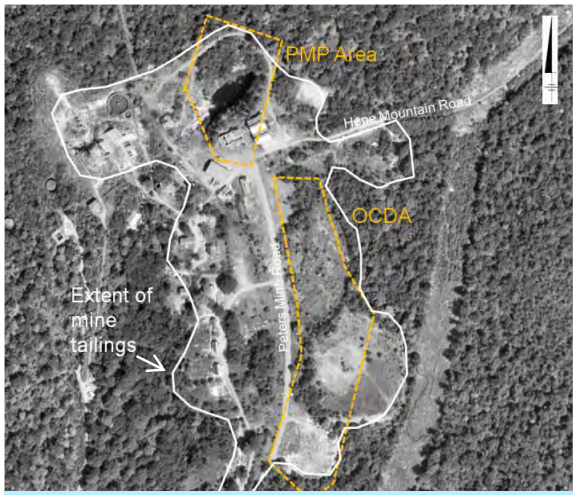
BEDROCK
COVER SOIL
COVER SOIL AND DEBRIS
FILL AND DEBRIS
GRAVEL
MINE TAILINGS
UNCONSOLIDATED OVERBURDEN
SURFACE WATER

Cross section submitted to USEPA on June 28, 2013 as a supplement to PMP Remedial Investigation Report- Modified to identify existing soil cap.

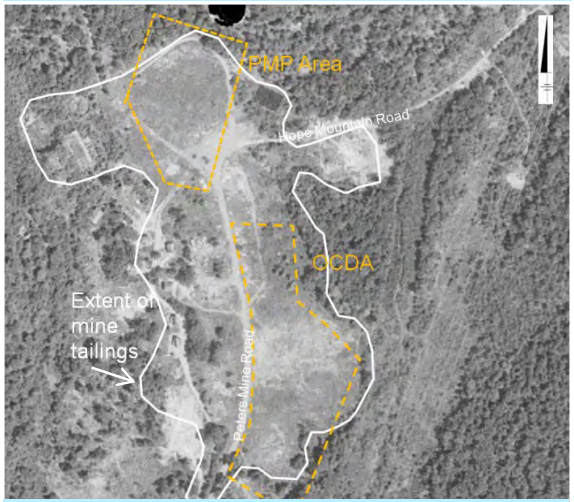
R2-0008431

What is the fill material? What does it look like?

- The fill material is located within the PMP pit
  - Not a separate ring outside of the pit footprint
- PMP is a concave land form, not a mound
- Soil cap placed on PMP is still in place
  - Extends across entire PMP, including pond bed



1966

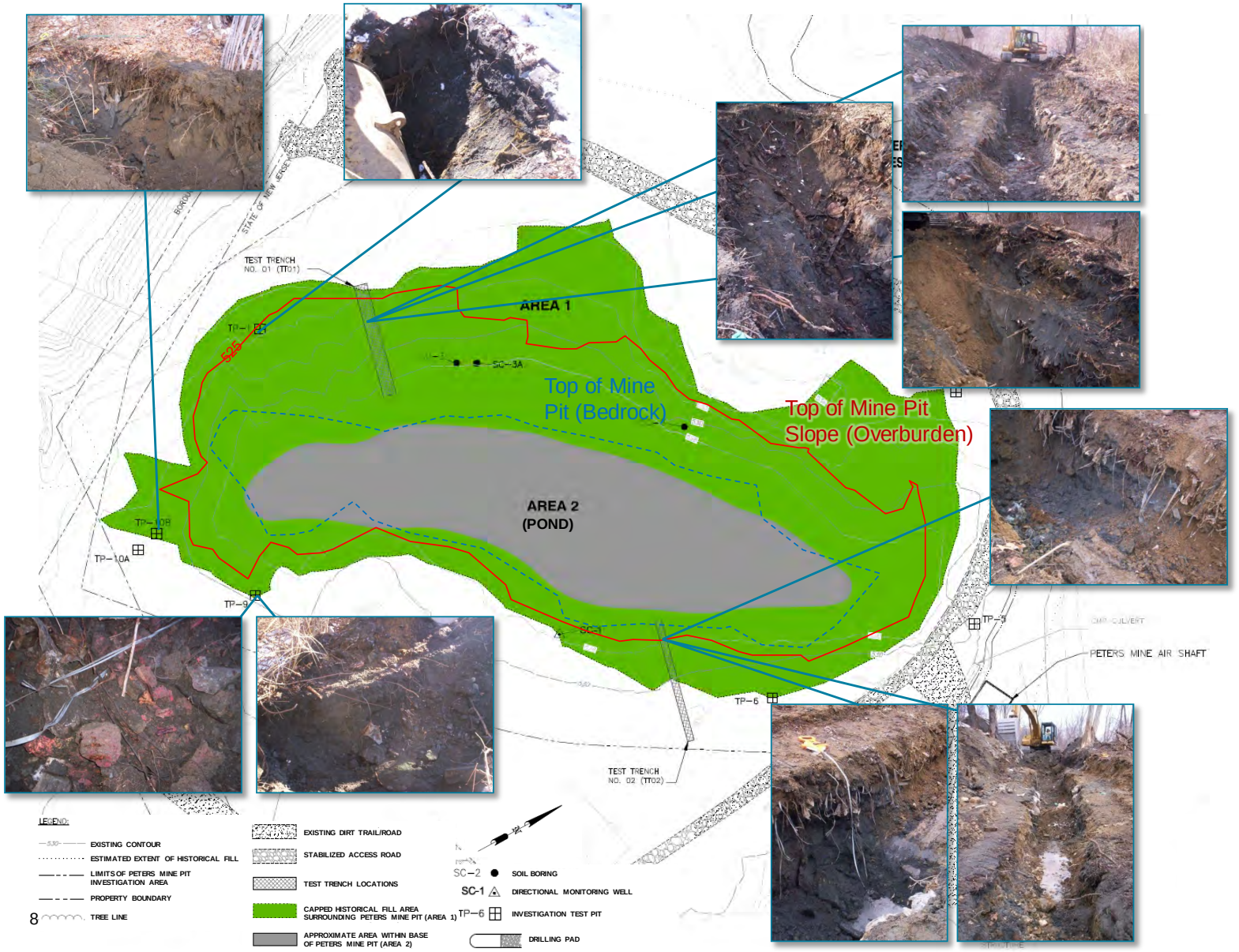


1975

What is the fill material? What does it look like?

- Pond in middle of PMP formed over time due to subsidence and is now an expression of groundwater
  - ✓ Natural degradation of materials in the pit
  - ✓ Compaction from the load of the soil cap
  - ✓ ***The fill outside of the pond is inside the pit***

2007


AREA 1
AREA 2
(POND)
Top of Mine
Pit (Bedrock)
Top of Mine Pit
Slope (Overburden)
TEST TRENCH
NO. 01 (TT01)
TEST TRENCH
NO. 02 (TT02)
TP-1
TP-10B
TP-10A
TP-9
TP-6
TP-5
SC-3A
SC-1
PETERS MINE AIR SHAFT
LEGEND:
EXISTING CONTOUR
ESTIMATED EXTENT OF HISTORICAL FILL
LIMITS OF PETERS MINE PIT INVESTIGATION AREA
PROPERTY BOUNDARY
TREE LINE
EXISTING DIRT TRAIL/ROAD
STABILIZED ACCESS ROAD
TEST TRENCH LOCATIONS
CAPPED HISTORICAL FILL AREA SURROUNDING PETERS MINE PIT (AREA 1)
APPROXIMATE AREA WITHIN BASE OF PETERS MINE PIT (AREA 2)
SC-2 SOIL BORING
SC-1 DIRECTIONAL MONITORING WELL
TP-6 INVESTIGATION TEST PIT
DRILLING PAD

R2-0008434

Summary of Test Pits and Trenches

	Location (total depth, ft)	Mine Tailings Present	Depth(s) (ft)	Paint Waste Present	Depth(s) (ft)	Debris/ Solid Waste Present	Depth(s) (ft)
Inside the PMP	**TP-1 (2)**	X	0-0.5	X	0-0.5	X	0-2
	TP-4 (7)					X	0-8
	TP-9 (6)	X	0-2, 4-6	X	0.5-2	X	0-4
	TP-10B (7.5)	X	0-1, 3-7			X	1-3
	TT-01A (3)			X	0.9-1.3	X	1.3-3
	TT-01B (10)	X	0-1, 5-8			X	0-2,4-5,8-10
	TT-01C (10.5)	X	0-1, 6-9			X	0-10
	TT-02A (4)	X	0-3.5			X	3.5-6
	TT-02B (5)	X				X	3-5
	TT-02C (6)	X	0-0.5			X	2-2.5
Outside the PMP	**TP-5 (10)**	X	7-10			X	0-7
	TP-6 (7)	X	4-7			X	0-4
	TP-10A (8)	X	0-8				

TT-01


Existing soil cap with established vegetation
Landfill debris with soil matrix / waste and cobbles

TT-01

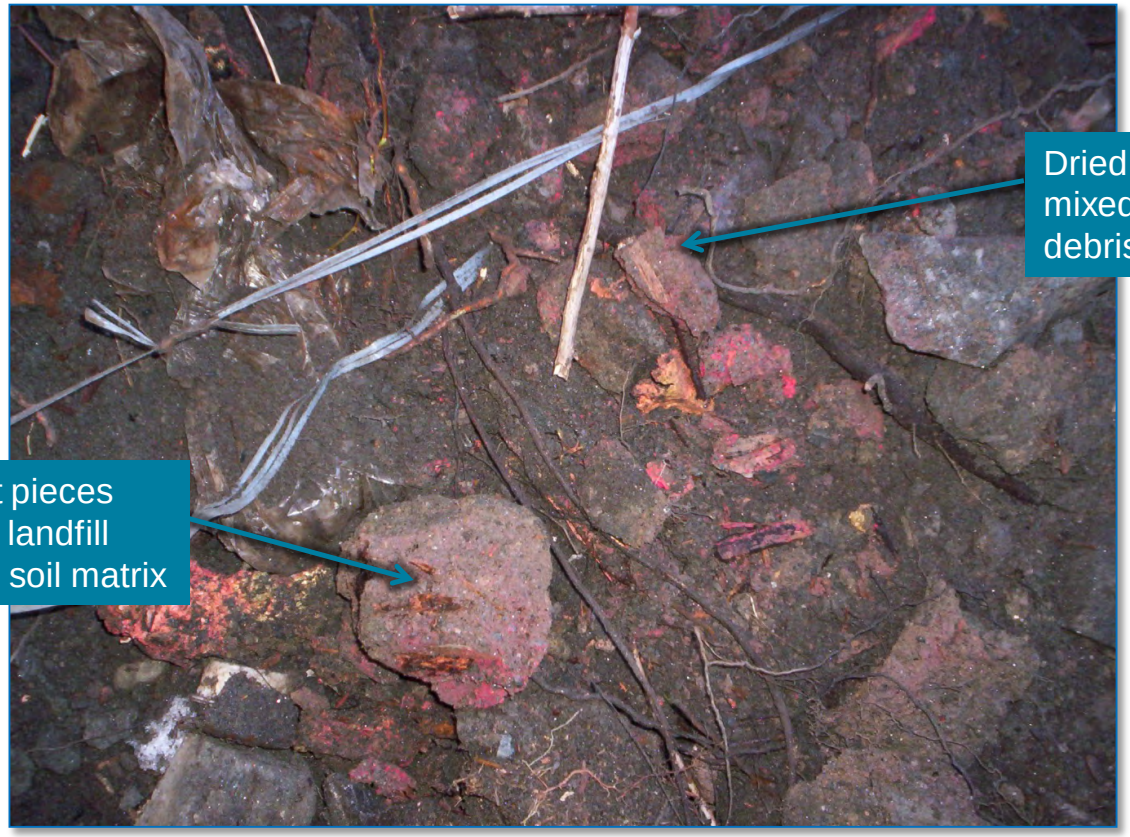

Existing soil cap with established vegetation
Sand and gravel
Mine tailings comingled with waste

TT-02


Landfill debris with soil matrix and pieces of waste
Existing soil cap with established vegetation
Groundwater

TT-02

TP-9



* Photo taken March 2006; all dried paint pieces have already been removed.

Examples of Fill Material at Depth

	SC-3	SC-3A
Waste/Debris	 ~ 20-22 ft bgs	 ~ 55 ft bgs
Mine Tailings	 ~ 75-77 ft bgs	 ~ 105-110 ft bgs
Dry Paint Pieces	**Not encountered in SC-2, SC-3, or SC-3A. Encountered at depth in SC-1, but no photo available.**	

Photos taken of cores from directional borings
(ft bgs = feet below ground surface)

Peters Mine Pit Area – NRRB Comment

"The Region's proposed Peters Mine remedy…includes…the excavation and off-site disposal of the historic fill materials located above the water table in the "collar" area of the pit. This fill material…appears to be similar to the approximately 100,000 cubic yards of fill and debris already found below the water table within the pit. **The Board recommends that…the decision documents provide further justification for this fill material's off-site disposal rather than its consolidation within the Peters Mine Pit…**"

-NRRB, September 30, 2013

- *EPA fails to provide justification for this removal action (compared to consolidation)*

There is no Justification for Excavation of Non-Principal Threat Waste Material

EPA's selected remedy proposes capping the entire area due to residual Low Level Threat Waste within the Peter's Mine Pit Area and below the water table. EPA therefore has deemed the material within the PMP Area and below the water table (i.e., under the PMP "pond") safe to remain in place beneath an engineered cap. The data demonstrate that the material EPA proposes to excavate consists of **like material** that is within the PMP below the water table (i.e., the material which is beneath the PMP "pond") and the prior soil cap constructed in the 1970s. It does not make sense and is unreasonable for EPA to require excavation of material which it also deems is safe to leave behind beneath an engineered cap.

Fill Above the Water Table

Material Type	Assumptions based on field observations/photo documentation	Estimated Percentage	Approximate Volume (CY)
Soil cap (installed in 1971)	**~Top 2 feet of "donut" (soil cap)**	**50 %**	**7,500**
Soil (sand, silt, gravel, Cobbles)	**40% of material below soil cap**	**20 %**	**3,000**
Debris/Waste (wood, glass, metal, plastic, cardboard, paper)	**40% of material below soil cap**	**20 %**	**3,000**
Mine Tailings	**20% of material below soil cap**	**10 %**	**1,500**
Dry Paint Pieces	**<1% of material below soil cap**	**< 0.5 %**	**<50**

- Most of material proposed for removal is the soil cap – impractical to segregate
  - Soil cap = 50% of materials designated for excavation per EPA
  - Soil cap + soil (sand, silt, gravel cobbles) = 70% of material designated for excavation per EPA
  - Soil cap + soil + mine tailings = 80% designated for excavation per EPA
- Remaining fill is similar to that found below the water table (at depth)

PMP Removal Actions

- **Targeted Removal Actions (in Pit)**
  - Dry paint sludge and drums removed when encountered during test pit and trench investigations
  - Total of 1,232 tons of material removed and disposed offsite
- **Larger removal actions conducted in the PMP area**
  - SR-5:
    - 195 tons of dry paint sludge, several drums, and drum remnants removed from area south of pit ring road
  - SR-13:
    - 1,413 tons of dry paint sludge and soil/waste removed
    - 1,560 tons of non-hazardous impacted soil removed
  - Historic EPA Removal Actions (1988)
- **Total Removal from PMP** (excluding 1988)
  - 4,400 tons

PMP Removal Actions

R2-0008446

Why Excavate Residuals?

Sporadic distribution of waste above water table

- Low percentage/volumes (CMP and OCDA landfills much more dense with solid waste than PMP above the water table)

Capping remedy

- "Fill in the pit surrounding the pond" is part of the pit itself
- The final remedy includes construction of a soil cap
- Why excavate the fill material surrounding the pond and place a new cap when most of the material proposed to be excavated is the existing cap, only to place a new cap?

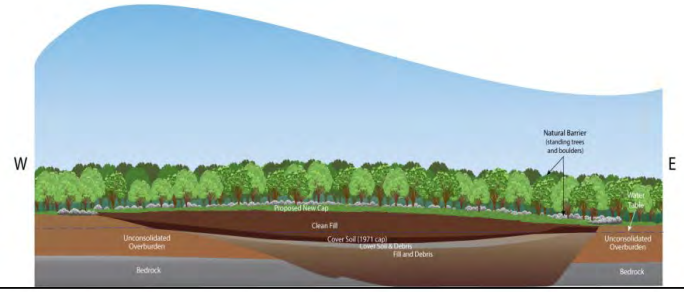
Excavation

- Excavation will require removal of the existing soil cap, then installation of a new cap
- A redundant exercise?
- Risk of impact to groundwater through mobilization of fine-grained materials
- Risk of impact to natural groundwater bioremediation system
- Additional human risks posed by heavy increase in truck trips

Peters Mine Pit Area – Comparison of Options

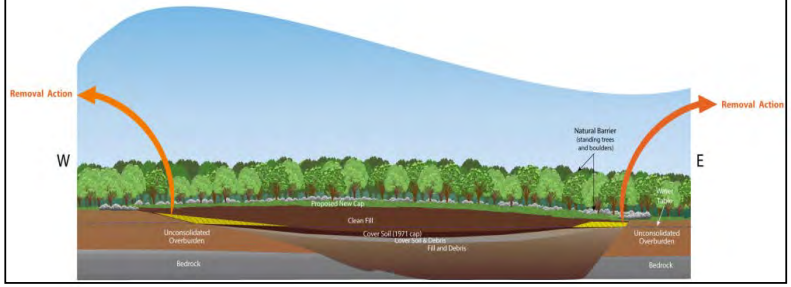
Capping Option

Approximately
6,000 truck trips



Removal and Capping Option

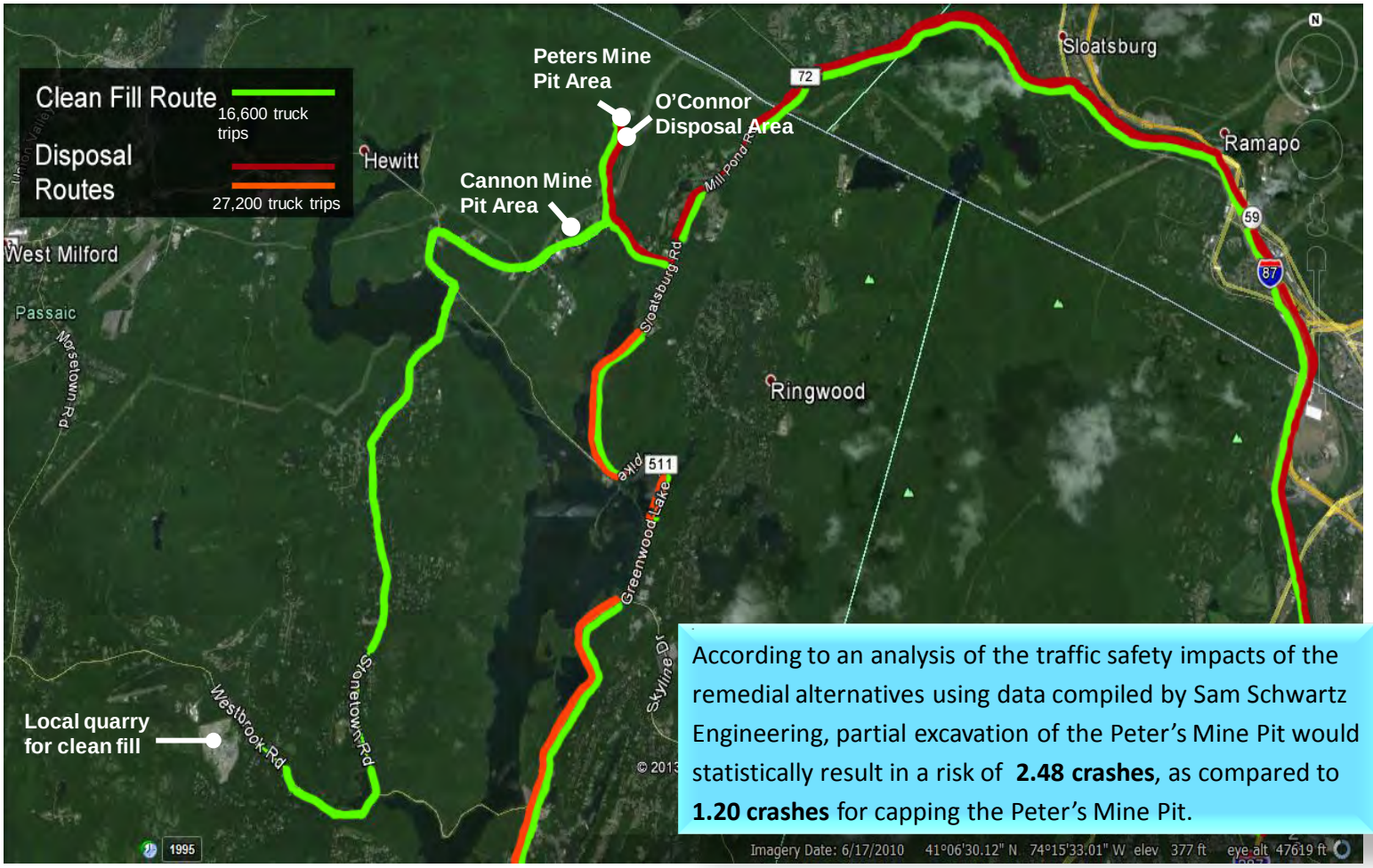
Approximately
10,700 truck trips



Artistic renderings – not to scale

- **Both have the same result – a capped landfill**
  - ***Protective of human health and the environment***
- **Risk of injury or death from heavy truck traffic with removal action**

Removal Remedy – Traffic Implications



According to an analysis of the traffic safety impacts of the remedial alternatives using data compiled by Sam Schwartz Engineering, partial excavation of the Peter's Mine Pit would statistically result in a risk of **2.48 crashes**, as compared to **1.20 crashes** for capping the Peter's Mine Pit.

Risks
Excavation vs. Capping

- Excavation will not provide any additional protections, and will only introduce new risks
- 1971 cap construction consistent with NJDEP technical regulations
  - 2 foot permeable soil cap
- Cap remains effective in controlling risks to human health and the environment
  - No dermal contacts or potential ingestion (mitigated by cap)
- New risks introduced by excavation activities
  - Removal of material may negatively impact groundwater conditions by mobilizing fine-grained materials
  - May impact natural groundwater bioremediation system
  - Increased truck traffic and vehicular accident risk

Additional risks and uncertainties are not commensurate to the risk posed by the fill materials in the pit surrounding the pond

Compaction/ Subsidence of Fill Underlying the Pond

Most likely due to:

- Differential settling
- Degradation of biodegradable wastes located at depth under the pond in the pit

Future settlement can be managed and subsidence avoided by:

- Standard state-of-the-art engineering procedures
  - Dewatering
  - Compaction
  - Long term monitoring and maintenance

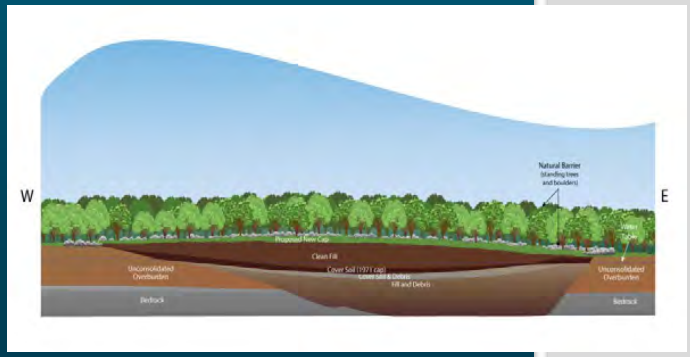
Note: The original cap was likely not constructed with compaction procedures to prevent future differential settling.

EPA states that most of degradation and compaction has already occurred (over 40 years since placement of the cap).

Enhanced Cap & Improved Maintenance Program

Alternative 4A-Capping

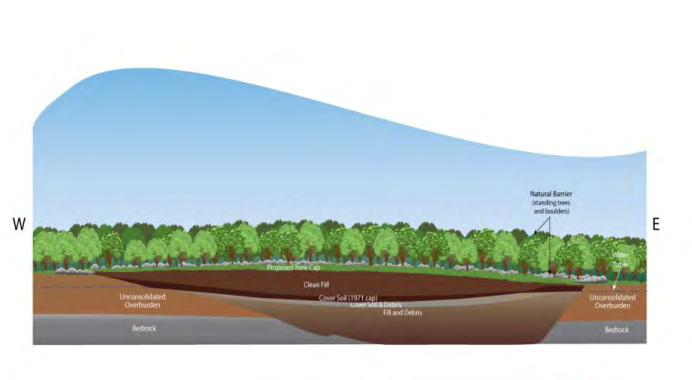
- Minimum 2 feet of fill around perimeter
  - Over the original 2 feet of fill (total of 4 feet)
- 6 feet of fill at the center of the pit
  - Over the original 2 feet of fill (8 to 10 feet total to fill pond)
- Bring pit up to ground level and mound/grade to manage surface water and drainage consistent with topography
- Plantings will enhance stability via erosion prevention and visual appearance



Long-term O&M

- Ensured by NJDEP rules for capping remedies and engineering controls
- Reporting and certification requirements
- Five-year CERCLA Reviews

Eco-friendly Alternatives to Limit Cap Access



Fence Alternatives

- The Proposed Plan provides for a fence
- Fences are attractants to vandals and dumpers

Fence alternatives that are equally protective and natural

- Thick tree stand around perimeter to prevent ATV, dirt bike, and motorcycle access
- Boulders strategically placed to limit ATV/dirt bike/motorcycle/trespassers/ hikers
- Select thorny shrubs and groundcover to dissuade foot traffic

Summary

PMP "Donut" is a misnomer

- Comingled fill is mostly INSIDE the pit

Soil cap constructed when PMP was closed in 1971 is still in place

- Covers debris/solid waste (wood, glass, metal, plastic, cardboard, paper) and residual dry paint sludge
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EPA fails to provide justification for excavation as required by the NRRB

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Plan per Alternative 4A also achieves new/ thicker cap without excavation

- Over the existing soil cap
- New cap will be constructed and maintained per NJDEP SRP regulations

Summary

Capping only remedy is fully protective of human health and the environment

Any excavation/removal will introduce risk, not reduce risk

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- Achieve a thicker cap while leveling the depression
- Match the topography of surrounding area (i.e., ***no mound***)
- Visually enhance the area as a park setting (trees, boulders, shrubs)

Dear Mr. Gowers,

I recently learned that the EPA is considering a new plan that would not fully remove the tainted soil from the Ringwood Superfund sites. This e mail is sent as protest to that decision.
The toxicity of the site is without dispute. The residents of Ringwood have suffered ill health and inconvenience.
It is irresponsible for the EPA to consider anything other than full excavation and remediation.

Thank you for registering this protest along with the many others I hope you have received.

Yours sincerely,

Fran Wolf

Dear Sir,

Having researched the subject and received first-hand accounts of the EPA hearing on November 7, 2013, I am writing to say that the EPA needs to assure that the Ford Motor Company fully completes the cleanup of the large quantities of paint and other toxic waste the company illegally dumped in Ringwood, New Jersey. This is not only an environmental disaster that needs to be remediated, but a blatant example of a corporation that thinks it can get away with irresponsible behavior because the primary victims – in this case the members of the Ramapough Nation – are a poor minority group. This is environmental racism by the Ford Motor Company, and, although the primary focus of the EPA is ecological, the government also has a legal obligation to protect its vulnerable citizens from the predations of wealthy corporations like Ford.

Thank you for your attention to this environmental and humane travesty of justice.

Sincerely,

Gary Kenton

Dear Dr. Mears, dear Dr. Gowers,

I am writing regarding the superfund site: Ringwood Mines Superfund Site in Ringwood, New Jersey.

I am a faculty member of the Department of Environmental Health, New York University. We are essentially neighbors of the Ringwood Superfund Site, just across the mountain, in Tuxedo Park (formerly Lakeville) NY. I thank you very much and the EPA for your great work for the environment. I know that you and your colleagues are doing the best that you can, working tirelessly to keep our environment safe. Thank you !

As your hard work and the hard work of your colleagues from the EPA shows, there are still worries about the mine site. I worry about the Mine Site too, for several reasons:

a) I am not sure if the paint waste has been removed from the mines (the mine shafts) themselves, and I am not sure if this is even possible, only considering the Ringwood Mines.
b) As you know, the Ringwood Mines are part of a much larger Mine system that stretches into New York, to us in Tuxedo NY (including the Sterling Forest area, and of course the former Lakeville, NY). Here are several questions: are we sure that no paint waste was dumped into the other mines ? Is the iron-containing part of the geography connected, e.g. is there a chemical - geological connection between the Ringwood area mines and the Tuxedo / Sterling Forest / Lakeville NY mines ? And if so, could the chemicals dumped into the Ringwood Mines leak through the connecting geographical formations ?

Taking this into account, does it really make sense to cap the Ringwood mines and re-grow vegetation, or cap the mines and move the recycling plant building on top ? This may lead to a forgetting of the history of this area. Chemical leakage into the ground, the woods and plants growing in that area, and into the water supply may occur without notice.

Please accept my comments as the worries of a lay person - I am trained as an immunologist, lung biologist, and veterinarian. I work on particulate matter air pollution and how this exacerbates chronic lung diseases such as asthma or pulmonary hypertension. I am not a specialist in geography, geology, mines, or in chemistry. I do know though that toxic contamination that goes un-noticed can have significant detrimental health effects.

Thanking you again for your great, hard work !

Kindly and with heartfelt thanks,

Gabriele

Gabriele Grunig DVM, PhD
Professor of Environmental Medicine
NYU School of Medicine

Institute of Environmental Medicine

Joe Gowers
Remedial Project Manager, U.S. EPA
290 Broadway, 19th Floor
New York, New York 10007-1866

Hubert de Leeuw

28th/2014

Q: I see on the web site of the EPA what they do, (supposedly) when they are confronted with a polluted site and Superfund site. It is, it looks, like "wow" the EPA, the government, takes its responsibility. Not just in the technical sense to "clean up" or resolve the pollution, but also in relation to the people who live there. Especially in relation to the effects on them and the pollution has passed on them from the moment it was present. SO WHY.. do we not see the same "attention" of the EPA as and concern help, especially for housing and health with this superfund site?? In all the "paperwork" and "Administrative" processes there is no sign of. that and worse nothing in the proposals plans and even more worse Right now. as we know people are suffering, dying ...

Hubert de Leeuw
Ramapough Supporter.

Mr. Joe Gowers, Project Manager
US EPA
290 Broadway, 19th Floor
NY, NY 10007

2 December 2013

RE: Ringwood Superfund Site
Comments on EPA Proposed Plan, dated Sept 2013

Dear Mr. Gowers;

I have reviewed the EPA proposed Plan for Ringwood Superfund Site, dated September 2013. I also attended the Public Meeting on November 7, 2013 where the plan was presented and resident comments and objections were heard.

You should carefully listen to the comments from the Upper Ringwood and other local residents

In addition to my comments for NRRB consideration, submitted June 9 (attached), I have the following additional comments based on the Proposed Plan:

1. CANNON MINE

The selected alternative for Cannon Mine should be Alt 5, not Alt 3A, as recommended by EPA.

Cannon Mine is surrounded by homes of Native American and local residents. Alternative 3A does not remove the contaminated material, and leave the potential for future exposure of children and adults. Alternative 5 is a better choice since it will "eliminate the potential for exposure to this [contaminated] fill material at this site."

History at Ringwood Superfund has shown a need for repeated additional cleanup of toxic material which was not properly removed from the site. As repeatedly stated in the Public Hearing, the only acceptable solution is to remove all toxic materials. I also stated this as item # 1 & 2 in my June 9 letter to EPA and NRRB.

2. O'CONNOR DISPOSAL AREA

The appropriate alternative is Alt 5A, as originally recommended by EPA.

Borough of Ringwood's proposed relocation of the Recycle Center to this site:

a. This is a "back door" proposal which was not openly discussed with, or presented to the residents. New Jersey laws prohibit these "back room" deals.
b. There is no need to relocate the existing recycle area. The poor conditions and lack of space at the current location are a result of mismanagement by the Borough of Ringwood. Previously

the site was managed by a private contractor who did a much better job of composting the leaves (turning them regularly) and separating brush. The site functioned much better before the Borough took it over. (The Contractor's site manager was a Native American, who lived in the local community.)

c. The EPA's mitigation plan should not change due to "promises" or "plans" from Ringwood Borough. These are not reality.
d. The Borough will not pay the high O&M cost of Alt 4A. The soil cap will be destroyed by the operation of heavy trucks hauling recycling materials and excavation equipment required in the leaf and brush composting operation. Who will be responsible for, and pay to maintain and restore the "cap"? Who will monitor the cap for damage?

3. PETER'S MINE GROUNDWATER CONTAMINATION

Alternate 6A is appropriate.

Ground water contamination, benzene and other contaminants, is still not resolved. Final resolution of this location is dependent upon addressing the ground water contamination. See my June 9 comments on this subject.

4. NJ Dept of Health Cancer Risk Study

This report is misleading. In addition to my comment (#6, below), there was additional comments presents at the Public Hearing, indicating the high rate of cancer and other illnesses in the local community.

I appreciate the opportunity to provide these comments to the EPA for their consideration.

Sincerely,

James Guinan, PE
62 Walker Drive
Ringwood, NJ 07456

ATTACHMENT

Mr. Joe Gowers, Project Manager
US EPA
290 Broadway, 19th Floor
NY, NY 10007
RE: Ringwood Superfund Site
Comments for NRRB Review

9 June 2013

Dear Mr. Gowers;

As a resident of Ringwood since the 1970's, I have followed the progress (or lack thereof) of the Ringwood Superfund Site. I offer the following recommendations for consideration by the EPA and National Remediation Review Board (NRRB):

1. Perform a Thorough Search for additional Hazardous Materials
   Recently, additional paint sludge was found in the Upper Ringwood area. A thorough search of the entire vicinity should be conducted by an INDEPENDENT agency under EPA direction(not tied to ARCASIS, Ford, Borough of Ringwood, or other potentially responsible parties) for materials which are hazardous to humans or animals. All hazardous materials should be removed and properly and safely disposed.

2. Remove all Hazardous materials from the three Areas of Concern
   All materials which are hazardous to humans and animals be removed and properly and safely disposed. Non-hazardous waste which has been dumped on these sites may remain. This includes household waste, car parts from Ford, and tailing from mining operations.

3. Groundwater Analysis
   All of the groundwater testing to date has been mostly limited to a depth of 150 feet, and 500 feet for a few "deep bedrock" monitoring wells. However, the Peters mine extends to a depth of 2500 feet. There is no reported testing for contaminants in the deeper aquifer elevations, down to the full depth of Peter's mine. The statements that there is "minimal groundwater contamination" are not substantiated since benzene levels at the 150 foot depth in Cannon Mine air shaft average 30 micrograms per liter, and peak at 48, well above the permitted level of 1 microgram per liter. Ringwood is located in the North Jersey Highlands, which provides water to the Wanaque Reservoir serving over 2,000,000 residents. In addition, many other towns and cities use wells which may rely on this deep aquifer.

   The EXCEL groundwater analysis report only superficially addressed Ringwood's own well fields, located a few miles from Peter's Mine. While they point out that contaminants have not yet been detected, they do not identify the time required for contaminants to move from Peter's

mine and Cannon Mine to the well area. Is the lack of detectable contaminants due to the fact that they have not reached the wells yet?

I highly doubt that the Cannon Mine air shaft is the only location where Benzene and other hazardous liquids were dumped. Eyewitness reports to the Ford dumping say that "everything" was dumped into the mines and pits.

Groundwater monitoring must continue in perpetuity. If future contaminant levels are discovered above acceptable levels, then the mine should be re-opened and contaminants removed.

4. Areas of Concern – O'Connor Landfill:
After item 1 and 2, above, are completed, this should be Closed and Capped

For all three sites the capping remedy is estimated at 7,000 truckloads, vs. 47,000 truckloads for complete removal. This creates significant dust and disturbance to the community, including an estimated 12 additional crashes with estimated two injuries. These accident injury rates are not adjusted for truck operation on local residential streets. I recommend against complete removal of all waste material. Many other landfills have been capped and turned into parks.

Cap should be designed to protect ground water and prevent erosion. It also should have sufficient soil cover to allow natural vegetation to grow and return the area to an almost-natural habitat. The Cap should be monitored and maintained in perpetuity.

5. Areas of Concern – Peter's Mine and Cannon Mine:
I am concerned with the hazardous waste which has been thrown into the mines, and their long-term effect on the groundwater. I also recognize the difficulty and danger to workers to dig them up. I understand that some paint sludge and VOC's have been located in Peter's Mine at a depth of 90 feet, and they have not been removed. The EXCEL report makes no estimate of the quantity of contaminants in the mines, nor the time or effectiveness of the "bio trap" microbial decomposition.

I recommend a "Pump and Treat" method be utilized to remove as much VOC as possible, and reduce their concentrations. This can be safely done through wells drilled into the mine and shafts, without complete excavation. Discharge water should be treated to safe limits before discharge to the Wanaque Reservoir. This will reduce contamination at its source, before it spreads within the aquifer, without major excavation or worker safety hazards.

Once the liquid contaminants within the mines are reduced to safe levels, the mines themselves should be Closed and Caped.

Mine shaft caps should be structurally strong and long-lasting to prevent cave-in. About 10-20 years ago a boy was lost from a ground cave-in while walking to a relative's house. His body was never recovered due to the danger involved.

ARCADIS maps also show many other mines and pits in the area. These also should be checked for hazardous material, then Closed and Capped.

6. Environmental Justice

The residents of Upper Ringwood have suffered with this contamination for a generation. This has caused cancer, liver and organ disease, skin problems, and other medical problems on the young and old.

The New Jersey Department of Health and Senior Services analysis (Dec 2011 update) said the cancer statistics were not sufficient to prove a cancer linkage . However, there was statistical linkage in males, which they blamed on smoking, rather than hunting or other outdoor activities. They also state difficulty in obtaining medical records. They do not address the small sample size of 287 residents in the study area. This small sample size created a huge range for the 95% Confidence Interval, which invalidated their conclusions.

Throughout the entire Ringwood Borough cancer rates are high. The cause has not been identified. The Toms River drinking water contamination was proven to cause cancer in children. This tragedy should not be allowed to occur again.

The Upper Ringwood contamination has also caused an economic hardship on the residents. They are unable to obtain bank mortgages on their property, or sell their property.

I recommend that "Superfund Closure" include a buy-out offer to current residential property owners with a net payment of $350,000, paid by Ford. (Due to state and federal income taxes, real estate fees, moving expenses, professional fees, etc. this would add to approximately $500,000.) This payment would partially offset previous economic hardship, and allow the residents to move to a better environment for raising their families. This amount is not based on the "fair market value" of their contaminated property, but on the cost of purchasing a new home. The existing homes can then be bulldozed, and the land returned to a natural condition. (Homes at NY Love Canal were purchased and bulldozed also.)

I appreciate the opportunity to provide comments to the EPA and NRRB for their consideration.

Sincerely,

James Guinan, PE
62 Walker Drive
Ringwood, NJ 07456
Cc: Ringwood Superfund CAG

Dear Mr. Gowers,

White papers submitted to the National Remedy Review Board by Ford Motor Company and the Burough of Ringwood site again that thirty years of study found:

Overall cancer incidence (all cancers combined) and the incidence of several specific cancers were not elevated in the community living near the Ringwood Mines/Landfill site in the time period 1979 through 2008, in comparison to cancer rates in the State of New Jersey.

And although the report did indicate a higher than expected rate of lung cancer in men, the NJDHSS and ATSDR explain that, "The fact that lung cancer is not elevated in females argues against environmental exposures to contaminants from the Ringwood Mines/Landfill site as an underlying cause of the increase in lung cancer in males." The report goes on to suggest tobacco smoking is the most likely risk factor for the observed rate of lung cancer in men.

While Good Shepherd Church records (graph submitted) reveal a family tragedy, a community decimated with a clear onset in 1969. If health studies could get a false negative for Upper Ringwood, what basis for confidence can we have, unless that gap speaks to unique conditions that have plagued the Ringwood Mines Superfund site all these years fostering injustice upon disproportionate injustice? Please answer that question for as a citizen I would like to know which it is.

The white papers submitted to the National Remedy Review Board by Ford Motor Company and the Burough also both make the points:

Although the Ringwood site has a long and complex history of ownership and use by private entities, Federal and State government, and local municipalities, two of the three remaining Areas of Concern are now owned by the Borough of Ringwood. The Borough therefore has a central, equitable, and legal role to play in selecting and implementing a final remedy for the municipal waste in the three areas.

As the elected legal entity representing the interests of the entire Ringwood community, not simply individual voices, the Borough of Ringwood's preference and level of acceptance of any proposed remedy is an important USEPA decision criterion under CERCLA and the NCP.

While the Burough of Ringwood also adds (highlights mine):

The Borough owns the majority of the Site creating its dual role as the host municipality and a Potential Responsible Party (PRP) under CERCLA. The Borough's first priority is to ensure the Site is thoroughly investigated and properly remediated for the protection of human health and the environment both in the short and long term. The Borough and its residents have suffered for many years the **long-lasting negative impacts caused by the stigma** of this Superfund Site which will dissipate only after the Site is remediated and removed from the National Priorities List (NPL). Timeliness of the remaining work is a major concern and therefore, **closure of the Site and finality are also of paramount interest to the Borough**.

Having moved in on Cannonmine Road, I have received many confidences from Upper Ringwood Residents in support of the Burough of Ringwood's own words: that their paramount interest is the closure of the Site and the suffering of the residents of Ringwood over "the stigma" of having Upper Ringwood enclosed in their municipal boundaries. In going door to door in Upper Ringwood, I heard concerns for retribution and potential harassment not just directed at them if they spoke but also their neighbors. The community of Upper Ringwood universally does not agree that the Burough of Ringwood's first priority is the equitable protection of the health and interests of the residents of the Ringwood Mines Community.

I am not writing anything here that the EPA does not know. This is an Environmental Justice community, a case study of the devastating impacts of environmental racism, the compounding factors of economic, societal, emotional stress, the relentlessly ruthless imbalances of power, know how and influence, lined up against one small community.

The story for this site is not ready for closure. In an recent article in the Suburban Trends reported the risk that the borough would face if the current site of the O'Connor Landfill were indeed cleaned and returned to a state available as it one was as a public wooded space - hearkening back to the stigma of "dangerousness" and all the terrible derogatory images spread. The article implied that it was preferable to the town that the Landfill remain a superfund site with engineered containment and so justified to be fenced than to allow any "giving back" to the residents of Upper Ringwood a bit of clean land where they might harvest water cress or wild strawberries or maybe a medicine garden... or a memorial garden... or just open space that has been cleaned to the bottom.

I having heard all the trade off do not know what the best outcome for the mines might be. To leave a people in place on top of the waste that has killed so much of their family... I do not see how that can ever be OK even if by some scientific conceptual model it is safe. We are learning so much about the psychological bases for health - the role of stress in all its compounding roles. The economic costs of remaining in place on top of superfund site, the barriers to refinancing, to getting insurance, the lingering fear that poison remains in some form. It do not see how one can leave a community on top of a superfund site with all that its history with all the failures of trust. At least the community must be empowered with the resources to continuously monitor the biota, and their own health, to their own satisfaction that the environment exposure is over, if the epigenic influences of such exposure and stress may never be.

Respectfully,

Janet Saylor

Dear Sir - I was horrified to learn of the Ringwood Council's approach to the Connors Ringwood Supersite - capping it and covering it up. Please could the EPA take the right steps to remediate this site, entirely, and make it safe for the the citizens of upper Ringwood. Those folks don't have political power but they count and I will be hugely disappointed if we let them down, once again.
Please?
Very truly yours,
a fan of the ramapough,
Joanne Manning

Anything less than total evacuation of tainted soil can not be considered. What ever Ford dumped they should clean up. Anything less is total irresponsibility.

Thanks,
John Duggan

Dear Mr. Gowers:

I support a full clean up of the Ramapough Nation's sovereign lands in Ringwood, New Jersey.

It is appalling that Ford Motor Company dumped such a huge quantity of paint and other toxic sludge in an area where people lived, much less on the historic homeland of Indigenous people who have lived in this area for thousands of years. Ford Motor Company has failed to rectify or take responsibility for their actions.

It is appalling that after the EPA placed this site on the National Priorities List of abandoned hazardous waste sites, that Ford Motor Company did not fully clean up its wastes. After Ford "finished" its excavation, EPA took it off the Priorities List. Within a few years, more sludge surfaced, and eventually the site was once again placed on the National Priorities List.

Through all this, the Ramapough people have suffered intensely: one in three Ramapough people living in this area have developed cancer. In a few short decades, the average life span in this community has declined by 20 years!

It is appalling that the EPA's presentation on November 7, 2013 did not even address the concerns about contamination of the water in and near this site. It is appalling that this issue continues to plague the Ramapough people and their neighbors in Ringwood.

Clearly the EPA needs to comprehensively clean up the Ringwood sites.

Sincerely,
Karen Shapiro

Dear Joe growers,

During a time of "recreational web surfing" I came across this article :
http://www.northjersey.com/news/238817581_EPA_extends_public_comment_period_on_Superfund_site_plan_in_Upper_Ringwood_to_Feb__5.html?c=y&page=1

While I acknowledge my poor information of the subject, I am concerned with the fact that no plan of the quality of the surface water in the area is mentioned, without mentioning the control of the water table quality as it will be exposed. This does not only represent a potential danger to the local community and the communities downstream of the water basin, but also for the worker that will work on the site's remedial

Cordially,

--
LUCAS Benjamin E.G.
Post-Doctoral research assosiate
Comparative Biosciences and
Institute for Genomic Biology

From: Mark Ackermann <mecks28@gmail.com>
Subject: ringwood landfill
Date: November 7, 2013 9:40:53 AM EST
To: gowers.joe@epa.gov lettersToTheEditor@northjersey.com

Mr. Gowers, My name is Mark Ackermann and I have lived in Ringwood since 1965 except for 4 years in the service at which time my town became a toxic waste dump. There have been past efforts that tried to clean the area with little results. At one time we were told all was fine everything cleaned up no more problems. Well, I think you know how that turned out. The epa cleaned up or are in the process of cleaning the toxic problem in the town of Ramapo not all that far from here by completely removing all toxic waste and not "capping" it. The site at Ringwood you folks want to "cap" certain areas and remove the rest. Sir, REMOVE IT ALL we are at the headwaters of the Wanaque reservoir that provides drinking water to millions of people. Do you really think that this toxic waste will NEVER get into this water??? Sooner or later it will, and then what? It will never be cheaper than right now to remove all the waste. Removing it now, while involved and difficult, will be less difficult than in the future. Do we really want to try and do this after the toxic mess is already in our reservoir? How many people need die or be injured with this waste? Can't we, just once, do this the right way and remove it all? We have had a million discussions, meetings, conferences and whatever else and we are still here with this problem. Do the right thing and remove it all once and for all!

Thank You,

Mark Ackermann

Dear Joe;

I attended the meeting last night in Ringwood.

I cannot say I agree with the capping plan for the Peter's mine or the Canon mine without more information and investigation.

I can point to some reasons why. Much of this you already know, but please read my email to the end as I will address my concerns about O'Connor at the end.

1.) The EPA assisted with designing the cleanup of 1994 that Ford was supposed to comply with. Obviously the cleanup was not complete and so was, and should be, considered a failure.
2.) It was known back in 1994 that these mines were contaminated and nothing was done to make Ford address it then.
3.) Documents were produced that showed Ford knowingly dumped paint sludge, Fluids with Benzene in them, and other waste such as Cardboard, Copper, Brass and other metals with total disregard to the people inhabiting the area. As did the town.
4.) Again in 2006 this area was deemed contaminated and again the EPA designed a plan for Ford to comply with and everyone ignored the mine contamination and possible ground water contamination.

Now it is 2014. Unbelievable to me, the mines are only being addressed now, as well as surface and ground water run off. For 20 years this could have been addressed. I could hear the weariness in the voices of the people speaking. Pleading, yet no-one is listening. These people have suffered long enough. I could accept that capping the mines were the best solution, if I knew the EPA was looking out for the welfare of these people from the start in 1994, but that is not the case. Last night I heard no logical reason to convince me or anyone else that this solution is the best solution. Not from the EPA. If the capping of the mines was for a logical reason like disturbing the debris might cause further contamination or fractures in the ground. Or if we knew that it was dangerous to the workers or the people or the environment to open up those mines and dig out the waste then I could agree. In the meantime, this tribe of people have suffered losses that can never be restored. Children, teenagers and adults health has been impaired and lives lost.

I watched the documentary today Mann vs Ford. They ate the paint as children and chewed it like chewing gum. They played in the toxic sludge. No-one warned them or looked out for them. I grew up in NJ. I'm 62 years old. I heard all the stories that were told about the "Jackson Heights Whites" in the Ramapough Mountains and how if you went up there YOU were risking your life. Well, truth be told, THEIR lives were being risked. They were exposed to Lead, Arsenic, Benzene, Dioxin and other heavy metals. No wonder their life span has dropped below 70 and they have an increase in miscarriages and cancer. Workers who worked in that environment for 8 hours a day suffered. These people lived in it 24x7.

Now on to O'Conner. I thought to myself last night as I was listening to you and Rich and Bob and others. Maybe capping the mines is the best way. Maybe without being told why you want to go that way. Sealing the earth into the mines without, God forbid, an Earthquake disturbing

it and yes there have been earthquakes in that area, might be a solution if I knew all the facts. And of course without knowing what's in the mines, the chance of another underground fire is possible. That would be another real disaster. Then, when the idea of a park was discussed for O'Conner, I thought, yes. Yes, a park would help heal the souls of these people at least partly. I had visions of an open space where Children could play and people could picnic. Trees and animals and people. Wow, what a great idea. And then the hammer dropped. The town wants to pave it and put a recycling center there, with total disregard, again I might add, to the people living in that part of town. The town wants to kill them again. The town that already has a recycling center and a DPW, wants to take that land, and not have it be an open space where wounds could heal, but make it another open wound for all to see. What a shame. No amount of money will heal these people's wounds and I believe they have not been paid enough for their hardships. All of that land should have been cleaned up 20 years ago. They should have gotten free health care and counseling for the rest of their lives. I am pleading with you, to make decisions in the interest of these people no matter what the cost. I am pleading with you, to not let the town dump on these people again. Please look out for these people. They have suffered far to long in terms of how they have been treated. Please Joe, look out for these people because no-one else has. Yours, Mary Kostus

Joe Gowers
Remedial Project Manager, U.S. EPA
290 Broadway, 19th Floor
New York, New York 10007-1866

January 28, 2014

- Since the Ramapo fault is still active, and since some published reports call for an increase in activity of the Ramapo fault ~~should~~ in coming years, doesn't these factors point to a full clean up of the mines to prevent future contamination of ground water?

Michael Garbe
32 Orchard St.
Pompton Lakes, NJ 07442

Please do a complete clean-up of Ringwood Mines, part of Ramapough Nation Lands in Ringwood NJ, to the full extent that the Ramapough Nation would like. They have the right to a healthy environment in their ancient homeland. Thank you.

EMAIL_OF_REQUESTOR

ncavanaugh2@gmail.com

NAME_OF_REQUESTOR

Nick Cavanaugh

NEW JERSEY HIGHLANDS COALITION

NEW JERSEY HIGHLANDS COALITION

508 Main St., Boonton, NJ 07005 • 973-588-7190 • www.njhighlandscoalition.org

February 5, 2014

Joseph A. Gowers, Remedial Project Manager (by email)
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, N.Y. 10007-1866

Re: Ringwood Mines/Landfill Superfund Site Operable Unit Two

Dear Mr. Gowers:

We strongly urge the USEPA to pursue its own recommended action for the remediation of the O'Connor Disposal Area, which is: Alternative 5A, Removal of Fill for Off-Site Dispersal with On-Site Re-Use of Mine Tailings. Because of the site's location, near wetlands and streams that drain into the Wanaque Reservoir, an important primary water source for communities in northern New Jersey, the capping of known contaminants is merely saving the problem for a future date. Given the stated concern of the USEPA of continued mine subsidences in the area, merely capping the contaminants will not protect our water supply in the long term. In the interest of protecting our water supply for current and future generations, removal of the contamination is the only acceptable remediation.

The New Jersey Highlands Coalition represents the concerns of its 80-plus member organizations in the preservation of the water and other environmental and cultural resources of the New Jersey Highlands region.

Sincerely,

Elliott Ruga
Senior Policy Analyst and Campaign Coordinator

YOUR WATER, YOUR FUTURE

R2-0008478

To the EPA:

This is a restatement of my brief comments of November 7, 2013.

I fully support a complete clean up of the affected sites in the Ringwood area.

The EPA is on trial.

Ford Motor Company must be held responsible. Ford provided an inadequate settlement to some of the people whose health they devastated. This settled nothing.

Years ago, Ford did an inadequate cleanup, which the EPA approved. The site was removed from the list of superfund sites and Ford was excused of further responsibility. But the site still had lots of toxic sludge and it was returned to the list of superfund sites.

More than an insult, this is the continuation of a long government policy of contempt for the Ramapough Lunaape and their Ringwood neighbors. Such behavior by the EPA would be unimaginable if this were a rich white neighborhood.

Now, the EPA promises to repeat its neglect in a most shameful way:

- First it admits it did not even look at the pollution's effect on water in the area, one of the most important and damaging ways for pollution to spread.
- Next the agency proposes to "cap" the polluted areas, to cover them over with a layer of soil. This only continues the problem. It is a literal cover-up.

This is part of a series of larger trends in society, which promise grave outcomes for all of us.

The government and the economy have increasingly merged over recent years, with government supporting all that the large commercial enterprises do. Agencies like the EPA have become apologists for industry, likewise justifying all that is done by the industries it is supposed to regulate. EPA scientists lie in order to protect these industries. The result of this charade is that the only thing regulated by EPA is the people, and it regulates the people it supposedly serves with the illusion that EPA regulates industry. These illusions are dying fast.

The climate crisis, also the result of large-scale industrial dumping into the environment, threatens the end of what has been called civilization.

If the EPA does not break with this suicidal trend and show some basic human solidarity with the beleaguered Ramapough Lunaape by a full cleanup, it will only contribute to this society's march to disaster.

Sincerely,
Paul C. Bermanzohn, MD

To Whom it May Concern,

I have reviewed the documentation and proposals prepared by your office concerning the Ringwood Mines/Landfill Superfund Site Operable Unit Two. I commend your efforts to detail the situation completely and accurately. I write to point out some departures from this basic policy in your method which is therefore reflected unfortunately within the preferred proposal.
I require a more salient explanation as to why the water studies are being conducted separately. The interaction of land and water is unavoidable and no solution to remedy pollution of one part will fail to impact the other. At Peterâ€™s Mine much of the pollution is under a lake! This appears to be a basic flaw in the approach and the consequences of failing to take a holistic view of this problem from the beginning will certainly make matters worse.
Another toxicity which has been endured by this community is a basic disregard for the humanity of itsâ€™ tribal Ramapough inhabitants. The concern of community acceptance is rightly listed in the EPA superfund evaluation criteria. Another is the long term effectiveness of the remedy. I posit that addressing the discrimination which has been directed at this group is required for these important guidelines to be met. Be sure that the proposal chosen represents a clear departure from the institutional racism of the past.
Failure to assess matters of the heart made the toxic messes the EPA superfund must now remedy possible. We cannot leave caring out of the solutions. Please find a way to truly restore this land to the Ramapough people who seek to remain at the homelands of their ancestors.
EMAIL_OF_REQUESTOR
coyotesong1@hotmail.com
NAME_OF_REQUESTOR
Paul F Tobin
ORG_OF_REQUESTOR
Green Phoneix Permaculture

COMMENTS:

At the public hearing on November 7th, the EPA's risk assessments for the Ringwood area indicated that each of the three disposal sites currently pose significant public health risks, especially to hunters and particularly to young hunters. The risks listed include exposures to unacceptable levels of lead, arsenic, and other metals in soil, plants and animal tissues. Contamination of the water supply, both locally and for the region, was also mentioned. The suggested treatment alternatives raise a number of questions and concerns, including the following, which should be addressed before decisions are made.

- What are the specific factors that pose a special health risk to young hunters? The presentation and the document at http://www.epa.gov/region2/superfund/npl/ringwood/pdfs/proposed_plan_final.pdf have not spelled out those factors in detail. For example, do the risk factors include a longer lifetime of exposure for young people, a greater toxicity due to smaller body mass, or other age-related issues? What other factors might be putting the youth of the community at special risk? The community and public at large need to be more completely informed of the risk factors to children before any informed decision on the planned treatment alternatives can be made. (Note: because hunting is normally one of the healthiest, most character-building activities for young people, and wild meat from hunting is normally among the healthiest food available, prohibiting or curtailing hunting should not be considered as any kind of valid remediation plan to return the area to normal use.)

- The presentation and the full document describe a number of remediation alternatives for each site, with the dollar cost and duration of the work for each alternative shown in detail. But no such numerical detail is given about each alternative's impact on health risks. We can only assess the likely health risk improvements for the first alternative at each site -- doing nothing -- which can only give no improvement. What are the prospective health improvement levels that the other alternatives would provide? They need to be spelled out in numerical detail, among the other costs and benefits for each alternative, before an informed decision can be made. I think everyone would agree that the health impact to the community, especially its children, is a more important detail to fully understand and consider than the dollar cost of each alternative.

- The biota study on page 5 of the document includes the following statement: "lead accumulation was not observed in the larger wildlife which is consumed by the community. Other Site-related metals were not found to be substantively entering the food chain." Yet risk assessment for the Cannon pit mine area on page 7 projects "a cumulative potential cancer risk for the hunter scenario for adult, young child and older child is 3 x 10-4, which indicates that there may be an unacceptable risk to these receptors due primarily to ingestion of arsenic found in plant and game tissue." These two statements seem inconsistent -- the first suggests there is no known problem, the second indicates an unacceptable risk from arsenic. Why isn't arsenic mentioned in the biota study? The study is called a search for "site-related contaminants" in the first paragraph, but the second paragraph contains the phrase "other site-related *metals* were not found...entering the food chain." Why was "metals" substituted for "contaminants" in the statement about findings? Since arsenic is not strictly a metal, this change of phrase leaves the question open -- was arsenic found in the study, and if so, at what level?

- For the O'Connor site, the preferred alternative is 5A, to remove all the fill back to the mine tailings. Why is this not the safest, most complete treatment for the other two sites as well? Without data on the relative health effects of each alternative, we cannot tell. The recommendation to cover the first two sites with permeable soil caps raises obvious questions as to how permanent and protective the soil caps can be. Soil can easily erode or wash away over time, or it can happen suddenly in a flood, landslide, earthquake or other act of nature. Tree roots can also drill through soil caps and liners and then absorb or disturb the toxic materials below; roots can also permit rainwater to penetrate and move through the capped materials. The report should also address the permanence of each alternative, by giving an estimate of the number of years each solution will likely remain intact. People have lived in that area for many thousands of years, and should be able to continue to do so for thousands more without having a temporary fix break down and fail. Restricting the use of an area with fences as suggested might protect it temporarily, but for how long - for decades or centuries? If the restrictions might fail or lapse over the years, how permanent would the cap fixes really be? Please include estimates of permanence in the report for each alternative.

- If the Ringwood Recycling Center is moved to the O'Connor site, how does that negate the stated reasons given for preferring alternative 5A at that site? The center might provide a different type of cap on the site, but again, for how long? Like soil that washes away over time, the recycling center might well close down in a decade or two, and then be demolished as vacant buildings often are. What would be done about the underlying toxins then? Unless we can guarantee against the toxic materials reappearing as a problem in the future, does it make more sense to do a complete cleanup and removal now while the site is uncovered?

- As the document's introduction states, the four streams that run through these sites flow into a reservoir that serves two million people. Can the permeable caps that are being promoted permanently stop rain and ground water from passing through the sites and carrying toxins into the regional water supply? A definitive answer on this, and all the questions and concerns above, is needed as input to making an informed decision about whether to simply cap the toxic materials with soil, or to remove them permanently.

I look forward to your responses to these questions -- and to inclusion of the requested information in the documentation of the proposed remediation alternatives, before final decisions are made.

Sincerely,

Paul Gorgen

Walter Mugdan
Joe Sowers

To Whom it May Concern,

I have reviewed the documentation and proposals prepared by your office concerning the Ringwood Mines/Landfill Superfund Site Operable Unit Two. I commend your efforts to detail the situation completely and accurately. I write to point out some departures from this basic policy in your method which is therefore reflected unfortunately within the preferred proposal. I require a more salient explanation as to why the water studies are being conducted separately. The interaction of land and water is unavoidable and no solution to remedy pollution of one part will fail to impact the other. At Peter's Mine much of the pollution is under a lake! This appears to be a basic flaw in the approach and the consequences of failing to take a holistic view of this problem from the beginning will certainly make matters worse.

Another toxicity which has been endured by this community is a basic disregard for the humanity of its' tribal Ramapough inhabitants. The concern of community acceptance is rightly listed in the EPA superfund evaluation criteria. Another is the long term effectiveness of the remedy. I posit that addressing the discrimination which has been directed at this group is required for these important guidelines to be met. Be sure that the proposal chosen represents a clear departure from the institutional racism of the past. Of all the proposal the only one that would remedy the situation is a complete clean up, all the others have one or more un known factors that continue to put the people at risk. Failure to assess matters of the heart made the toxic messes the EPA superfund must now remedy possible. We cannot leave caring out of the solutions. Please find a way to truly restore this land to the Ramapough people who seek to remain at the homelands of their ancestors.

Sincerely Yours
Paul Tolin 12/27/13
215 Moonhaw Rd
West Shokan NY 12494

Pequannock River Coalition
P.O. Box 392, Newfoundland, NJ 07435 (973)492-3212
www.pequannockriver.org

January 7, 2014

Joseph A. Gowers, Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, N.Y. 10007-1866

Dear Mr. Gowers,

We are writing to comment on the proposed plan for clean up of contaminants in Ringwood, NJ. The proposal by the EPA is to cap much of this material, rather than remove it.

We cannot overstress the importance of this area to the New Jersey water supply. These sites are in close proximity to the Wanaque Reservoir, one of the most critical elements in the state water supply. Both surface and groundwater from these sites flows to this reservoir. Therefore, we believe it is absolutely essential that every effort be made to remove this material. Capping of these sites is insufficient.

Please keep us informed as to any decision made on this clean up and on any hearings to discuss the planned approach.

We look forward to reviewing your response in this matter.

Sincerely,

Ross Kushner
Executive Director

Dear Mr. Gowers,

I understand that the CDC changed the lead level of concern from 10 micrograms per dL to 5 micrograms per dL over a year ago. I know that the EPA has not officially adopted this level yet. However, it is a shame if the design of remediation that will last forever is based on a number that is recognized by CDC and EPA (Water) as being much too high. Can the design be adjusted?
Prof Peel, MSCE, PE

November 30, 2013
To: gowers.joe@epa.gov

Dear Joe Gowers,

I am writing in support of the position of the Ramapough Lunaape Nation who has stated clearly that the proposed EPA clean up plan is inadequate. Residents have been very clear: Nothing short of a complete clean up is acceptable. I support the Ramapough Lunaape Nation and other concerned residents who reject anything less than a full and complete clean up of the superfund site.

I attended the recent EPA public hearing on November 7, 2013 along with two colleagues from our organization. WESPAC is a 500+ member strong organization based in Westchester County, NY. We fully support the Ramapough Nation and their right to 'Free, Prior, and Informed Consent' for actions taking place on their ancestral territories. This right is established under the United Nation Declaration on Rights of Indigenous Peoples, passed by the UN General Assembly in 2007 and adopted by the United States government in 2010, particularly mentioned under Articles 19, 29, 32 and elsewhere. [The full text of the UN Declaration on the Rights of Indigenous Peoples is here.]

Furthermore, it is indefensible for the EPA to proceed with a plan that lacks community support. Community support was one of the stated criteria to decide whether or not to proceed with the proposal. Of all the public hearings I have attended, this was the only hearing that the public was unanimous. There was unanimous opposition based on what we heard--we stayed for over 3 hours of the hearing before we had to leave. There was still a line of residents waiting to appeal to the EPA for a complete clean up when we left.

The Ford Motor Company and the town of Ringwood are responsible for unspeakable pain to the Ramapough peoples and must be held accountable. The clean up plan by the EPA must be complete. The Ramamough Lunaape Nation and other concerned residents have been clear: Nothing but a complete clean up will be accepted.

I look forward to a response email addressing the concerns raised in this letter.

Very sincerely,

Roger Drew
WESPAC Advisory Board Member

R2-0008486

Christopher Hagens

From: Christopher Hagens <chagens@rudcoproperties.com>
Sent: Tuesday, May 21, 2013 11:14 AM
To: 'gowers.joe@epa.gov'
Subject: Ringwood Superfund

Mr. Gowers:

I just read the latest article in the Bergen Record regarding the clean-up approach at the site.

I won't profess to know much about the benefits and pitfalls of the various forms of remediation, but I will say, that this has been going on from well before I bought a home along the Ramapo River in Oakland (the same week that Nixon bought in the County), and to the extent it is "of consideration," I would point out that although "more than $40 million" [for removal of the sludge] is an awful lot of money, I understand Ford's pre-tax profit for the just the First Quarter 2013 was over $2 billion.

Maybe it's time to just get rid of the poison, so a future generation can't say we had the opportunity but not the wherewithal.

Regards,

Christopher E. Hagens
Executive VP & COO
Rudco Properties Inc
365 West Passaic Street, Suite 275
Rochelle Park, NJ 07662
chagens@rudcoproperties.com
(201) 712-1300 Fax (201) 712-0419

TUESDAY, MAY 21, 2013

Deadline nears to comment on Ringwood remedy

EPA delayed decision to cap sludge

By JAMES M. O'NEILL
STAFF WRITER

Residents and others seeking to weigh in on cleanup plans at a Ringwood Superfund site have until next Tuesday to submit their final round of comments or recommendations to the federal Environmental Protection Agency.

Last June, the EPA decided to postpone a decision on the cleanup method it would use at the site after environmental and community groups pushed to have all of the pollution removed, rather than have it capped, which is one of the options being considered. Some residents have asked that the EPA buy out their homes. The 500-acre Ringwood site includes nearly 50 homes.

The EPA said it would schedule a meeting later this month or next month with its Remedy Review Board to determine the cleanup approach at the site, where Ford Motor Co. contractors dumped thousands of tons of toxic paint sludge four decades ago. The board is a peer review panel made up of EPA administrators from across the country.

Ford has been pushing to cap the various debris areas, which is a less expensive approach that would involve putting a barrier over the sludge. The EPA has estimated that fully removing the sludge at three dumping sites would cost more than $40 million.

Paint sludge filled with lead, arsenic, benzene and other toxic substances has been found in soil at the dump sites, despite repeated cleanups.

Those who want to submit comments to Joseph Gowers, the EPA's project manager for the site, can email them to gowers.joe@epa.gov. Hard copies can be mailed to Gowers' attention at U.S. EPA Region 2, 290 Broadway, 19th floor, New York, NY 10007.

More than 50,000 tons of paint sludge and tainted soil have been removed from the Ringwood sites since 2004, but more remains. The EPA now is focusing on how best to clean up the 5-acre Peters Mine pit area, the 5-acre Cannon Mine area off Van Dunk Lane and the O'Connor Disposal Area, a dump that covered 15 acres between Peters Mine Road and Ringwood State Park. The areas have been fenced off for years.

Email: oneilljj@northjersey.com

Joseph A. Gowers
Remedial Project Manager Region 2
EPA

Dear Mr. Gowers,

On November 7, 2013, I witnessed and participated in the EPA Hearing in Ringwood, N.J. Based on what I learned that evening, along with other materials I have read since, I SUPPORT A FULL CLEAN UP of the RAMAPOUGH NATION LANDS in Ringwood, N.J.

It is appalling that Ford Motor Company dumped such a huge quantity of paint and other toxic sludge in an area where people lived, much less on the historic homeland of Indigenous people who have lived in this area for thousands of years. This is a clear example of environmental racism by the Ford Motor Company, which they have failed to rectify or take responsibility for.

It is appalling that after the EPA placed this site on the National Priorities List of abandoned hazardous waste sites, that Ford Motor Company did not fully clean up its wastes. After Ford "finished" its excavation, EPA took it off the Priorities List. Within a few years, more sludge surfaced, and eventually the site was once again placed on the National Priorities List.

Through all this, the Ramapough people have suffered intensely: one in three Ramapough people living in this area have developed cancer. In a few short decades, the average life span in this community has declined by 20 years!

It is appalling that the EPA's presentation on November 7 did not even address the concerns about contamination of the water in and near this site. It is appalling that this clear example of environmental racism continues to plaque the Ramapough people and their neighbors in Ringwood.

Clearly the EPA needs to comprehensively clean up the Ringwood sites.

Sincerely,
Sally Bermanzohn, Ph.D.
Professor Emerita
Brooklyn College CUNY

Mr. Joe Gowers
U.S Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

RE: Ringwood Superfund Site Proposed Plan

January 28, 2014

Dear Mr. Gowers,

As a Ramapough Indian tribe member that cares deeply about the cleanup and restoration of the Ringwood Mines/Landfill Superfund site, I request that you fully remove all of the sludge that was dumped in my community. The Ramapough community has and continues to suffer the repercussions of this gross abuse of the land by Ford Motor Company. My community did not bring these toxic and harmful chemicals, and should not be held responsible for having to live under these conditions. Because of these circumstances, I disagree with the USEPA's decision in selecting Remediation Alternative 6a and emphasize the importance for the responsible party to fully clean up this site. All waste material from Peter's Mine Pit, Cannon Mine, and O'Connor Disposal area must be completely removed and restored so we can have our ancestral land back.

The Ramapough Indians are victims of injustice in Ringwood. For hundreds of years this area has been inhabited by our Ramapough Mountain People, and we have lived off the land since before the formation of the American colonies. As seen throughout history, my people have been mistreated and taken advantage of and it is time to correct these wrongdoings and clean up the mess that was made. My people have been plagued with staggering rates of premature deaths, rare cancers and autoimmune diseases that are a result of this contamination. We utilize the land to plant crops, hunt, and utilize every natural resource provided in order to maintain our way of life. We used to drink the water from the creek which is now contaminated from the sludge. I ask you to clean this land and allow us to keep our way of life without having to fear if our food and water will kill us. I also want to ensure these toxins in the groundwater are not entering the downstream Wanaque Reservoir, the source of drinking water for one million people.

USEPA must require Ford Motor Company to remove all paint sludge and toxic materials and restore the Ringwood Mines/Landfill Superfund site back to its original state so that I, nor my children, will be affected by the sludge left here. Thank you in advance for your time and consideration of my comments.

Respectfully,

Shirley Van Dierk

Skylands CLEAN

Citizens for the Land, Environment and Neighborhoods

The Mission of Skylands CLEAN is to protect and preserve the natural environment, water supply, and quality of life in the Highlands Region for present and future generations.

Mr. Joe Gowers
U.S Environmental Protection Agency
290 Broadway, 19th Floor New York, New York 10007

RE: National Remedy Review Board Recommendations
Ringwood Mines/ Landfill Superfund Site
Borough of Ringwood, New Jersey

December 27, 2013

Dear Mr. Gowers,

We are sending these comments to be entered into the public record and submitted to the United States Environmental Protection Agency (USEPA) National Remedy Review Board (NNRB).

As an organization that has in the past worked with the Upper Ringwood community, starting well over a decade ago, we are disheartened that after all these years there are still ideas being floated that propose capping rather than removing the contaminants.

Given the sophistication and ongoing diligence required to maintain capping, and with so many variables, we don't see how the stabilization of a cap can be guaranteed, and it would not be compatible with the needs of the community.

We believe that a full and effective remediation requires the complete removal of all wastes, and we urge that this be the plan adopted.

Respectfully,

Jon Berry

Mailing Address: Post Office Box 85, Ringwood, New Jersey 07456
General E-mail: clean@skyclean.org **Web Site: www.skyclean.org**

STONY POINT
an open space...

December 19, 2013

TO: Joseph A. Gowers, Remedial Project Manager
U.S. Environmental Protection Agency – Region 2
290 Broadway, 19th Floor
New York City, NY 10007-1866
(212) 637-4413 ~ gowers.joe@epa.gov

RE: National Remedy Review Board Recommendations
Ringwood Mines / Landfill Superfund Site
Borough of Ringwood, New Jersey

Dear Mr. Gowers,

We, the members and friends of the Community of Living Traditions at Stony Point Conference Center, are seriously troubled about the remediation of the Ringwood Mines / Landfill Superfund Site, located in the Upper Ringwood, New Jersey. Please accept this stakeholder comment into the public record and submit them to the United States Environmental Protection Agency (USEPA) National Remedy Review Board (NNRB).

The site in question is the ancestral home of the Ramapough Mountain Indian community, who were already living there when Europeans arrived several hundred years ago. Decades ago, the abandoned iron mines were used by Ford Motor Company and other responsible parties for dumping toxic waste. The site was put on the EPA's superfund list, cleanup efforts were made. However, although USEPA declared the site clean, massive mountains of toxic paint sludge still sat out in the open. It was subsequently *relisted* as a Superfund site, making it the only site in the history of the Superfund to be relisted due to failure of prior cleanup efforts.

The USEPA is now considering seven options for cleanup of the Peter's Mine Pit, Canon Mine Pit and the O'Connor Disposal Area. The options range from doing nothing, to controversially capping waste in place, to the tribe's preference: completely removing the toxic materials.

Our strong opinion is that full removal of the waste materials in question is the only ethical option at this point in time. This is first and foremost because of the level of suffering that the Ramapough Mountain Indian families and community members have endured for so many years. The underprivileged Ramapough Mountain Indian Tribe has suffered premature deaths, rare cancers and autoimmune diseases believed to be linked to these toxins. Children and grandchildren have watched entire generations suffer and die due to this contamination. According to Chief Vincent Mann, the USEPA and Ford have actually mobilized and told community the cleanup was done no fewer than 6 times. And yet the sicknesses have continued. Besides the actual loss of life and suffering, this is a psychological trauma to the community that is not excusable. At this point in time, anything less than a full removal will leave the community in the fear, and is therefore unacceptable.

In addition, complete removal of the waste is the only way to ensure the safety and health of the Ramapough's food and water sources. The tribe continues to hunt and gather the local flora and fauna as a cultural way of life, as its ancestors have for many generations. We know that the toxins in the waste, including lead, are migrating up the food chain not only in vegetables, such as wild carrots, but in mammals and other organisms as well. The proposal to "cap" the toxins will not prevent this process. Nor would it ensure the safety of the ground water — upstream of the Wanaque Reservoir — which is a drinking water

source for over two million North Jersey residents. Existing well data indicates some hydraulic connection between the waste disposal areas and ground water contamination. There are documented seeps into the surface water of site-related chemicals. Full removal of all wastes from all three disposal areas would protect current and future Wanaque Reservoir drinking water, supporting the USEPA's Strategic Plan goals for protecting drinking water supplies.

At our Conference Center, we care deeply about protecting locally-sourced food and water, and we farm and grow much of the food we serve to our guests. We also make efforts to purchase as many of our food products from growers within this region as possible. This means we have a direct stake in the viability of the soil and groundwater in the Ringwood, NJ area. We are neighbors, and beyond caring about what happens to the Ramapough community, we understand that our own future is at stake in this decision.

Please adopt a plan that implements full removal of toxins the Peter's Mine Pit, Canon Mine Pit and the O'Connor Disposal Area. Please let us know what the timeline will be on this cleanup as soon as possible. Thank you sincerely,

The undersigned members and friends of the Community of Living Traditions at Stony Point Center:

Name	Address	Signature	Date
Jonathan Rucker	291 Quaker Rd Pomona NY	Jon J Rucker	12/19/13
Amy L. Dalton	17 Cricketown Rd Stony Point NY 10980	Amy L Dalton	12/19/13
Catherine Ufford Chase	17 Cricketown Rd Stony Point NY 10980	Catherine Ufford Chase	12/19/13
Matthew Zeltzer	17 Cricketown Rd Stony Point NY 10980	[illegible]	12/19/13
Stephen Rozzelle	50 Cherry Lane Basking Ridge NJ 07920	Steve R	12/19/13
TRACY BASILE	74 Revolutionary Rd Ossining NY 10562	Tracy Basile	12/19/13
Vivian Milligan	Ringwood NJ	V Milligan	12-19-13
Eva Sleeman	14 John St. Stony Point	Eva Sleeman	12/19/13
Joyce Bresla	17 Cricketown Rd	Joyce Bresla	12/19/13
Sue Schwalbe	385 Sierra Vista Valley Ctg NY	SUE SCHWALBE	12/19/13
Paula Sandusky	69 E Main St, Stony Pt, NY	Paula Sandusky	12/23/13

Name	Address	Signature	Date
Tom O'Reilly	198 Rogert Ave. Pearl River, NY, 10965	Tom O'Reilly	12/19/13
Colin Heashian	2 Walnut St, Stony Pt.	[illegible]	12/19/13
Robin Gorrin	17 Cricketown Rd Stony Pt, NY 10980	[illegible]	12/19/13
Geoffrey Baer	5 [illegible] Hackensack NJ 07601	[illegible]	12/19/13
Tasnim Islam	37-06 69th st. Apt 1G Woodside, NY 11377	[illegible]	12/19/13
Hubert de Leeuw	P.A. Chief Maun. [illegible] Netherlands	[illegible]	12/19/13
Sahar Alsahlani	17 Cricktown Rd Stony Point, NY 10980	Sahar	12/19/13
Mary Ann Harwell	17 Cricketown Rd Stony Point NY 10980	Mary Ann Harwell	12/20/13
John A. Taylor	Stony Point, NY 10980 17 Cricketown Road	John A. Taylor	12/20/2013
April J. Leese	17 Cricketown Rd Stony Point, NY 10980	[illegible]	12/20/13
Will Summers	46 Rockledge Ave. White Plains NY 10601	Will Summers	12/20/13
Spencer Chiimbwe	17 Cricketown Rd Stony Point NY 10980	[illegible]	12/20/13
Marie [illegible]	17 Cricketown Road Stony Point NY 10980	Marie [illegible]	12/23/13
Turtle MacDermott	17 Cricketown Rd Stony Point NY 10980	Turtle MacDermott	12/23/2013
Miriam Rubin	17 Cricketown Rd Stony Point NY 10980	Miriam Rubin	12/23/2013

Name	Address	Signature	Date
PATRICIA HANNON	12 OLD LAKE RD. CONGERS	P. G. Hannon	12/19/13
STEPHEN LEONARDO	137 WEST MAIN ST STONY. Point	Stephen Leonardo	12/19/13
Ayumi Temlock	189 Liberty St Bloomfield NJ	Ayumi Temlock	12/19/13

Hi,

Thank you for your hard working. I think that it is important to keep monitoring.

Thank you very much.

Sung Hyun Park, Ph. D
Department of Environmental Medicine
New York University School of Medicine
57 Old Forge Road, Room 106
Tuxedo, NY 10987

COMMENT ON EPA PROPOSED PLAN

Examining the Borough of Ringwood's last minute proposal to build a recycling center at the O'Connor Disposal Area (OCDA), which has come to public attention not by anything said by the Borough members of the CAG but by new text in the Proposed Plan I turned for guidance to the Borough's Submission to the National Remedy Review Board. The document, almost two years old, does not specifically address the recycling center, but answers that and many other questions [which could be readily shown by quotation from the document]:

The Borough will only support caps. In the OCDA case, failing to master sufficient argument to counter EPA's preferred selection of Alternative 5A, they have gone to the fall back position of asserting landowner prerogative to move the recycling center. For those, who are mystified why the Borough should want to save money in supporting only the least expensive remedy when the Borough is fully covered by insurance, there may be several answers, but the most important one is that it's not about money but about getting EPA out of town as soon as possible: "The Borough and its residents have suffered for many years the long-lasting negative impacts caused by the stigma of this Superfund Site …. Timeliness …and therefore, closure of the Site and finality are (also) of paramount interest to the Borough." For those of us who have lived in Ringwood long enough, this is a familiar tune accompanying the first delisting and any regulatory presence of a state or federal agency.

The Proposed Plan, or rather, any solution that falls short of a complete clean-up already contains the seeds of a revival of the contamination trauma experienced by the Upper Ringwood Community. Maybe not on the same scale, maybe not immediately but caps subside, and inspections after the damage occurs don't do anybody any good. Considering, that these engineered solutions hold no promise of permanence, the regulatory process will in time, and absolutely with delisting and return of total control over the area to the Borough, grind to a standstill and once again leave the UR residents without protection.

I do not minimize the good that has been achieved by the removal of tons of contaminated material. I am dismayed by the constraints exercised through the Superfund process that prevents the restoration of a livable environment to the sorely tried Upper Ringwood Community.

Susan Gyarmati
13 Forest Road
Ringwood NJ 07456

February 3, 2014

Joe Gowers
Remedial Project Manager, U.S. EPA
290 Broadway, 19th Floor
New York, New York 10007-1866

Mr. Gowers: Please see my questions regarding the proposed remedy for the Ringwood Superfund site.

Several of the proposed options include the use of deed restrictions and engineering controls in form of fences to prevent site access. Is it legal to restrict public access to a State Park land and has the NJDEP approved what ~~appa~~ essentially equates to a taking by Ford of this public resource (State Park land) from the citizens of New Jersey into perpetuity?

The suggestion by the Borough of Ringwood for the construction of a recycling area over the O'Connor Disposal Area appears to be introduced too late in the process and presented to discourage the complete remediation of the area as described under alternative 6A. The existing recycling area appears to function adequately and the geotechnical and potential impacts of constructing and occupying this landfill area ~~would~~ would likely drive up costs for a new ~~to~~ recycling facility. Has the Borough of Ringwood and/or Ford considered these additional costs in their plans?

~~The~~ Any proposed remedy provided to the NJDEP that requires the use of a deed restriction requires correspondence from the property owner allowing the use of a deed restriction. Has such correspondence been provided by the landowners for the proposed deed restricted properties?

Have there been any natural resource damages been recovered by the PRPs for impacts to the lands and waters of New Jersey?

If a remedy is selected that requires a the use of an engineering control in the form of a cap, can a sufficiently thick cap be designed to ensure its long term viability and to preclude the use of fences, to allow the impacted areas to be used by the public?

Is the USEPA taking any steps such as a fixed time table or even submittal of designs or permit applications to ~~at~~ ensure that the proposal of a recycling center over the O'Connor area is legitimate and will not further delay the remediation of the site?

I encourage the USEPA to select a remedy that will result in the most complete removal of contaminants to allow the impacted community to live safely in their ancestoral home land.

Timothy Egan
104 Upper Lakeview Ave
Ringwood NJ 07456

Dear Mr. Gowers,

The following is a statement of support of the Ramapough Nation regarding the thorough clean up of the Superfund Site that has been contaminated for several decades in the Ringwood New Jersey area. Please let me know if this letter and all letters regarding this issue will be posted on the EPA's website. I also urge you to display your email address (or if it is displayed, to make it more visible) so that more US citizens who wish to comment can do so during this period of accepting letters from the public. Thank you for your attention to these matters.

November 10, 2013

WESPAC, a 500-member strong Westchester-based non-profit organization that works for environmental and human justice, stands in solidarity with our friends the Ramapough Lanape Nation who seek a full and just cleanup of their ancestral lands.

From the Tar Sands in Canada to the gold mines of Chile, Indigenous people worldwide have long been outspoken activists in defense of the environment. They consistently and peacefully put themselves on the frontline by standing up to the corporate and industrial powers that threaten the health of our planet.

We have learned that in the years from the 1950s to the 1980s, Ford Motor Company owned and operated a factory in Mahwah New Jersey which generated oceans of hazardous waste. Tons of paint sludge were illegally buried in the mountainsides and mines of Ringwood. And that toxic mess, much of which still lies buried, has been responsible for causing cancer in individuals residing in the affected areas and threatens to contaminate the Wanaque Reservoir.

WESPAC wishes to express to the EPA our grave concern and disappointment that such huge health and environmental issues have not been dealt with in a more timely and inclusive fashion. We urge the EPA to engage in open discussion with the Ramapough Nation in all future planning sessions regarding this Superfund site.

These people cannot be simply relocated. This is a unique site. These lands and waters are the ancestral homeland of the Ramapough and in this fact lies the heart of their steadfast determination to seek a healing, of Mother Earth and the many peoples who live here today. Their deep commitment to protect the earth deserves the EPA's respect and cooperation.

We have several questions for which we request a written response from the EPA:

1. Why can't the toxic waste be completely removed?

2. Where has the toxic waste that has been removed been taken and where will the remaining toxic waste go?

3. Why can't Ford Motor Company be held accountable for leaving this community the way they found it?

4. How does “vegetation” and “revegetation” (or the verb form “to vegetate” and “to revegetate”) – terms repeatedly used as part of the different clean up alternatives – compare to a healthy intact forest ecology?

Thank you in advance for a response.

Sincerely,

Tracy Basile
Volunteer coordinator of Friends of Turtle Island
WESPAC Foundation

Jan 28 2014

I Vivian Milligan am writing again to request a complete clean up of O'Connor Landfill. I ask that you give our residents our hunting grounds back. We have lost just about every battle that we have had in Upper Ringwood. Our death rates are off the charts, compared to any other town or locale. I am willing to except a proper capping for the Peters Mine Pit and Cannon Mine Pit. for the safety of my relatives and family members. As I have said in the past, we also lost all of our fruit trees and berry bushes that we depended on also. I am asking again to please give us some our land back I really felt like justice was here, until the Borough of Ringwood made a proposal for a new recyling center. Again I ask to please think about the real life situations

Vivian Milligan

hi joe hope al is well... scott Heck and the whole council have no true concer n for the health and well being for the upper Ringwood community at all .the only true interest that the council and yes the mayor have is for 12.000 re sidents excluding us for a place to destroy .and an environment to disrespect.. they will never change...
and if they don't get their way .what will they punish us more .funny because it has already begun by raiseing the taxes in upper Ringwood ..it is in my opinion and a request from a stake holder and a trustee of our great country ...please do the wright thing and don't give in to them and let them get this land because they have no respect for the people in upper Ringwood or the environment ....clean up and green up please pass this also to Judith enk.. and lisa plevin thank you in advance wayne mann

Dear Mr. Gowers,

I would once again like to implore the EPA to demand that Ford Motor Company remove all the toxic chemicals from Upper Ringwood.

Capping Peters Mine, Cannon Mine and the O'Connor landfill, thereby leaving tons of toxic sludge in place, would be a travesty and would leave the people that live on the site exposed to the same toxic chemicals that have plagued them since the dumping began in the mid 1960's. It is the EPA's mission to keep people safe and leaving tons of toxic sludge in place would defy that mission, which the EPA has already done once, when the site was delisted. Please do not make the same mistake again.

As a member of the Community Action Group since its inception, over 8 years ago, our recommendation from the beginning has been that all the toxic sludge should be removed—capping was never an option we entertained.

One the of the most disturbing issues that have been thrown into the mix is the plan put forward by Ringwood Borough to move and expand their recycling center onto the O'Connor landfill site. This would entail the capping of the O'Connor landfill instead of removing the sludge, which had been promised by the EPA. The residents of Upper Ringwood were told that O'Connor would be cleaned, remediated and returned to its original vegetative state.

This recycling plan was not a last minute request by Ringwood Borough. It is a plan that had been quietly suggested at a public borough hearing, of which I attended, in May of 2012. I'm sure the EPA had been made aware of this plan at that time.

Why didn't the EPA insist that Upper Ringwood residents be present when the recycling plans was formally presented to them? This seems to have been a back door meeting between Ringwood Borough, Ford and the EPA.

It is important to note that one of the major historic problems at the Ringwood Site was lack of communication between affected residents and the EPA. The people living on the site, while the dumping occurred, were never spoken to and their advice was never solicited by the EPA regarding facts about the dumping and the proposed clean up. This was one of the reasons the CAG was formed, to finally give the residents a voice in the decision making process concerning the clean up and the remediation of their community. By not including the residents of Upper Ringwood at the meeting between the EPA, the Borough of Ringwood and Ford the EPA broke trust with the community once again.

The history of abuse and neglect that Upper Ringwood residents have been subjected to by their local government is legendary. As a member of the council and mayor at the time the EPA was forced to re-list the Ringwood Site, it became very clear to me that one of the reasons the site was delisted was because Ringwood's government was very supportive of that action. Even when it was abundantly clear that there was still sludge spread throughout the community. Much of it visible to the naked eye! As Representative Scott Garrett said at the time

of the re-listing——just a simple walk through the community by the local government would have made it clear that delisting the site was wrong.

Ringwood Borough and the Ford Motor Company again seem joined at the hip, just as they were when the dumping began.
Historically, the local government and Ford used Upper Ringwood as a big dumping ground—totally disregarding the people that lived there. If the EPA allows the recycling center to be moved and expanded to the O'Connor site, Upper Ringwood will once again become a dumping ground for the local government…repeating history.

Sincerely,

Wenke Taule

Former Ringwood Mayor and Council Member

Ringwood, New Jersey

Ringwood Mines/Landfill Superfund Site Technical Memos by Chapin Engineering

Submitted by Edison Wetlands Association

1. 10/06/2004—Peter's Mine Sites, Ringwood, NJ Review and Comments on "Revised Addendum to the Site-Specific Health and Safety Plan Air Monitoring at Excavation Area SR-3 and Other Site Areas Ringwood Mines/Landfill Site, Ringwood, New Jersey"

2. 10/12/2004—Peter's Mine Site, Ringwood, NJ, Review and Comments on "Plan for the Investigation of the Ringwood Mines/Landfill Site, Module 3: Investigation of the Peter's Mine Pit Area"

3. 02/18/2005—Peter's Mine Site, Ringwood, NJ, Review and Comments of Report titled "Summary of Fall 2004 Groundwater and Surface Water Sampling January 2005 Ringwood Mines/Landfill Site Ringwood New Jersey"

4. 04/08/2005—Ringwood Mines/Landfill Site, Ringwood, NJ, Work Plan for Residential Property Investigations

5. 11/10/2005—Peter's Mine Site, Ringwood, NJ, Review and Comments on Figure 2 of the "Plan for the Investigation of the Ringwood Mines/Landfill Site, Module 3: Investigation of the Peter's Mine Pit Area"

6. 01/23/2006—Ringwood mines/Landfill Site, Ringwood, NJ, Review and Comments of Report titled "Results of the Field Reconnaissance Survey of the Ringwood Mines/Landfill Sit, Ringwood, New Jersey"

7. 12/07/2006—Peters Mine/Landfill Superfund Site, Ringwood, NJ, Sinkholes at Sheehan Drive

8. 04/09/2007—Ringwood Mines/Landfill Superfund Site, EPA Office of Inspector General's Report "Environmental Justice Concerns and Communications Problems Complicated Cleaning Up Ringwood Mines/Landfill Site" Report 2007-P-00016, April 2, 2007

9. 10/01/2007—USEPA, OIG Report "Limited Investigation Led to Missed Contamination of the Ringwood Superfund Site"

10. 10/30/2007—Ringwood Mines/Landfill Superfund Site, EPA Reports on Squirrel Tissue Analysis and Biota Testing

11. 02/22/2009—Ringwood Mines/Landfill Superfund Site, Comments on USEPA "Draft Final Report of Data Summary, Ringwood Biological Sampling, Ringwood Paint Site, Ringwood, New Jersey, February, 2009"

12. 06/29/2009—Ringwood Mines/Landfill Superfund Site, DRAFT Comments on NJ Department of Health and Human Services (DHHS) "Draft Health Consultation, Evaluation of Metals and Synthetic Organic Chemicals in Biota, Ringwood Nines/Landfill Site, Ringwood Borough, Passaic County, New Jersey, June 30, 2009"

13. 06/22/2010—Evaluation of Test Pit Data for the St. George & Miller Pits

14. 01/22/2011— TAT Memo- 2011-01 Accounting for Sludge Disposed at the Ringwood Mines/Landfill Superfund Site

15. 02/16/2011—TAT Memo- 2011-02 Comments on "Draft Memorandum of Candidate Technologies, Ringwood Mines/Landfill Site, Ringwood, New Jersey", dated November 2010

16. 02/21/2011— TAT Memo- 2011-03 Comments on "Draft Remedial Investigation Report for Peters Mine Pit, Ringwood Mines/Landfill Site, Ringwood, New Jersey", dated July 2010

17. 03/22/2011—TAT Memo- 2011-04 Comments on "Development and Screening of Remedial Technologies, Ringwood Mines/Landfill Site, Ringwood, New Jersey" dated February 2011

18. 07/29/2011— TAT Memo- 2011-05 Comments on "Draft Feasibility Study Report for Peters Mine Pit, Ringwood Mines/Landfill Site, Ringwood, New Jersey" dated Mary 2010

19. 08/01/2011— TAT Memo- 2011-06 Comments on "Draft Baseline Human Health Risk Assessment for Peters Mine Pit Area of Concern"

20. 08/01/2011—TAT Memo- 2011-07 Comments on "Draft Screening Level Ecological Risk Assessment Report and Draft Pathway Analysis Report for Cannon Mine Pit Area of Concern

21. 09/26/2011— TAT Memo- 2011-08 Additional Comments on "Draft Feasibility Study Report for Peters Mine Pit, Ringwood Mines/Landfill Site, Ringwood, New Jersey", dated May 2010

22. 12/13/2011— TAT Memo- 2011-09 Comments on "Revised Screening Level Ecological Risk Assessment Report" revised March & October 2011

23. 12/13/2011— TAT Memo- 2011-10 Comments on "Revised Draft Baseline Human Health Risk Assessment for Peters Mine Pit Area of Concern" revised November 2011

24. 03/13/2012— TAT Memo- 2012-01 Comments on "DRAFT Screening Level Ecological Risk Assessment Report O'Connor Disposal Area- (SLERA) Ringwood Mine/Landfill Site", Ringwood, New Jersey, February 2012

25. 05/23/2012— TAT Memo- 2012-02 Comments on Residential Dioxin Sample Data, Ringwood Mines/Landfills Superfund Site, Ringwood, New Jersey

26. 06/24/2012— TAT Memo- 2012-03 Comments on "Revised DRAFT Baseline Human Health Risk Assessment report for O'Connor Disposal Area Ringwood Mine/Landfill Site", Ringwood, New Jersey, April 2012

27. 06/24/2012— TAT Memo- 2012-04 Comments on "Revised DRAFT Baseline Human Health Risk Assessment Cannon Mine Pit Area of Concern Ringwood Mines/Landfill Site", April 2012

28. 06/24/2012— TAT Memo- 2012-05 Comments on "DRAFT Screening Level Ecological Risk Assessment Report Cannon Mine (SLERA) Ringwood Mine/Landfill Site", Ringwood, New Jersey, March 2012

29. 06/25/2012— TAT Memo- 2012-06 Comments on “Revised DRAFT Feasibility Study [FS] Cannon Mine Pit Area of Concern Ringwood Mines/Landfill Site” April 2012

30. 10/22/2012— TAT Memo- 2012-07 Comments on “Peter’s Mine Pit Baseline Ecological Risk Assessment, dated July 20, 2012

31. 10/22/2012— TAT Memo- 2012-08 Comments on “O’Connor Disposal Area Rived Screening Level Ecological Risk Assessment Report”

32. 04/19/2013 –TAT Memo- 2013-01 Comments on “Draft Site-related Groundwater RIR” Dated January 2013

33. 09/24/2013— TAT Memo- 2013-02 Comments on Proposed Surface Water and Sediment Pore Water Investigation Work Plan Park Brook at Peters Mine Pit Area of Concern” dated June 26, 2013

34. 11/06/2013 – TAT Memo- 2013-03 Comments on “Superfund Program Proposed Plan, Ringwood Mines/Landfill Superfund Site Operable Unit 2” dated September 30, 2013

35. 01/27/2014 – TAT Memo- 2014-01 Supplemental Comments on “Superfund Program Proposed Plan, Ringwood Mines/Landfill Superfund Site Operable Unit 2” Dates September 30, 2013

36. 01/27/2014— TAT Memo- 2014-02 Comments on Biota Study and Data Assessment: Issues with assessment of contaminated biota both animals and plants, “Superfund Program Proposed Plan, Ringwood Mines/Landfill Superfund Site Operable Unit 2”

COMMUNITY ADVISORY GROUP
RINGWOOD MINES/LANDFILL SUPERFUND SITE
RINGWOOD, NEW JERSEY

POSITION PAPER

FEBRUARY 11, 2013 COMMUNITY MEETING
with Mathy Stanislaus, USEPA Assistant Administrator & Judith Enck, USEPA Region 2 Administrator

At the January 22, 2013 meeting of the Ringwood Community Advisory Group [CAG] USEPA announced that USEPA upper management would like to meet with CAG members to hear their concerns and recommendations about the Ringwood Mines/Landfill Superfund Site. This meeting was subsequently scheduled for Monday, February 11 from 5:30 pm - 7:00 pm at the Church of the Good Shepherd located at 80 Margaret King Ave in Ringwood, New Jersey.

That January announcement was disconcerting to the CAG, as the CAG's position on the site and its cleanup had previously been clearly stated. Specifically, when Region 2 had scheduled presentation of the site to the National Remedy Review Board [NRRB] in the spring of 2012, and formal, written comments were submitted to USEPA Region 2, who forwarded them on to the NRRB. Since the NRRB cancelled its scheduled consultation of the Site, the CAG has requested, at every one of its meetings, for an update of the NRRB review and a specific statement from USEPA of the specific remedy they were evaluating. Each time the CAG has been told that a group of technical experts from headquarters was evaluating the "options", but there was no specific schedule for completion of that review.

In response to the USEPA's request for a specific position or comments for the USEPA's Senior Management, the CAG provides the following at the February 11, 2013 meeting:

- As stated in our submission to the NRRB, the CAG wants a complete a full remediation of the site, of which the areas of concern include Peter's Mine Pit, Cannon Mine Pit, O'Connor Landfill, residential homes and the Groundwater, by removing all of the toxic lead paint sludge and other contaminants of concern as well as the leachate and garbage from the landfill areas, to restore the entire site, including Ringwood State Park, as safe public land. The residents of the Site [yes, their HOMES ARE ON THE SITE immediately abutting the wastes] have lived with the wastes in their face for four generations. It is time for the wastes to go! USEPA must restore this community back to a safe place where parents can raise their children without fear of toxic chemicals impacting their health, and where families can walk trails in Ringwood State park without worrying about what toxic contaminants are underfoot or underground. **The CAG will accept nothing less than total removal**.

- Additionally, the CAG requests USEPA immediately provide the following:
    - A discussion of the specific alternatives, including any new options that have not yet been presented to the community, which are being considered for the Site.
    - A schedule for completion of the selection process, including the specific date the Site will be presented to the NRRB.
    - A detailed and rational reason for the why the release of the Proposed Plan was delayed in Washington.

Mr. Joseph Gowers
United States Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

February 5, 2014

RE: Ringwood Mines/Landfill Superfund Site
USEPA Proposed Plan Comments
Ringwood, New Jersey

Dear Mr. Gowers,

On behalf of the following nonprofit organizations, Ramapough Lenape Nation, Edison Wetlands Association (EWA), New Jersey Sierra Club, GreenFaith, Environmental Research Foundation, Citizens for A Clean Pompton Lakes and New Jersey Public Employees for Environmental Responsibility please accept the following comments into the record for the Ringwood Mines/Landfill Superfund Site Proposed Plan. We urge the United States Environmental Protection Agency (USEPA) to require Ford Motor Company to fully excavate, remediate and restore Peter's Mine Pit, Cannon Mine Pit, and O'Connor Disposal Area, as well as any sludge removal areas at this 500-acre site. This land is home to the Ramapough Lenape Native American tribe, thus making it a culturally significant area and imperative to preserve.

EWA and our technical advisors have been assisting the Ramapough Lenape Indians for over a decade which includes the review of all technical documents related to the site investigation and remediation. We have enclosed a CD and an index of all the technical memos that have been prepared by our technical advisor Chapin Engineering over a period of ten years, from 2004 to 2014. Please accept the 36 technical memos into the record for consideration in the remedy selection. It is extremely imperative that the USEPA fully review these memos in order to choose the most efficient and comprehensive cleanup for this site. [*ATTACHMENT 1*]

Additionally, we are providing you with several correspondences that must be considered included in the record. They include the following:

1. December 20, 2013: Proposed Plan Comment Extension Letter sent on behalf of EWA, Ramapough Lenape Nation, GreenFaith, New Jersey Sierra Club, Environmental Research Foundation, and NJ Public Employees for Environmental Responsibility to USEPA Assistant Administrator Mathy Stanislaus which requested a comment period extension of 60 days and a Environmental Justice Assessment performed by USEPA with meaningful community involvement before closing the public comment period. [*ATTACHMENT 2*]

2. June 11, 2013: Letter to National Remedy Review Board sent on behalf of EWA, Ramapough Lenape Nation, GreenFaith, New Jersey Sierra Club, Environmental Research Foundation, and NJ Public Employees for Environmental Responsibility to USEPA's Project Manager Joseph Gowers requesting full removal of contamination for all three areas of the Ringwood Mines/Landfill Superfund site. [*ATTACHMENT 3*]

3. February 11, 2013: Ringwood Community Advisory Group Position Paper to Mathy Stanislaus and Judith Enck requesting a full removal of all paint sludge and toxic waste from the site. [*ATTACHMENT 4*]

4. May 16, 2012: EWA letter to USEPA's Project Manager Joseph Gowers to the National Remedy Review Board requesting full removal of all wastes associated with the site. [*ATTACHMENT 5*]

Formal Request for Comment Period Adjustment & Separation of O'Connor Disposal Area:

We strongly demand an extension of the Proposed Plan comment period, that is due to close on February 5, 2014, to allow additional time for appropriate public input specifically on Peter's Mine Pit and Cannon Mine until the groundwater investigation is complete. Additionally, USEPA must complete all investigative work requested by the United States Geological Services (USGS) on the connection of discharge of contaminants between Peter's Mine Pit and the Park Brook. We do not believe that it is acceptable, or consistent with the USEPA's previous decisions, to decide on waste disposal areas that may have a connection to groundwater contamination or surface water contamination, as is the case with Peter's and Cannon Mine Pits. We would like to see closure of comment on O'Connor Disposal Area and USEPA issue a separate Record of Decision signed in a timely manner that requires Ford Motor Company to remove the paint sludge and waste materials so that immediate work can begin cleaning up this waste disposal area.

Additionally, the New Jersey Department of Environmental Protection's (NJDEP) July 2013 White Paper to USEPA supports our position. (http://www.epa.gov/region2/superfund/npl/ringwood/nrrb_pdfs/RW%20NRRB%202013%20DEP.pdf)
The NJDEP states the following:

> *"Below, the Department has outlined what we believe is a reasonable, protective, and effective approach to remedial action implementation at each of the 3 primary disposal areas. These approaches are presented with the assumption that ongoing remedial investigations for the Site-Wide Ground Water operable unit will not reveal any new, significant information that substantially changes our understanding of the ground water quality and contaminant migration potential, which has been established to date, throughout the site…" "…The Department recommends that a remedial approach similar to what ARCADIS describes in Alternative 6A, with some modifications, be implemented for this Pit. The Department's recommended approach for the Peter's Mine Pit assumes that the results of the ongoing Site-Wide Ground Water Remedial Investigation will definitively show that no significant off-site migration of contaminants is occurring in groundwater or surface waters within and near the site. In addition, the Department and the Community must have confidence that the monitoring wells surrounding this pit are effectively monitoring the identified ground water contamination and intercepting any potential migration pathways."*

We believe that the above NJDEP statement supports the community, environmental groups, and Ramapough Lenape Indian Nation's position. In addition, NJDEP shares our concern that the groundwater at the site has not been characterized and the investigation is far from complete, specifically with the investigation at Peter's Mine Pit and Cannon Mine Pit. There has also been no meaningful action to begin the work requested by the USGS or the community's technical advisers on Peter's Mine Pit. This work includes the investigation into the

impact of benzene and other contaminants from this mine and its migration into Park Brook. Guidance documents from USEPA clearly state that the impact of groundwater contaminants from source areas into surface water bodies is not allowed as a long-term cleanup strategy.

NJDEP's white paper is a counter to the concurrence of USEPA's past implemented remedies. The community and its team of engineers, scientists and technical advisors has stated that they have no confidence that monitoring wells surrounding the pits are effectively monitoring identified groundwater contamination, especially at the Peter's Mine Pit. Our team of independent technical advisors concurs with USGS's serious concerns that require testing of the Park Brook and the surrounding areas with piezometers to assess the impact of the contaminants leaving Peter's Mine Pit and entering Park Brook. To date, this sampling has not yet been done nor has the groundwater investigation at the site been complete. So, there is no way that they can have any confidence that they've identified groundwater contamination or any potential migration pathways. This further supports our request for USEPA to issue a separate Record of Decision for O'Connor Disposal Area, and extend the comment period for the other two areas until the groundwater investigation and work requested by USGS is conducted and assessed for impacts.

Additionally, we are opposed to the relocation of the recycling center onto the O'Connor Disposal Area. As USEPA has suggested in their proposed plan, we agree that this area must be excavated and restored so the community can have their hunting grounds returned. A recycling center would be a disaster for the community and the stakeholders who have worked in good faith with the state and federal health and regulatory agencies to fully clean the land, water and biota of contaminants, and reduce the risk to current and future people whose religion and cultural beliefs have been negatively impacted from so many years.

Provide Environmental Justice Assessment with Proper Community Involvement

USEPA must conduct a new Environmental Justice Assessment before they close the public comment period. The Environmental Justice Assessment originally done in May 2006 was discovered after seven years as a draft document never being released publicly or presented to the USEPA's Community Advisory Group (CAG). The USEPA's Environmental Justice Assessment was finally released as a final document in 2013, after it was accidently discovered online by CAG members still in draft form. This request is critical due to the complexity of this site. The Ramapough Lenape Native American members have been seriously exposed to toxic chemicals to from Ford Motor Company's toxic waste dumping. They have also been negatively impacted by USEPA's failures to have any meaningful community involvement in the original Environmental Justice Assessment. As was discussed in the Office of Inspector General's report, USEPA's continuous failure to communicate with the community has led to mistrust in properly cleaning up this site.

USEPA owes this community and the nation a just assessment of the environmental inequities brought on by the wholesale poisoning of the Ramapough Lenape Native American families. We are requesting that USEPA's Office of Environmental Justice formally conduct a real, updated assessment of the environmental justice impacts in Ringwood and include real community involvement. Despite what the 2013 Final USEPA assessment report claims, there was no attempt to include community input into the original draft Environmental Justice Assessment. The community's due process rights have been violated. The May 2006 draft assessment was never released to the public and no attempt was made to include it in the USEPA public

updates on the site. This fact is even more disturbing when you consider there were multiple opportunities there were to discuss the draft assessment. Over a span of eight years, Community Advisory Group meetings were held monthly with USEPA, New Jersey Department of Environmental Protection, the Federal and State health agencies, a significant number of the community and local government to discuss site updates and community concerns. Not once was the assessment discussed at any of these meetings. Additionally, USEPA stated in the 2006 draft assessment document that they would conduct door-to-door surveys, hold public meetings, as well as present the draft assessment to the USEPA's Community Advisory Group. This was not done and there was no input from the community, local residents or the Ramapough Lenape Native American Tribal leadership.

While we appreciate the Environmental Justice Coordinator finally making an appearance after seven years, the information in the original report is so fatally flawed and outdated that it failed in its important goals. This assessment must be completely redone and expedited by USEPA upper management. We strongly recommend the USEPA bring in their best and most qualified Environmental Justice Assessment team. This team must utilize information that should have been included in the first assessment. The USEPA must actually conduct and interview the community, hold public meetings and complete door-to-door interviews with families who live, were made sick and those who died because they were targeted as easy victims for dumping at this Superfund Site.

Additionally, the USEPA Environmental Justice Assessment for this site claimed that there was no comparable community to use as a suitable reference community as the basis for comparison in determining whether there was, or still exists, a disproportionate environmental and/or human health effect or impact. If USEPA bothered to discuss this with the community, they would have discovered this claim was false because the Ramapough Lenape Native American Tribe has areas where members of their tribe reside outside the Ringwood Superfund Site. If community outreach had been done the USEPA would have found that areas such as Stag Hill existed and could have been used in the data comparisons that the Environmental Justice Assessment team needed.

Loss of Cultural, Ancestral and Religious Hunting Grounds

USEPA's Environmental Justice Assessment team must include the loss of the cultural, ancestral and religious hunting grounds that are now in danger of being permanently lost to the Ramapough tribe if the USEPA does not require the full and complete cleanup of all waste disposal areas at the Ringwood Mines Superfund Site. Peter's Mine Pit, Cannon Mine and O'Connor Disposal Area have been used by the Ramapough Lenape Native American Tribal members for at least 300 years and were used for these purposes before, during and after dumping by Ford's contractors and are part of their cultural heritage and religion. By the USEPA failing to order the complete cleanup these areas, they are depriving the Ramapough Lenape Native American Tribe of their constitutionally protected rights and freedom to practice their religion. USEPA must conduct another environmental justice assessment that takes into account the religious and cultural implications of taking away the ancestral lands of the Ramapough Lenape Native American Tribe with the permanent destruction of the areas where the Ramapough Lenape Native Americans practice their religious and cultural rights that includes hunting and gathering foods in and around these areas.

Even without the community involvement promised by the USEPA, the findings of USEPA's Environmental Justice Assessment conclude that the residents of Upper Ringwood have been negatively affected. The USEPA's risk assessment fails to take into account that there is more sludge out there as demonstrated by Chief Vincent Mann's recent discovery of a large deposit of toxic paint sludge outside of the known 500-acre site boundary directly on a tributary of the Wanaque Reservoir. There is a high likelihood there are many more areas still out there that have not yet been discovered. The USEPA's risk assessment and proposed plan fall far short of being protective of human health, the environment and drinking water resources like the Wanaque Reservoir that is directly down gradient of the site. The Wanaque Reservoir is located in northeastern Passaic County in the Boroughs of Ringwood and Wanaque. The reservoir was created by damming the Wanaque River and its tributaries, all of which are part of the northern New Jersey's Passaic Watershed, creating a body of water with 2,310 acres of water surface and capturing 29.6 billion gallons of water and is a water resource for almost 2 million North Jerseyans.

Release of "Out of the Furnace" Movie

The Ramapough Lenape community is still being unfairly treated and targeted by the outside community as evidenced by the release of the new movie, "Out of the Furnace," which portrays the Ramapough Lenape in a negative stereotype. This is proof the USEPA Environmental Assessment Team failed to quantify the depth of negative impacts in this community. See this link for details:
http://www.nytimes.com/2013/12/12/nyregion/new-film-out-of-the-furnace-accused-of-stereotyping-ramapough-indians.html?pagewanted=2&_r=0

Failure to include Native Americans as Co-Regulators in National Remedy Review Board process

USEPA guidance for the National Remedy Review Board for "State/Tribal Involvement," clearly states:

> *The Board recognizes that the States and Tribes have a unique role in the Superfund program as "co-regulators," and has taken steps to ensure their significant involvement in the review process. With this in mind:*
>
> - *The Region is to consult with the affected State or Tribal government well before the Board meetings to ensure that key decision makers understand the background and intent of the review process. The Region should also make clear that the States and Tribes would have the opportunity to present their views directly to the Board.*
> - *As part of current procedure, the Region develops an informational site package that forms the basis of Board review. The Board asks that each Region work with appropriate State and Tribal personnel to ensure that the "summary of State issues" section of that package is accurately developed.*
> - *The Regional Remedial Project Manager is to distribute the full site package to the appropriate State and/or Tribe concurrent with Board distribution. He or she should also solicit their general reaction to the material at this time.*
> - *For each site, the Board meets in two stages: information gathering and deliberations. The Board will routinely invite State and/or Tribal decision makers to the information- gathering*

phase of its site reviews. The Board will invite the State and/or Tribe to participate in the deliberative discussion for State-lead fund-financed decisions, and for State/Tribe enforcement-lead decisions where the State/Tribe seeks EPA concurrence. Otherwise, the Board will limit its deliberative discussion to Agency personnel.

Since USEPA did not follow their policy and invite decision makers from the Ramapough Lenape Native American Tribe to be present at the NRRB deliberation, we request that the Proposed Plan comment period is halted until the Ramapough Lenape Native American Tribe is properly informed and included in the review process. This will allow the Ramapough Lenape Native American Tribal Leadership and community to be able to understand the process and serve as a co-regulator. ***This process has not been done and MUST not be ignored by the USEPA.***

History of the Ringwood Mines and Ramapough Contributions:

This site is a unique in all of the history of the USEPA's Superfund program. USEPA and United States of America owe this community a debt that can never be repaid for their contributions to the development of America, as we know it. Their ancestors mined the steel that built the New York Skyline and the bridges that span the United States. They mined the iron that won our wars and built the U.S. Capital dome and much more. It is a national shame that our government still treats Native American communities in this manner. USEPA and our Federal and State government has failed this community and it has cost the lives of many future generations in this unique Native American Community. It's remarkable to look at the history of this area and think about the role that it played in the founding of the United States from the first several hundred cannonballs that were launched in the American Revolution to all the various wars we've fought and won. There's a connection to this land and the success of United States and so many various important cultural things that made it possible for us to fight the wars that brought the United States Freedom.

This community has contributed greatly to the building of United States, and all they ask in return is to be allowed to raise their families in a safe and clean environment again, one where they can practice their religious customs of living off the land. This is also the only site ever to be put on the Superfund National Priorities List (NPL), reviewed by the highest levels of the USEPA and New Jersey and delisted. After many unnecessary deaths and illnesses in the community this site was finally put back on the Superfund list due to the gross errors and mismanagement within the USEPA, New Jersey Department of Environmental Protection as well as the responsible parties and their contractors.

No Waste Left in Ringwood State Park

The New Jersey Department of Environmental Protection has in their position statement to the NRRB they would allow a deed restriction on the Peter's Mine Pit and Ringwood State Parkland, which would be the first time in Jersey history where New Jersey has allowed permanent containment of hazardous materials on State parkland. This is a very bad precedent, and is inconsistent with USEPA's remedy selections. It is also a bad policy decision and constitutes a taking of State parkland, which would require permission from the New Jersey State House Commission. This approval must be obtained prior to selecting a remedy. If it is not

obtained, and the State House Commission does not approve the deed restriction, then then any selected remedy which leaves waste behind is obsolete.

Compliance with New Jersey Highlands Water Protection and Planning Act

Ringwood Mines/Landfill Superfund Site and Ringwood State Park fall within the boundaries Highlands Region, and therefore must abide by the statue of the *New Jersey Highlands Water Protection and Planning Act* (A2635) adopted June 7, 2004 and approved August 10, 2004. Specifically, it states:

> *"c. (1) The department shall develop residential and nonresidential soil remediation standards that are protective of public health and safety. For contaminants that are mobile and transportable to groundwater or surface water, the residential and nonresidential soil remediation standards shall be protective of groundwater and surface water. Residential soil remediation standards shall be set at levels or concentrations of contamination for real property based upon the use of that property for residential or similar uses and which will allow the unrestricted use of that property without the need of engineering devices or any institutional controls and without exceeding a health risk standard greater than that provided in subsection d. of this section. Nonresidential soil remediation standards shall be set at levels or concentrations of contaminants that recognize the lower likelihood of exposure to contamination on property that will not be used for residential or similar uses, which will allow for the unrestricted use of that property for nonresidential purposes, and that can be met without the need of engineering controls."*
>
> *"(1) Unrestricted use remedial actions, limited restricted use remedial actions and restricted use remedial actions shall be allowed except that unrestricted use remedial actions and limited restricted use remedial actions shall be preferred over restricted use remedial actions."*
>
> *"(3) The department may not, as a condition of allowing the use of a nonresidential use soil remediation standard, or the use of institutional or engineering controls, require the owner of that real property, except as provided in section 36 of P.L.1993, c.139 (C.58:10B-13), to restrict the use of that property through the filing of a deed easement, covenant, or condition."*

Because USEPA has not considered this law previously, they must examine the entire *Highlands Water Protection and Planning Act* and explain compliance with the act prior to finalizing any remedy, especially in Ringwood State Park. All three disposal areas are zoned by the Borough of Ringwood as either conservation, residential or recreational [*See map: ATTACHMENT 6].* This is imperative, as this entire site falls in the confines of the Highlands Region and the cleanup decision must abide the law in order to be legally compliant.

Responsibility of the Agencies

It is USEPA and the other agencies' job to protect the environment and human health must take into account that this community is different than any other community. They have been disproportionately affected and rely on the biota more so than any other community in the region. Their cultural and ancestral lands have

been sacred to them long before this was a Superfund site, and they have lived, worked and died on the mountains since the 1700s. They will continue to eat the biota and it is the responsibility of the USEPA, Ford and the Borough of Ringwood to clean this site so it no longer poses a threat to human health and the environment. The Ramapough Lenape Indian Nation will continue to practice their cultural and religious beliefs whether it is clean to protective of human health and the environment or not. USEPA has an opportunity to correct these failures by waiting a little longer on closing the public comment period on the Proposed Plan for Peter's Mine Pit and Cannon Mine Pit until a real Environmental Justice Assessment can be done and the groundwater study is complete.

Thank you for considering our comments and technical memos in the Proposed Plan public comment period. If you have any questions, Robert Spiegel of EWA will serve as the point of contact and can be reached at 732-321-1300 or via email at rspiegel@edisonwetlands.org.

Respectfully,

Robert Spiegel
Executive Director
Edison Wetlands Association

Jeff Tittel
Director
New Jersey Sierra Club

Chief Vincent Mann
Turtle Clan Chief
Sub Chief, Ramapo Lenape Nation

Peter Montague, Ph.D.
Director
Environmental Research Foundation

Rev. Fletcher Harper
Executive Director
GreenFaith

Bill Wolfe
Director
New Jersey Public Employees for Environmental Responsibility

Lisa Riggiola
Executive Director
Citizens for a Clean Pompton Lakes

Mr. Joe Gowers
U.S Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007

RE: National Remedy Review Board Recommendations
Ringwood Mines/Landfill Superfund Site
Borough of Ringwood, New Jersey

May 16, 2012

Dear Mr. Gowers,

As the Executive Director of the environmental nonprofit Edison Wetlands Association (EWA), on behalf of our 750 members in New Jersey, I am formally requesting that you forward these recommendations to the United States Environmental Protection Agency (USEPA) National Remedy Review Board (NRRB). We support the full remediation of the Ringwood Mines/Landfill Superfund Site in Upper Ringwood, New Jersey. Specifically, EWA fully supports the goals and cleanup approach of the USEPA Community Advisory Group (CAG) Resolution (attached) that calls for the full remediation and restoration of Peters Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area.

Furthermore, the CAG and EWA strongly request that all of the toxic waste is removed from the site, and that Ford Motor Company – not the Borough of Ringwood – pay the full cost of the remediation, including natural resources damages. Ford Motor Company is the responsible party and should be held criminally and civilly liable for not only the damage to the environment that they caused, but for the death and illnesses that Ford has inflicted on this unique, ancestral Native American Community.

It is important for the USEPA National Remedy Review Board (NRRB) to fully and carefully consider the following facts before making their recommendation on the remedial approach for the cleanup of Peter's Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area:

1. Ford dumped their toxic poisons on the hardworking families of Upper Ringwood, whose ancestral homes are part of the Ramapough Mountain Indian tribe. They also dumped at the North of Sharp site, as well as along the Ramapo River and many other locations with complete disregard for the damage they caused and the people they have hurt.

   At the North of Sharp site, the people who lived there were forced off of their land as result of Ford's disposal practices. The full story of Ford's toxic legacy is featured in an award winning series by the Bergen Record that can be found at www.toxiclegacy.com. EWA recommends the NRRB read this entire series to fully understand the criminality behind Ford's actions. Ford should be entirely responsible to pay for the complete cleanup of the Ringwood Mines/Landfill Superfund Site.

Edison Wetlands Association, Inc. ♦ 206 Tyler Road ♦ Edison, New Jersey 08820
Telephone 732-321-1300 ♦ Fax 732-372-7866 ♦ www.EdisonWetlands.org

2. The areas around the Peter's Mine Pit and O'Connor Disposal Area are part of Ringwood State Park and contain the remnants of past mines. These structures, buildings and locations played a significant role in American history. The iron mines and associated structures should be listed on the Federal Historic Registry, as they are artifacts and serve as a reminder of such an important aspect of American history. Iron from these mines was used for the United States Capital Dome and the George Washington Bridge, and was critical in the early success of the United States. These mines, their associated structures, and history have national significance and are a legacy to our nation and its heritage. The families of Upper Ringwood and past generations are part of this legacy. This area, including the mines, should be fully remediated and restored completely. Anything less than full remediation would require deed notices and engineering controls, making complete use for the hundreds of families, hikers and hunters who use these historic paths impossible.

3. The USEPA has identified dioxin, lead and other chemicals in and around the homes of families who live in Upper Ringwood. The USEPA should commit to fully cleaning all known disposal areas and eliminating all possible sources of contamination instead of haggling over how much toxic deadly poison is acceptable to be exposed to the families of Upper Ringwood.

   According to the Center for Disease Control (CDC), Agency for Toxic Substance and Disease Registry (ATSDR) and the New Jersey State Department of Health, there is no safe level of lead and dioxin. Reassessment of dioxin is still under review because it is still considered to be one of the most toxic chemicals known to mankind. The USEPA recently found out there is dioxin in resident's homes after EWA notified the USEPA upon finding out that the attorneys representing Ringwood residents samples came up positive for dioxin from the fires that burned in the mines. This information was only revealed publicly via the informative documentary *Mann v. Ford*, which aired on HBO in July 2011.

   The USEPA must further investigate the dioxin which was found in the homes. The sources at the mines and O'Connor disposal areas may have dioxin present as well. There are serious unresolved questions that must be addressed regarding the dioxin, and the lack of testing in the Peter's Mine Pit, Cannon Mine Pit and O'Connor Disposal. Because of this unresolved issue, there should be absolutely no consideration of containment of any waste at this site.

4. As was stated in the USEPA CAG Resolution, the underprivileged Ramapough Mountain Indian Tribe has long suffered premature deaths, rare cancers and autoimmune diseases believed to be linked to toxic waste dumped in their yards decades ago. Though USEPA declared the site clean years earlier, massive mountains of toxic paint sludge still sat out in the open. The Ringwood Mines/Landfill Superfund Site was the first site in the country to be re-listed due to the failures of all levels of government, including the NRRB.

   Upon receiving a critical request from Senator Frank Lautenberg to assist the Ramapough Tribe, due to our technical expertise and advocacy skills, EWA began to provide community assistance. It was only after EWA came to provide this assistance, did the USEPA admit the level of their mistakes. This ultimately prompted this site to be relisted in order to fully address the pending human and environmental health threats. Since EWA began helping the residents in late 2004, over 47,000 cubic tons of toxic lead sludge has been removed – six times the amount removed in

the previous 30 years **combined**. Anything less than full cleanup is just not acceptable and should not even be considered.

5. It is well known that the Native American community in Upper Ringwood has cultural and religious practices that they strictly follow. These ancestral practices and rites, including hunting for wild game and gathering local fauna and flora for medicinal and consumption purposes, have been taking place on these mountains long before Ford dumped toxic paint sludge. These religious practices have been infringed upon by both the poison that Ford dumped and the potential for these areas to be permanently fenced in and restricted, limiting access to the land forever. The USEPA has documented that the flora and fauna contain lead and other highly toxic chemicals that are bio-accumulating up the food chain. A link to this report can be found at http://dng.northjersey.com/media_server/tr/2010/12/15epa/Final_Report.pdf.

   The NRRB would be violating the Ramapough's civil and human rights if they utilize this land as permanent storage for Ford toxic poisons. Most importantly, their right to practice their religion will be hindered, which directly conflicts with constitutional and human rights as laid out in the United States Constitution and United Nations Charter on Indigenous Cultures.

6. Over 70,000 community members and stakeholders have signed EWA's petition (http://www.change.org/petitions/tell-ford-motors-to-remove-all-the-toxic-sludge-they-dumped-in-ringwood) demanding that Peters Mine Pit and Ringwood State Park must not be used as a storage area for Ford's toxic waste. Every individual who signed this petition should be considered as stakeholders, and the NRRB should carefully consider the rights of every taxpayer, voter and family who live, work and recreate in New York and New Jersey, who are affected by this decision.

7. Equally as important, this area serves as the headwaters for the Wanaque Reservoir, a vital drinking water resource for over 2 million people. Protecting drinking water reservoirs and their headwaters is a USEPA priority due to numerous droughts and water shortages that put this reservoir at great risk, which is why the federal government places great effort on its protection.

To consider anything but full removal from these unique, historical and environmental resources would make the USEPA no better than Ford Motor Company, who has expressed clear disregard for the rights of these indigenous people and the environment they have damaged. No amount of money Ford spends on public relations, green washing or even cleanup efforts at this site, will ever replace the lives of the people who died here, like Collin Milligan, the boy featured in *Mann v. Ford* whom the community had to bury at such a young age.

The USEPA and NRRB must make it clear to Ford that the failures of the past must be corrected. If the NRRB allows use of these ancestral mountains for long term disposal of highly toxic chemicals, the USEPA will condemn the families of Upper Ringwood to annihilation. Anything less than full remediation will also make a mockery of the Superfund program and all of the unwavering hard work put forth from each individual who has fought to clean up this area and bring justice to this community. Many of the residents who began this struggle to protect the Native American community and the families who live here have died fighting for a full cleanup.

Only **complete** remediation of all three disposal areas, Peter's Mine Pit, Cannon Mine Pit and the O'Connor Disposal Area, as well as any other disposal area, will provide some level of justice and closure for the immense tragedy that Ford has blighted this community with. The NRRB and USEPA must remove all paint sludge and other waste and restore this Native American land to the state it once was – a beautiful, open, flourishing land that the natives can fully enjoy.

Thank you for taking our recommendations into consideration. If you have any questions, I can be reached at 732-321-1300 or via email at rspiegel@edisonwetlands.org.

Respectfully,

Robert Spiegel
Executive Director
Edison Wetlands Association

change.org

Edison Wetlands Association

Recipient: Ms. Judith Enck, Mathy Stanislaus, Michelle J. DePass, Walter Mugdan, and Joe Gowers

Letter: Greetings,

RE: Ringwood Superfund Site Proposed Plan

On behalf of the residents of Ringwood, New Jersey, I am respectfully requesting that USEPA require Ford Motor Company to complete a full remediation of the site by removing all of the toxic lead paint sludge, restoring Ringwood State Park as safe public land, and removing the leachate and garbage from the landfill areas. We will not accept any form of capping as a remediation on these scared tribal grounds. All of the sludge and waste must be removed completely followed by a complete restoration of the land.

Due to the complexity of this site, serious exposure of toxic chemicals to the Ramapough Nation Indians from Ford's sludge dumping, and lack of community involvement, we are requesting that USEPA's Office of Environmental Justice formally conduct a real, updated assessment of the environmental justice impacts in Ringwood. USEPA's Environmental Justice Assessment team must include the loss of the cultural and religious hunting grounds, which are now slated to be permanently lost if USEPA's Proposed Plan suggested alternative is selected. Additionally, Ramapough Lenape Native American Tribe has areas where members of their tribe reside, such as Stag Hill that could have been used to determine one of the data comparisons that the Environmental Justice Assessment team needed.

This Ramapough Lenape community is still being unfairly targeted and treated by the outside community as evidenced by the release of the new movie, "Out of the Furnace," which portrays the Ramapough Lenape in a negative stereotype. This is proof the USEPA Environmental Assessment Team failed to quantify the depth of negative impacts in this community.

This tragic saga was investigated in HBO's new documentary, "Mann v. Ford," which revealed that the community's devastating health impacts continue, with the cancer-causing dioxin at high levels in residents' attics and neighboring mines filled with huge quantities of toxic waste, just upstream from the drinking water source for one to two million people.

These hard-working families suffered in agony for decades, and USEPA finally has the chance to finally make things right. Please protect the human health and environment for the Upper Ringwood community and the one to two million people that depend on this area for as a drinking water source. Restore this community back to a safe place where parents can raise their children without fear of toxic chemicals impacting their health, and where families can walk trails at a State park without worrying about what toxic contaminants are underfoot or underground.

Thank you in advance for your consideration regarding this urgent human health issue.

Signatures

Name	Location	Date
Paul Tobin	West Shokan, NY, United States	2013-12-21
Don Torino	Moonachie, NJ, United States	2013-12-21
Mary Kostus	Lodi, NJ, United States	2013-12-21
rebecca kelly	Ridley Park, PA, United States	2013-12-21
Carol Flanagan	Hawthorne, NJ, United States	2013-12-21
Tracey Cullan	Omaha, NE, United States	2013-12-21
Yasiu Kruszynski	Chicago, IL, United States	2013-12-21
David Grigsby	Wynne, AR, United States	2013-12-21
Rudolph Sellitti	Ringwood, NJ, United States	2013-12-21
Cynthia Spiegel	Edison, NJ, United States	2013-12-21
Lauren Segreto	East Brunswick, NJ, United States	2013-12-21
Deb Renna	Chestnut Ridge, NY, United States	2013-12-21
Edward Meakem	Pompton Lakes, NJ, United States	2013-12-21
Charles Defreese	Ringwood, NJ, United States	2013-12-21
Karen Stickney	Lewiston, ME, United States	2013-12-21
Carol Borzotta	Milford, NJ, United States	2013-12-21
Matthew DeFilippo	Edison, NJ, United States	2013-12-21
Pat Sharp	Grass Valley, CA, United States	2013-12-21
Charlene Dryer	Newport Beach, CA, United States	2013-12-21
Jane Davidson	Englewood, NJ, United States	2013-12-21
Julie Parcells	Ellicott City, MD, United States	2013-12-21
Kurt Koerner	North Plainfield, NJ, United States	2013-12-21
Bob Makin	East Brunswick, NJ, United States	2013-12-21
Harold Denenberg	Langhorne, PA, United States	2013-12-21
jill weingarten	brooklyn, NY, United States	2013-12-21
Maggie Yilmaz	edison, NJ, United States	2013-12-21
Rebekah Burr	Upper Pittsgrove, NJ, United States	2013-12-21
Mary Donch	New Rochelle, NY, United States	2013-12-21
Alicja Trzopek	Linden, NJ, United States	2013-12-21
chris scully	flagstaff, AZ, United States	2013-12-21

Name	Location	Date
Mary Kelley	San Francisco, CA, United States	2013-12-21
Twyla Meyer	Pomona, CA, United States	2013-12-21
Joann Ramos	Iselin, NJ, United States	2013-12-21
Kelly Walker	Houston, TX, United States	2013-12-21
Maureen Carson	Edison, NJ, United States	2013-12-21
Carole Crowe Frank	New York, NY, United States	2013-12-21
Rita Carol	Matawan, NJ, United States	2013-12-21
Mona Grønbæk	Videbaek, Cen, Denmark	2013-12-21
Lascinda Goetschius	Fair Lawn, NJ, United States	2013-12-21
Laura Mulhaul	Wayne, NJ, United States	2013-12-21
Alicia Batt	Minneapolis, MN, United States	2013-12-21
Lisa Riggiola	Pompton Lakes, NJ, United States	2013-12-21
Robert Farrell	Pompton Lakes, NJ, United States	2013-12-21
Donald Leich	Wayne, NJ, United States	2013-12-21
Emily Gerber	Merion, PA, United States	2013-12-21
Melanie Gold	Greenwood Lake, NY, United States	2013-12-21
Maria Faudree	Pompton Lakes, NJ, United States	2013-12-21
Claire Lisa	Ringwood, NJ, United States	2013-12-21
William Brennan	Wayne, NJ, United States	2013-12-21
darlene lovell	Harbor City, CA, United States	2013-12-21
Kyle Van Dyke	Ramsey, NJ, United States	2013-12-21
Edith Coleman	Wilmington, DE, United States	2013-12-21
Margo Pellegrino	Medford, NJ, United States	2013-12-21
Coralyn Gorlicki	Edison, NJ, United States	2013-12-21
Theresa Burns	South Amboy, NJ, United States	2013-12-21
Petra Loewen	brooklyn, NY, United States	2013-12-21
Elaine Wilson	Torrance, CA, United States	2013-12-21
Candy LeBlanc	Placerville, CA, United States	2013-12-22
mary denver	highland park, NJ, United States	2013-12-22
brandee chapman	Hackettstown, NJ, United States	2013-12-22
Jean Naples	West Haverstraw, NY, United States	2013-12-22
Shirley Jeude	Morrisville, PA, United States	2013-12-22

Name	Location	Date
Karen Wyatt	Bordentown, NJ, United States	2013-12-22
Marjorie Borden	Hawthorne, NJ, United States	2013-12-22
Connie VanDunk	Ringwood, NJ, United States	2013-12-22
Michael W Evans	Los Angeles, CA, United States	2013-12-22
jocelyn VanDunk	shlby, NC, United States	2013-12-22
Raymond Boisvert	Ellington, CT, United States	2013-12-22
Christopher Hoffman	Raritan, NJ, United States	2013-12-22
marjorie dzerk	greenwood Lake, NY, United States	2013-12-22
Barbara Van Dunk	Bloomingburg, NY, United States	2013-12-22
Leah Conti	Milford, PA, United States	2013-12-22
Alice Harty	Hewitt, NJ, United States	2013-12-22
Dennison Dennison	Hillburn, NY, United States	2013-12-22
Ashley Struble	West Milford, NJ, United States	2013-12-22
Laura Felton	Dingmans Ferry, PA, United States	2013-12-22
Pamela Mendoza	Wanaque, NJ, United States	2013-12-22
shari de freese	Waterview, VA, United States	2013-12-22
sheila Barry	Asbury Park, NJ, United States	2013-12-22
rebecca corter	ringwood, NJ, United States	2013-12-22
Mark and Nancy Wolfe	Pittsburgh, PA, United States	2013-12-22
harry strong	pompton lakes, NJ, United States	2013-12-22
Benjamin Fasching-Gray	Woodside, NY, United States	2013-12-22
Jeanine Mann	Vernon Township, NJ, United States	2013-12-22
Adam Friedensohn	Leonia, NJ, United States	2013-12-22
Stephanie di Bona	Hartford, CT, United States	2013-12-22
Kathleen Muench	Fords, NJ, United States	2013-12-22
Darlene Morales	Paterson, NJ, United States	2013-12-22
maranda egipciaco	Wanaque, NJ, United States	2013-12-22
Mary Loomba	Valhalla, NY, United States	2013-12-22
sandrine cortet	metuchen, NJ, United States	2013-12-22
Evelyn Lagattuta	Forked River, NJ, United States	2013-12-22
Bipasha Shom	Los Angeles, CA, United States	2013-12-22
john van dunk jr	SHELBY, NC, United States	2013-12-22

Name	Location	Date
cheryl van dunk	SHELBY, NC, United States	2013-12-22
john van dunk sr	SHELBY, NC, United States	2013-12-22
anissa lewis	wanaque, NJ, United States	2013-12-22
Daniela Bress	Niedersachsen, Germany	2013-12-22
Lynne Gordon-Watson	New York, NY, United States	2013-12-22
Adam Weber	Hood River, OR, United States	2013-12-22
Leisa Van Dunk	Ringwood, NJ, United States	2013-12-22
Edward Laurson	Denver, CO, United States	2013-12-22
Gregory Spangler	Whiting, NJ, United States	2013-12-22
Tanya Dennison	tallman, NY, United States	2013-12-22
Jane Volkmann	Bloomfield, NJ, United States	2013-12-22
fayelynn van dunk	Wanaque, NJ, United States	2013-12-22
Dawn Schinina	Woodstock, IL, United States	2013-12-23
gwendolyn carter	ringwood, NJ, United States	2013-12-23
Tara Mann	haskell, NJ, United States	2013-12-23
Dona Wallerius	Hardyston Township, NJ, United States	2013-12-23
Rory Farina	Warwick, NY, United States	2013-12-23
Jeanne Tanis	Middletown, NJ, United States	2013-12-23
Nicole Oliver	Bayville, NJ, United States	2013-12-23
Cathy Milligan	Wanaque, NJ, United States	2013-12-23
Robert DeGroat	Hewitt, NJ, United States	2013-12-23
Nicolas Lubitz	Meppen, DE, United States	2013-12-23
Brian Tiger	Garnerville, NY, United States	2013-12-23
Mabel Casagrand	Metuchen, NJ, United States	2013-12-23
trish milligan	Ringwood, NJ, United States	2013-12-23
Steven Conklin	Ringwood, NJ, United States	2013-12-23
James Martini	ringwood, NJ, United States	2013-12-23
Barbara Zach	Ringwood, NJ, United States	2013-12-23
Betsy Smith	Richmond, VT, United States	2013-12-23
silas mann jr	BLOOMINGDALE, NJ, United States	2013-12-23
janice Vandunk	BLOOMINGDALE, NJ, United States	2013-12-23
pat franz	Gaffney, SC, United States	2013-12-23

Name	Location	Date
Yvonne Pagan	Ringwood, NJ, United States	2013-12-23
Thomas McMullen	Stroudsburg, PA, United States	2013-12-23
vanessa spann	Ringwood, NJ, United States	2013-12-23
Cheryl Laviola	Red bank, NJ, United States	2013-12-24
Concerned Citizen	New City, NY, United States	2013-12-24
Thelma Paula Fernandez	Brooklyn, NY, United States	2013-12-24
Brian Zach	Ringwood, NJ, United States	2013-12-25
O. Ruzi	Clifton, NJ, United States	2013-12-26
Kush Patel	Edison, NJ, United States	2013-12-26
rachial spinelli	hawthorne, NJ, United States	2013-12-27
omar shah	columbus, OH, United States	2013-12-28
shedy berrios	Jacksonville, NC, United States	2013-12-28
Chantal Buslot	Hasselt, TX, United States	2013-12-29
Evie Glodic	Knightdale, NC, United States	2013-12-29
Laura Melotti	Italy	2013-12-30
Sheila Stevens	Philadelphia, PA, United States	2013-12-31
Daniel DiRocco	Montclair, NJ, United States	2014-01-01
John F. House.Sr	Webster, KY, United States	2014-01-02
Patti Reynolds	Myrtle Beach, SC, United States	2014-01-03
Cheryl Rubino	Middlesex, NJ, United States	2014-01-07
Kathy Robles	Winfield Park, NJ, United States	2014-01-08
Barbara Feldt	Cold Spring, NY, United States	2014-01-08
Gerri Alton	Annapolis, MD, United States	2014-01-08
mary heyns	piscataway, NJ, United States	2014-01-08
LuAnn Powell	Haverstraw, NY, United States	2014-01-08
Autumn Wind Scott	Toms River, NJ, United States	2014-01-08
kosmeik mckinney	Clifton, NJ, United States	2014-01-08
Alice Smith	Oakley, CA, United States	2014-01-08
John Beck	Manahawkin, NJ, United States	2014-01-08
Robyn Torres	Watervliet, NY, United States	2014-01-08
Vicki Miller	Newport News, VA, United States	2014-01-08
Regina Mann	Bloomingburg, NY, United States	2014-01-08

Name	Location	Date
charlene gooden	Stone Mountain, GA, United States	2014-01-08
Linda Romney	Nanuet, NY, United States	2014-01-08
charles mann	warwick, NY, United States	2014-01-08
Henrietta Wise	Olivebridge, NY, United States	2014-01-08
Reverend Keith Ross	Old Tappan, NJ, United States	2014-01-08
Joyce Ohrvall	Hurleyville, NY, United States	2014-01-09
David Wise	Olivebridge, NY, United States	2014-01-09
Karin Wolf	Phoenicia, NY, United States	2014-01-09
Lindsey Johnson	Ohsweken, Canada	2014-01-09
kim mann	passaic, NJ, United States	2014-01-09
Leisha Givens	easton, PA, United States	2014-01-09
Karen Hall	Stormville, NY, United States	2014-01-09
Doris Delaney	Pittsburgh, PA, United States	2014-01-09
Dale Ledingham	Portsmouth, OH, United States	2014-01-09
Amanda Rogers-Petro	Abington, PA, United States	2014-01-09
myra long	New Paltz, NY, United States	2014-01-09
tuan hauptmann	Portland, OR, United States	2014-01-09
Viola Muhammad	Aventura, FL, United States	2014-01-09
Beverly Jennings	Mahwah, NJ, United States	2014-01-09
Tom Gorman	Rockaway, NJ, United States	2014-01-09
Christopher Holm	Fort Collins, CO, United States	2014-01-09
Jennifer Hathaway	Ramona, KS, United States	2014-01-09
Ez del Prado	Mahwah, NJ, United States	2014-01-09
Dale Peterson	Gibsons, Canada	2014-01-09
Chief Vincent Mann	West Milford, NJ, United States	2014-01-09
Chris Wellins	Wanaque, NJ, United States	2014-01-09
Deirdra Perry	Fontana, CA, United States	2014-01-09
andrew runningwolf	staten island, NY, United States	2014-01-09
Toni Powell	Raleigh, NC, United States	2014-01-09
Cindy Petry	Pittsburgh, PA, United States	2014-01-09
Bruce Morgan	Kailua Kona, HI, United States	2014-01-09
Jesse Mann	Centennial, CO, United States	2014-01-09

Name	Location	Date
Alex Lotorto	Milford, PA, United States	2014-01-09
evelyn hettle	toledo, OH, United States	2014-01-09
Esperanza Gailliard	Waterford Township, MI, United States	2014-01-09
Barry Van Dunk	, Australia	2014-01-09
marcella woodley	Allentown, PA, United States	2014-01-09
Laurel Kyles	Danville, VA, United States	2014-01-09
mo martinez	san angelo, TX, United States	2014-01-09
Robert Mann	montrose, NY, United States	2014-01-09
Wendie Goetz	Newton, NJ, United States	2014-01-09
Rahema Wells	middletown, NY, United States	2014-01-09
Patrick Giles	Pompton Lakes, NJ, United States	2014-01-09
Annette Rizzi	Warwick, NY, United States	2014-01-09
Timothy Dahler	Barrington, RI, United States	2014-01-09
Charlene DeFreese	mahwah, NJ, United States	2014-01-09
Deneen Milligan	Ringwood, NJ, United States	2014-01-09
nancy Arellano	CHARLOTTE, NC, United States	2014-01-09
Leon De Groat	Sevierville, TN, United States	2014-01-09
Laura Zucker	Teaneck, NJ, United States	2014-01-09
RUSSELL Tassie	Southington, CT, United States	2014-01-09
Kimberly Usher	Wailuku, HI, United States	2014-01-09
WHISPERING DEER MCKAY	bloomfield, NJ, United States	2014-01-09
Chanelle jones	Maplewood, NJ, United States	2014-01-09
Sharon Saranovic	pompton Lakes, NJ, United States	2014-01-09
Kelli McCloud	Fair Lawn, NJ, United States	2014-01-09
Rhonda Crawley	New Milford., NJ, United States	2014-01-09
Barbara McKernan	Somers Point, NJ, United States	2014-01-09
Hawk Storm	Sharon, CT, United States	2014-01-09
Andrew Williams	Watertown, NY, United States	2014-01-09
Sandra Jurgensen	Netcong, NJ, United States	2014-01-09
Laurie Ann Villa	Waterbury, CT, United States	2014-01-09
Irish Maliborski	Pompton Lakes, NJ, United States	2014-01-09
Jeffrey Fountain	Newburgh, NY, United States	2014-01-09

Name	Location	Date
Dean Hutchins	Arlington, VA, United States	2014-01-09
Trina Morgan	Colton, CA, United States	2014-01-09
Arthur Jennings	Scotchtown, NY, United States	2014-01-09
Alex Tracy-D'Unger	Chicopee, MA, United States	2014-01-09
Kenneth Lazorchak	flemington, NJ, United States	2014-01-09
Randy hunt	New Hope, PA, United States	2014-01-09
Linda Henderson	Newport News, VA, United States	2014-01-09
Alfreda Richardson	Union, NJ, United States	2014-01-09
meg birch	saugerties, NY, United States	2014-01-09
Hassan Davis	East Orange, NJ, United States	2014-01-09
Trena Mann-Araujo	Clifton, NJ, United States	2014-01-09
Donald Henderson	Newport News, VA, United States	2014-01-09
Maureen Kelley	Rahway, NJ, United States	2014-01-09
LouAnn Brand	montauk, NY, United States	2014-01-09
Nancy Boivin	Bowler, WI, United States	2014-01-09
MAURICE demund	Effort, PA, United States	2014-01-09
samuel cook	Compton, CA, United States	2014-01-10
Ken (wolf eyes) lenape Macaulay	pen argyl, PA, United States	2014-01-10
Donna Fitzpatrick	Toledo, OH, United States	2014-01-10
Brian Mabelitini	Pensacola, FL, United States	2014-01-10
Ruth Paez	Pompton Lakes, NJ, United States	2014-01-10
lia russ	Wingdale, NY, United States	2014-01-10
Christle Degroat	Mahwah, NJ, United States	2014-01-10
Terri Mann-Lamb	DeKalb, IL, United States	2014-01-10
sherry mosier	butler, NJ, United States	2014-01-10
Anna Tomacari	Gwinn, MI, United States	2014-01-10
Jennifer Stamatakos	Sycamore, IL, United States	2014-01-10
Jeff Windwer	Wayne, NJ, United States	2014-01-10
JoAnne Hearns	Newark, NJ, United States	2014-01-10
Lilli Palin	Greenfield, NJ, United States	2014-01-10
Michael J Petillo	Verona, NJ, United States	2014-01-10
Robert McManus	West Warwick, RI, United States	2014-01-10

Name	Location	Date
Deb Wilson	westlasnd, MI, United States	2014-01-10
Pearl Pitt	Spring Valley, NY, United States	2014-01-10
Jodi Hurley	Maumee, OH, United States	2014-01-10
Alex Chapin	Nyack, NY, United States	2014-01-10
marynell moody	Nashville, TN, United States	2014-01-10
Debra Gaylord	Schaghticoke, NY, United States	2014-01-10
Chelsea Foss	teaneck, NJ, United States	2014-01-10
Robin Vandunk	Wanaque, NJ, United States	2014-01-10
Alicia Butler	Mahwah, NJ, United States	2014-01-10
Justin milligan	Ringwood, NJ, United States	2014-01-10
Devin Degroat	Ringwood, NJ, United States	2014-01-10
Anthony Vandunk	Hewitt, NJ, United States	2014-01-10
Brooke Milligan	Ringwood, NJ, United States	2014-01-10
Jennifer Tokarczuk	Navarre, FL, United States	2014-01-10
Dennis Defreese	Elkland, PA, United States	2014-01-10
Richard Van Dunk	West Milford, NJ, United States	2014-01-10
Barbara Tintera	Pompton Lakes, NJ, United States	2014-01-10
Kristina Ostrom	Pequannock, NJ, United States	2014-01-10
Jason Nolan	Sayreville, NJ, United States	2014-01-10
Suzanne Herbert	Somerset, , Egypt	2014-01-10
Sarah Reed	West Haven, CT, United States	2014-01-10
Fran Vitolo	Hewitt, NJ, United States	2014-01-10
Ellen Perry	Santa Clara, CA, United States	2014-01-10
Joan Britz	Odessa, TX, United States	2014-01-10
stephanie shelkenberger	Hackensack, NJ, United States	2014-01-10
Susan Dorbeck	DeKalb, IL, United States	2014-01-10
Christina Countryman	Shokan, NY, United States	2014-01-10
jeffrey shelton	north hills, CA, United States	2014-01-10
Bernadette Scott	Newark, NJ, United States	2014-01-10
Jennifer Vaval	Hillburn, NY, United States	2014-01-10
Kurt Hartel	Montvale, NJ, United States	2014-01-10
christine cellars	pomona, NY, United States	2014-01-10

Name	Location	Date
susan mann	suffern, NY, United States	2014-01-10
Patrick McElligott	Mt Upton, NY, United States	2014-01-10
Marianna Mujica	Parkville, MD, United States	2014-01-10
Sayra Pinto	East Boston, MA, United States	2014-01-10
Pam Krimsky	Highland, NY, United States	2014-01-10
Sharon Vaught	Bangor, PA, United States	2014-01-10
Reverend Dr Ellen Sokolow	Treadwell, NY, United States	2014-01-10
Vera Scroggins	Brackney, PA, United States	2014-01-10
chelsey degroat	Conway, SC, United States	2014-01-10
melisca klisanin	NY, NY, United States	2014-01-10
Heidi Kuhl-Thompson	Syracuse, NY, United States	2014-01-10
Mary Gleason	Morristown, NJ, United States	2014-01-10
mary persuit	sewickley, PA, United States	2014-01-10
Kim Capece	Vineland, NJ, United States	2014-01-10
Anna Hayward	Port Jefferson, NY, United States	2014-01-10
David Becker	DeKalb, IL, United States	2014-01-10
denise richardson	Spring City, PA, United States	2014-01-10
catherine dennison	Stony Point, NY, United States	2014-01-10
Sandy Lawson	Wanaque, NJ, United States	2014-01-10
Eclipse Neilson	Barrington, RI, United States	2014-01-10
Andra Leimanis	LaFayette, NY, United States	2014-01-10
Clara Palacios	Paterson, NJ, United States	2014-01-10
Wendy Lynne Lee	Bloomsburg, PA, United States	2014-01-10
Patricia Mayhew	Olivebridge, NY, United States	2014-01-10
judith mann	somers, CT, United States	2014-01-10
Howard Solomon	DeKalb, IL, United States	2014-01-10
Shara Houghtaling	North Springfield, VT, United States	2014-01-10
tamra cook	Syracuse, NY, United States	2014-01-10
Nancy Andry	Monroe, CT, United States	2014-01-10
R. Tom Frost Jr	Nicholson, PA, United States	2014-01-10
white Feather Curtiss	Olivebridge, NY, United States	2014-01-10
Jennifer Yates	Rockville, MD, United States	2014-01-10

Name	Location	Date
Loretta Shigo	Doylestown, PA, United States	2014-01-10
Monica Arias Miranda	Duanesburg, NY, United States	2014-01-10
Carole Blodgett	Wauregan, CT, United States	2014-01-10
SALLY BERMANZOHN	Rosendale, NY, United States	2014-01-10
sally sophia	Rochester, WA, United States	2014-01-10
RUTH ANN HASBROUCK	MIDDLETOWN, NY, United States	2014-01-10
Janet Saylor	Montvale, NJ, United States	2014-01-10
Gina Martin	Suffern, NY, United States	2014-01-10
Jennafer Yellowhorse	Santa Monica, CA, United States	2014-01-10
kim mcpherson	ringwood, NJ, United States	2014-01-10
Cecilia St. King	Red Hook, NY, United States	2014-01-10
Jenna North	utica, NY, United States	2014-01-10
christina bargher	Oneonta, NY, United States	2014-01-10
Bill S.	Utica, NY, United States	2014-01-10
Lori New Breast	East Glacier Park, MT, United States	2014-01-10
Ashley Gillies	Wanaque, NJ, United States	2014-01-10
Maura Stephens	Spencer, NY, United States	2014-01-10
Debra Glover	Scotch Plains, NJ, United States	2014-01-10
Paul McMahon	bearsville, NY, United States	2014-01-10
Roselee f	Clayton, NJ, United States	2014-01-10
Andrea Lynn Dastoli	Swansea, MA, United States	2014-01-10
Autumn Arms	Portland, OR, United States	2014-01-11
DESIREE finster	Rochester, NY, United States	2014-01-11
Debbie Majcher	Crystal Lake, IL, United States	2014-01-11
DAPHNE VAN DUNK FAISON	SAN ANTONIO, TX, United States	2014-01-11
Daniel Black	glen rock, NJ, United States	2014-01-11
Lorraine Carlino	Port Jefferson Station, NY, United States	2014-01-11
James Walsh	New Orleans, LA, United States	2014-01-11
Malorie Winerman	Newfoundland, NJ, United States	2014-01-11
jennifer mann	Conway, SC, United States	2014-01-11
Hubert de Leeuw	Wommelgem, Belgium	2014-01-11
Tom Collins	Sevierville, TN, United States	2014-01-11

Name	Location	Date
Eileen Diebold	Bloomingdale, NJ, United States	2014-01-11
penny post	wanaque, NJ, United States	2014-01-11
Kimberly Brain-Woolbright	Flagstaff, AZ, United States	2014-01-11
Robert Cooper	Greeneville, TN, United States	2014-01-11
Dana Patterson	edison, NJ, United States	2014-01-11
chris boston	oroville, CA, United States	2014-01-11
Saralinda Lobrose	plainfield, MA, United States	2014-01-11
vanessa deutschmann	columbia, MD, United States	2014-01-11
Charlene Shearrer	Antioch, CA, United States	2014-01-11
PHILIP GURRIERI	KINGSTON, NY, United States	2014-01-11
johny bragg	Paterson, NJ, United States	2014-01-11
dana maher	coral springs, FL, United States	2014-01-11
Rosalyn Cherry	New Paltz, NY, United States	2014-01-11
Christine Dahlgren	Netcong, NJ, United States	2014-01-11
Chris de Castell	Toronto, Canada	2014-01-11
Marianne Tate	Newark, NJ, United States	2014-01-11
Vincent Colletti	Oneonta, NY, United States	2014-01-12
sharyn pratt	Carmel, NY, United States	2014-01-12
jenifer bazyl	hackettstown, NJ, United States	2014-01-12
Nancy Furnbach	Ringwood, NJ, United States	2014-01-12
Cindy Sanes	Willard, NC, United States	2014-01-12
Kristen Hadley	Hillburn, NY, United States	2014-01-12
Annette Scarpitta	Bethesda, MD, United States	2014-01-12
Anne Pyterek	Crestone, CO, United States	2014-01-13
darcy kamp	Wayne, NJ, United States	2014-01-13
richard piszczek	Sierra Vista, AZ, United States	2014-01-13
Sis Penders	Danville, VA, United States	2014-01-13
Carla Friedrich	Mesa, AZ, United States	2014-01-13
Albert Bourguet	Rahway, NJ, United States	2014-01-13
Gwendolen Cates	New York, NY, United States	2014-01-13
debbie moore	johnson city, TX, United States	2014-01-13
Bradford Johnson	Greensboro, NC, United States	2014-01-13

Name	Location	Date
Cindy Piper	Oak Island, NC, United States	2014-01-13
Leslie Tannahill	Ewing, NJ, United States	2014-01-14
Bryna Bear	Middletown, NJ, United States	2014-01-14
Sylvan Thorncraft	Scarborough, ME, United States	2014-01-14
Robert Jennings	Mahwah, NJ, United States	2014-01-14
Heather Anderson	Pottsville, PA, United States	2014-01-14
marnie bergen	Waldwick, NJ, United States	2014-01-14
patrizia mann	mahwah, NJ, United States	2014-01-14
Michael Sisco	Garfield, NJ, United States	2014-01-14
Carolyn Suffern	Knoxville, TN, United States	2014-01-14
Ali Van Zee	Oakland, CA, United States	2014-01-14
Cheryl Ann Rooney	Danbury, CT, United States	2014-01-14
Ashleigh Jennings	HILLBURN, NY, United States	2014-01-14
Joyce Jeffries	Bedford, IN, United States	2014-01-14
Kyle Van Dunk	Ringwood, NJ, United States	2014-01-14
Donna Coane	Hyde Park, NY, United States	2014-01-14
Jeffrey Genser	Suffern, NY, United States	2014-01-14
Lisa Tyner	Hillburn, NY, United States	2014-01-14
Lisa Crispino	West Haverstraw, NY, United States	2014-01-14
kathie grey	paterson, NJ, United States	2014-01-14
Murad Muhammad	Miami, FL, United States	2014-01-14
Stephanie Wells	New Paltz, NY, United States	2014-01-14
Dr. Donna Moss	Kingston, NY, United States	2014-01-14
Kenneth Collins	Newton, NJ, United States	2014-01-14
Jazmine Peterson	Mahwah, NJ, United States	2014-01-14
Sam Thunderheart	Monroe, NY, United States	2014-01-14
Gail Colard	Ayer, MA, United States	2014-01-14
Betsy Campisi	Albany, NY, United States	2014-01-14
Traci Morgan	Ringwood, NJ, United States	2014-01-14
EUGENE C. HASBROUCK SR.	MIDDLETOWN, NY, United States	2014-01-14
Linda Mann Lauricella	Wewoka, OK, United States	2014-01-14
Jessica Endsley	Wewoka, OK, United States	2014-01-14

Name	Location	Date
Bruce Pond	Calumet, OK, United States	2014-01-14
Eric Mann	Washingtonville, NY, United States	2014-01-14
Silvia Daole	Wallkill, NY, United States	2014-01-14
tessie pinchi	Paterson, NJ, United States	2014-01-14
Kathleen Bell	Corning, NY, United States	2014-01-14
Lauren Greenawalt	Haddon Heights, NJ, United States	2014-01-15
Mariel Kruse	Ringwood, NJ, United States	2014-01-15
Meredith Kates	Hillsdale, NJ, United States	2014-01-15
Isabel Ruano	Highland Park, NJ, United States	2014-01-15
lauren petrie	new brunswick, NJ, United States	2014-01-15
Cheri Hand	Flemington, , Netherlands Antilles	2014-01-15
Heather Fountain	San Diego, CA, United States	2014-01-15
Elyse Luca	Kent, CT, United States	2014-01-15
Beth Hulevitch	Enfield, CT, United States	2014-01-15
shannon vandunk	Monroe, NY, United States	2014-01-15
Valerie Davis	Tucson, AZ, United States	2014-01-15
Tanya Van Dink	Butler, NJ, United States	2014-01-15
Elizabeth Cadet	Montclair, NJ, United States	2014-01-15
Kelly Dennison	Milford, MA, United States	2014-01-15
Roberta Hoose	Berwyn, PA, United States	2014-01-15
Edward Wolf-Walker Conley	Hamilton, NY, United States	2014-01-15
Elga Antonsen	Kingston, NY, United States	2014-01-15
Mary Fleckinger	Stone Ridge, NY, United States	2014-01-15
Elizabeth Dulay	New Paltz, NY, United States	2014-01-15
Susan Deer Cloud	Livingston Manor, NY, United States	2014-01-15
Linda Miles	Ulster Park, NY, United States	2014-01-15
Richard Simms	Saugerties, NY, United States	2014-01-15
Kate Ahmadi	Washingtonville, NY, United States	2014-01-15
Ann Singer	Northvale, NJ, United States	2014-01-15
Julia Conley	Bloomington, IN, United States	2014-01-15
Rebecca Shamson	Kerhonkson, NY, United States	2014-01-16
Ann Millonig	Kingston, NY, United States	2014-01-16

Name	Location	Date
Ernest R Docs	Metuchen, NJ, United States	2014-01-16
Shannon Semmling	Green Brook, NJ, United States	2014-01-16
Christiann Mann	Liberty, NY, United States	2014-01-16
David Bruner	Kingston, NY, United States	2014-01-16
Daniel Hines	Shohola, PA, United States	2014-01-16
Lisa Mann -Mcgill	wurtsboro, NY, United States	2014-01-16
john henriksen	saugerties, NY, United States	2014-01-17
Elizabeth DeGroat	Mahwah, NJ, United States	2014-01-17
Barbara Astarita	Pompton Lakes, NJ, United States	2014-01-17
Mary Purhamus	Connelly, NY, United States	2014-01-19
Michael Lozier	Highland Lakes, NJ, United States	2014-01-19
Julie Edgar	Bethlehem, PA, United States	2014-01-20
julie machen	Auckland, New Zealand	2014-01-21
Kim Schulz	Pensacola, FL, United States	2014-01-22
Roslyn Dotson	New York, NY, United States	2014-01-22
Ramsey Sprague	Fort Worth, TX, United States	2014-01-22
Ellen Powell	S. Burlington, VT, United States	2014-01-22
Amber Hunsicker	Augusta, NJ, United States	2014-01-22
Michael Squally	Edgewood, WA, United States	2014-01-22
Tracy Jefferies	Kawerau, Bay, New Zealand	2014-01-22
Myron Hammontree	Seymour, TN, United States	2014-01-22
Dr. Karen Dwyer	Naples, FL, United States	2014-01-22
Elaine Baer	Mansfield, OH, United States	2014-01-22
Annette Gurdo	Waterville, NY, United States	2014-01-22
Russell Hallock	Washingtonville, NY, United States	2014-01-23
Ed Jocz	Freehold, NJ, United States	2014-01-24
Anna Shaylor	Candor, NY, United States	2014-01-25
Craig Phipps	Plainfield, NJ, United States	2014-01-25
lyle vandunk	Wanaque, NJ, United States	2014-01-25
Sonya Miller	Paterson, NJ, United States	2014-01-25
Benito Nieves	Ringwood, NJ, United States	2014-01-25
Emylie Dalrymple	Mechanic Falls, ME, United States	2014-01-25

Name	Location	Date
Charleen jackson	Passaic, NJ, United States	2014-01-25
jeannie summerlin	St. Cloud, FL, United States	2014-01-25
Claudio Vacca	Wanaque, NJ, United States	2014-01-25
Bjorn Holmgren	Wantage, NJ, United States	2014-01-25
Donna Fitzpatrick	Toledo, OH, United States	2014-01-25
Scarlett Pimentel	Simi Valley, CA, United States	2014-01-25
Steven LoneWolf Winston	Sellersville, PA, United States	2014-01-25
ALEX CORONEL	passaic, NJ, United States	2014-01-25
Liana Gabel	Accord, NY, United States	2014-01-25
Bridget Hardwick	Hillsboro, OR, United States	2014-01-25
Danny Scott	Maryville, TN, United States	2014-01-25
Kellyann Cook	Hamburg, NJ, United States	2014-01-25
Monica Harris	Ringwood, NJ, United States	2014-01-25
suade jafar zidan	West Milford, NJ, United States	2014-01-25
Chief Carlos Ma'Iuaonbo-Big Whitewolf	Lancaster, PA, United States	2014-01-25
Andrea Pacione	Middletown, NY, United States	2014-01-25
Dee Shear	Saint Charles, MO, United States	2014-01-25
marcey langh	Ringwood, NJ, United States	2014-01-25
Joey Ortega	West Haven, CT, United States	2014-01-25
Amy Moore	Glen Spey, NY, United States	2014-01-25
robert isaac	saltsburg, PA, United States	2014-01-25
diane kornahrens	islip, NY, United States	2014-01-25
Christopher Moore	Glen Spey, NY, United States	2014-01-25
Tyron Hatcher	Haskell, NJ, United States	2014-01-25
Stephanie Vargas	Parsippany-Troy Hills, NJ, United States	2014-01-25
Charline Shifflett	Wingina, VA, United States	2014-01-25
Russell williams	Ringwood, NJ, United States	2014-01-25
Margaret Jackson	Passaic, NJ, United States	2014-01-25
Felicia DeGroat	Ringwood, NJ, United States	2014-01-25
Kate Wright	Ringwood, NJ, United States	2014-01-25
Jennifer Vandunk	Franklin, NJ, United States	2014-01-25

Name	Location	Date
stephanie cawein	layton, NJ, United States	2014-01-25
Lisa Morales	Lancaster, PA, United States	2014-01-25
Melody Ford	kingston, GA, United States	2014-01-25
Karen Rosado	Bristol, PA, United States	2014-01-25
Joe Gonzales	Santa Maria, CA, United States	2014-01-25
Keyshaun VanDunk	West Milford, NJ, United States	2014-01-25
Cher Clarke	London, Canada	2014-01-25
AniMaeChi .	Australia	2014-01-25
Pat Bowen	bastrop, TX, United States	2014-01-25
Roxanne Luberto	Ringwood, NJ, United States	2014-01-25
brian hazlewood	Hartland, CT, United States	2014-01-25
Bev Mcgowan	Tehachapi, CA, United States	2014-01-25
Karen McConnell	Elmira, NY, United States	2014-01-25
Lesley Allen	Clifton, NJ, United States	2014-01-25
Marie Honey'Jones	Conwy, United Kingdom	2014-01-25
Debbie Williamson	Mountain Home, AR, United States	2014-01-25
Joe Renneke	Savage, MN, United States	2014-01-25
Ljiljana Milic	Belgrade, , Serbia	2014-01-25
Cindy Mason	Indiana, PA, United States	2014-01-25
Yvonne Nebergall	Aurora, IN, United States	2014-01-25
Theresa Mann	Sebastian, FL, United States	2014-01-25
kimberley little white owl Lambert	Hampton, VA, United States	2014-01-25
Bernadine Ogden	Middletown, NY, United States	2014-01-25
loretta milligan/sorrentino	bloomingdale, NJ, United States	2014-01-25
Debbie Geno	Grover, MO, United States	2014-01-25
Carrie Burton	Santa Fe, NM, United States	2014-01-25
Carol bell	Niagara Falls, Canada	2014-01-25
Birgitta Siponen	Oulu, , Finland	2014-01-25
Nicole Weber	Pasadena, MD, United States	2014-01-25
Angel Covey-Couch	Grovetown, GA, United States	2014-01-25
Kellie Smith	Deering, NH, United States	2014-01-25
Christeen Anderson	Crestview, FL, United States	2014-01-25

Name	Location	Date
elizabeth vandunk	Passaic, NJ, United States	2014-01-25
Travis Nicols	New York, NY, United States	2014-01-25
Nokomis DeGroat	Ringwood, NJ, United States	2014-01-25
Thomas Pintagro	Jamestown, NY, United States	2014-01-25
Deanna VanDunk	Ringwood, NJ, United States	2014-01-25
Albert Miller	Maumee, OH, United States	2014-01-25
Jerry Clemons	Sharonville, OH, United States	2014-01-25
Mike Hurley	Maumee, OH, United States	2014-01-25
Mary Thomas	Richmond, CA, United States	2014-01-25
Jacki Reed	Mechanicville, NY, United States	2014-01-25
pam wright	pasadena, CA, United States	2014-01-25
Helena White	Hugo, CO, United States	2014-01-25
natasha salgado	toronto, Canada	2014-01-25
Nyack Clancy	Manhattan, NY, United States	2014-01-25
Patricia Norris	Hugo, CO, United States	2014-01-25
Angelika Roll	Germany	2014-01-25
Tom Littledeer Info	South Amboy, NJ, United States	2014-01-25
Jennifer Hall	Greeneville, TN, United States	2014-01-25
Joyce O'Blenis	Mahwah, NJ, United States	2014-01-25
Leo Riley-Billy	Santa Rosa, CA, United States	2014-01-25
Donald Hunt	Pembroke, NC, United States	2014-01-25
Brandi Mann	Ringwood, NJ, United States	2014-01-25
Deborah Sanchez	Merritt Island, FL, United States	2014-01-25
Sheila Dillon	Willmar, MN, United States	2014-01-26
Shiakoda Qkalokqua	East Haddam, CT, United States	2014-01-26
cora aelick	Sault Ste. Marie, Canada	2014-01-26
Marjorie Winston	Sellersville, PA, United States	2014-01-26
Brian Wright	Warwick, NY, United States	2014-01-26
Patt Tashjian	Camillus, NY, United States	2014-01-26
Karen Murphy	Newport News, VA, United States	2014-01-26
kim bauer	lancaster, CA, United States	2014-01-26
James Mulcare	Clarkston, WA, United States	2014-01-26

Name	Location	Date
Chief Three Spirits	Newington, CT, United States	2014-01-26
Jennifer Lightsey	Ringwood, NJ, United States	2014-01-26
Darlene Davis	Detroit, MI, United States	2014-01-26
Giana Peranio-Paz	Haifa, , Israel	2014-01-26
Joan McAllister	VANCOUVER, Canada	2014-01-26
Pansy Shirhall	Hewitt, NJ, United States	2014-01-26
Laura Saxon	morriston, FL, United States	2014-01-26
Angeles Madrazo	Mexico	2014-01-26
Joseph Obremski	Hampden, ME, United States	2014-01-26
THOMASINA THOMPSON	Mahwah, NJ, United States	2014-01-26
Michael Akstull	Vancouver, WA, United States	2014-01-26
Brandon Oliva	Bay St. Louis, MS, United States	2014-01-26
Victoria Pitchford	Toronto, Canada	2014-01-26
Brigitte Nouari	France	2014-01-26
Thomas Menard	Palm Bay, FL, United States	2014-01-26
Janet Hall	Hamburg, NJ, United States	2014-01-26
Kimberly Mann	Mahwah, NJ, United States	2014-01-26
D. Singer	Oakland, CA, United States	2014-01-26
E M	Morinville, Canada	2014-01-26
Andrea Vollaro	Bloomingdale, NJ, United States	2014-01-26
Constance Franklin	Los Angeles, CA, United States	2014-01-26
Syble Cranford	Opelika, AL, United States	2014-01-26
Nimue Pendragon	Australia	2014-01-26
Constance Dubois	Gray, LA, United States	2014-01-26
Chris Mann	Middletown, NY, United States	2014-01-26
Raman V	Longmont, CO, United States	2014-01-26
Dru Sweatman	Mobile, AL, United States	2014-01-26
Jim Norton	Austin, TX, United States	2014-01-26
Carl McDade	Las Animas, CO, United States	2014-01-26
Janna Makaeva	Mahwah, NJ, United States	2014-01-26
m rossi	santee, CA, United States	2014-01-26
jeffrey vandunk	Wharton, NJ, United States	2014-01-26

Name	Location	Date
Mariette Grobler	Roodepoort, , South Africa	2014-01-26
Zara Ivanova	Sofia, , Bulgaria	2014-01-26
Tom Caserto	Ringwood, NJ, United States	2014-01-26
Bridget Robertson	Richardson, TX, United States	2014-01-26
Blythe Clark-McKitrick	Portland, OR, United States	2014-01-26
nancy sands	brooklyn, NY, United States	2014-01-26
Inge Bjorkman	Mariannelund, Sweden, , Sweden	2014-01-26
Anneke Andries	R'veer, MI, Netherlands	2014-01-26
Carol Bischoff	Junction City, TX, Netherlands	2014-01-26
sylvie auger	trois-rivières, Canada	2014-01-26
Nicolette Ludolphi	Germany	2014-01-26
John de Avalon	Somerset, United Kingdom	2014-01-26
Danuta Watola	Kalety, , Poland	2014-01-26
Kerstin Strobl	Germany	2014-01-26
Joe stiles	mandan, ND, United States	2014-01-26
michela messineo	Italy	2014-01-26
sonia gatt	MALTA, , Malta	2014-01-26
daria gennaro	Napoli, SD, Italy	2014-01-26
juani munoz	Spain	2014-01-26
kore kathy	napoli, UT, United States	2014-01-26
angeliki kounelli	athens, , Greece	2014-01-26
susanna minacheili	thessaloniki, , Greece	2014-01-26
Mark Olish	St. Charles, MO, United States	2014-01-26
Duane Baker	Powell, OH, United States	2014-01-26
Maud Nilsson	grästorp, , Sweden	2014-01-26
Thomas Mann	Yonkers, NY, United States	2014-01-26
wendy smith	nelson, United Kingdom	2014-01-26
Jennifer Sandberg	Stockholm, , Sweden	2014-01-26
Daniel Partlow	Allen, TX, United States	2014-01-26
sieglinde frey	neusiedel amsteinfeld, , Austria	2014-01-26
KAREN GIRODAT	ARVA, Canada	2014-01-26
Debbie Low	Blairsville, GA, United States	2014-01-26

Name	Location	Date
Loren Guay	Holiday, FL, United States	2014-01-26
Franshisca Dearmas	Cooper City, FL, United States	2014-01-26
julie damon	marcoing, PW, United States	2014-01-26
Monica Marinelli	Lugano- Pregassona, Switzerland	2014-01-26
Bartlomiej Tomczak	Grabow, , Poland	2014-01-26
Desa Desancic	Trige, , Denmark	2014-01-26
cynthia conklin	middletown, NY, United States	2014-01-26
Jeanie Streit	Novo Hamburgo-RS, , Brazil	2014-01-26
Carolina Puntorno	Cresco, PA, United States	2014-01-26
dieter reger	Germany	2014-01-26
elisabeth forgeot	France	2014-01-26
sue sch.	Florida, FL, United States	2014-01-26
Jeaneen Andretta	Florham Park, NJ, United States	2014-01-26
Sonja Grom	Ljubljana, , Slovenia	2014-01-26
linda brockett	airdrie, UT, United States	2014-01-26
Cheryl Hughes	Australia	2014-01-26
S Srinivas	Birmingham, United Kingdom	2014-01-26
Laureen Farr	Towanda, PA, United States	2014-01-26
valentina sovran	Italy	2014-01-26
Dean Hutchins	Arlington, VA, United States	2014-01-26
Dianna Ruiz	Las Cruces, NM, United States	2014-01-26
Letitia Williams	Charlotte, NC, United States	2014-01-26
Stacey Calvert	Sunderland, United Kingdom	2014-01-26
sandra sheehy	Dublin., , Ireland	2014-01-26
Linda-Marie Pattyn	BRUGGE, , Belgium	2014-01-26
Maria Karlsson	Göteborg, , Sweden	2014-01-26
Qualagi Denai	KINGSTON, NH, United States	2014-01-26
Regla Winter flower Gibson	St albans, NY, United States	2014-01-26
manuela wolter	st-cruiz, , Costa Rica	2014-01-26
car lour	Spain	2014-01-26
Inna Trotsai	Vinnitsa, ID, Ukraine	2014-01-26
Antonio Delgado Fenoy	Spain	2014-01-26

Name	Location	Date
Diane Kent	PHOENIX, AZ, United States	2014-01-26
diane howie	paisley, United Kingdom	2014-01-26
Ivana Soldic	Platicevo, , Serbia	2014-01-26
Prima Baily	Chapel Hill, NC, United States	2014-01-26
Maureen Leuszler	Roxbury Township, NJ, United States	2014-01-26
Deanna Jancsek	North Brunswick, NJ, United States	2014-01-26
Elisabeth Bechmann	St. Pölten, , Austria	2014-01-26
Lyn Kemp	Stockport, United Kingdom	2014-01-26
Stephanie Le Turgeon	St Saviour, United Kingdom	2014-01-26
Sara Paoluzzi	Italy	2014-01-26
Maggie Beese	Oshkosh, WI, United States	2014-01-26
Allan Yorkowitz	Colonia, NJ, United States	2014-01-26
Charleen Gordey	Pierceland, Canada	2014-01-26
Monica T	Indonesia	2014-01-26
Kamia Taylor	Preston, MO, United States	2014-01-26
June Bostock	Nottingham, United Kingdom	2014-01-26
kathy G	swindon, United Kingdom	2014-01-26
Phyllis Jenkins	Carlinville, IL, United States	2014-01-26
Panagiotis Rigopoulos	Patra, , Greece	2014-01-26
Colette Prioleau	Charleston, SC, United States	2014-01-26
Rickard Andersson	malmö, , Sweden	2014-01-26
Mary Donnelly	Australia	2014-01-26
Ella Reeves	Vancouver, CA, United States	2014-01-26
Danielle Tran	Calgary, Canada	2014-01-26
Maria Pires	Portugal	2014-01-26
gerry collins	Murrieta, CA, United States	2014-01-26
judiann edwards-burrus	summersville, MO, United States	2014-01-26
Marie Creed	Australia	2014-01-26
Maria Sarris	Athens, , Greece	2014-01-26
Dorothy Batten	Springfield, OR, United States	2014-01-26
norma laborie	France	2014-01-26
Lisa Neste	High Pt., NC, United States	2014-01-26

Name	Location	Date
E. van Eijs	Heerlen, , Netherlands	2014-01-26
rana azzam	beirut, , Lebanon	2014-01-26
Tatiana Torres	Bogota, , Colombia	2014-01-26
A F	Bremerton, WA, United States	2014-01-26
Jutta Klar	Germany	2014-01-26
barb horban	New Carlisle, IN, United States	2014-01-26
Emanuel VanDunk	Ringwood, NJ, United States	2014-01-26
Ondine James	Australia	2014-01-26
Andrea Miheljic	Sarajevo, , Bosnia and Herzegovina	2014-01-27
Elderberry C	Wadebridge, United Kingdom	2014-01-27
Betty J. Van Wicklen	Watervliet, NY, United States	2014-01-27
ashley heffner	bradford, PA, United States	2014-01-27
Edward Fredericks	Oxford, CT, United States	2014-01-27
Susan Chalcroft	Australia	2014-01-27
Kirra Mann -Rodriguez	West Milford, NJ, United States	2014-01-27
Chris Johnston	san clemente, CA, United States	2014-01-27
Romano Gonnella Jr.	Paramus, NJ, United States	2014-01-27
Kimberly McClintock	Sloatsburg, NY, United States	2014-01-27
Michael Hughey	Vista, CA, United States	2014-01-27
William Jennings	Bloomingburg, NY, United States	2014-01-27
Ricky Elliott	Fort Collins, CO, United States	2014-01-27
Joanna Kozanecka	Poland, , Poland	2014-01-27
dogan ozkan	istanbul turkey, DC, United States	2014-01-27
todea emilia eva	Câmpeni, , Romania	2014-01-27
Talya Honor	Seoul, South Korea, , Korea, Republic of	2014-01-27
Jamie mason	Kingston, PA, United States	2014-01-27
Nick Fern	Pompton lakes, NJ, United States	2014-01-27
Lisa Salazar	Foster City, CA, United States	2014-01-27
Andrea Ferris	Rye, NY, United States	2014-01-27
Lucas Kolasa	providence, RI, United States	2014-01-27
joy kennedy	Hitchens, KY, United States	2014-01-27
Jill Lindner	Port Jervis, NY, United States	2014-01-27

Name	Location	Date
pamela lowe	colombo, , Sri Lanka	2014-01-27
Bob Schultz	Succasunna, NJ, United States	2014-01-27
Elisa Faulkner-Uriarte	Santa Maria, CA, United States	2014-01-27
vida fritz	vico-morcote, AP, United States	2014-01-27
Mehmet Genc	Istanbul, , Turkey	2014-01-27
Jean François Lepicard	France	2014-01-27
Sandra Zanin	Mexico	2014-01-27
DONNA ANNE	CONCORD, NC, United States	2014-01-27
Casey Nieves	Ringwood, NJ, United States	2014-01-27
Karine Gordineer	Garrison, NY, United States	2014-01-27
Barbara Stoma	Szczecin, , Poland	2014-01-27
Horst Lemmert	Germany	2014-01-27
Laila Sunde	Odda, NV, United States	2014-01-27
kwang murphy	langley, United Kingdom	2014-01-27
Marek Olszewski	Czeladź, , Poland	2014-01-27
Phillip Anderton	Poole, United Kingdom	2014-01-27
Alexandr Yantselovskiy	Vyshneve, , Ukraine	2014-01-27
Natali Nts	Σέρρες, , Greece	2014-01-27
Marion Friedl	Germany	2014-01-27
nurlaila abdul aziz	ampang, , Malaysia	2014-01-27
tom rooze.sen	peer, , Belgium	2014-01-27
Debra Falanga	Nutley, NJ, United States	2014-01-27
Maryann Jones Maass	Pompton Plains, NJ, United States	2014-01-27
Greg Glass	Sundridge, Canada	2014-01-27
christina kazantza	Athens, , Greece	2014-01-27
celine duburg anchen	montevideo, , Uruguay	2014-01-27
marian madsen	Spain	2014-01-27
Maggy Genc	Waalwijk, , Netherlands	2014-01-27
stephanie wernersbach	Germany	2014-01-27
Colin Heasman	Valley Cottage, NY, United States	2014-01-27
Grace Hazeldine	Ringwood, NJ, United States	2014-01-27
Lore Harmison	Meadville PA, PA, United States	2014-01-27

Name	Location	Date
M. Berti	Montreal, Canada	2014-01-27
Winona Diamantopoulos	Ringwood, NJ, United States	2014-01-27
hilda fernandez	Argentina	2014-01-27
Analia Sampayo	Argentina	2014-01-27
Analia Pivetta	Argentina	2014-01-27
Hernán Verdugo	Pasto, , Colombia	2014-01-28
Mark Bastian	Helston, United Kingdom	2014-01-28
MARIE MANHARDT	park ridge, IL, United States	2014-01-28
Judith Meek	Oak Lawn, IL, United States	2014-01-28
luis fernandez	San José, San, Costa Rica	2014-01-28
Lana Rayseen Horan	Sedona, AZ, United States	2014-01-28
Lisa Taglialavore	Ridgewood, NJ, United States	2014-01-28
Janet G. Newman	New City, NY, United States	2014-01-28
Lesley Dove	London, UK, United Kingdom	2014-01-28
Andrea Knöpfler	Germany	2014-01-28
Annette Seeseke	Germany	2014-01-28
Rie Miyake	, Japan	2014-01-28
Anto Felixgatto	MILANO, Italy	2014-01-28
Gaby Schimmel	Germany	2014-01-28
Buchenau Manfred	Germany	2014-01-28
Susan Hito-Shapiro	Spring Valley, NY, United States	2014-01-28
Dagmar Hauk	Germany	2014-01-28
Kathleen O'Meara	Minneapolis, MN, United States	2014-01-28
Luna Dance	devon, United Kingdom	2014-01-28
MOREAU AGNES	France	2014-01-28
Willem Kom	Hoogezand, , Netherlands	2014-01-28
Ted Williamson	Ringwood, NJ, United States	2014-01-28
sue wadland	east sussex, United Kingdom	2014-01-28
Yolanda Schultes	Wittenbach, , Switzerland	2014-01-28
Siggi Heeg	emmerich, DE, United States	2014-01-28
Brigitte Hoin	Germany	2014-01-28
Gaby Schlebrowski	Germany	2014-01-28

Name	Location	Date
małgorzata żaczkiewicz	bytom odrzański, , Poland	2014-01-28
Franz Gries	Germany	2014-01-28
tanja gross	Germany	2014-01-28
Ingrid Kirschner	Germany	2014-01-28
sabine habedank	Germany	2014-01-28
Tanja Weinel	Germany	2014-01-28
Michael Herr	Germany	2014-01-28
Thomas Berger	Germany	2014-01-28
Karin Lux	Germany	2014-01-28
Lola Misirlic	Belgrade, AA, United States	2014-01-28
Virpi Kangas	Oulu, Finland, , Finland	2014-01-28
CRISTINA PUIGGROS PUJOL	Spain	2014-01-28
jenny Bron	zaandam, NE, United States	2014-01-28
iris Cornet	Leiderdorp, Netherlands	2014-01-28
Margit Zäuner	Germany	2014-01-28
saskia van nispen	assen, NH, United States	2014-01-28
sof ioannou	london, United Kingdom	2014-01-28
CHANTAL WOLF ALF	PADOVA, IL, United States	2014-01-28
Hilde Stein	Marquartstein, Germany	2014-01-28
Moo Prince	Metairie, LA, United States	2014-01-28
krancsis ciresica	Sibiu, , Romania	2014-01-28
marij camps	venray, , Netherlands	2014-01-28
Ellen Bastian	Germany	2014-01-28
Rick Marchesi	MAHWAH, NJ, United States	2014-01-28
nancy braes	belgie,	2014-01-28
Nicole Hof	Germany	2014-01-28
yvonne van diggele	Rotterdam, Netherlands	2014-01-28
sofia dalaizia	athens, , Greece	2014-01-28
TA-TANIK YORK	PATERSON, NJ, United States	2014-01-28
Eva Langner	Germany	2014-01-28
Regina Davidshofer	Waldshut-Tiengen, Germany	2014-01-28
Maria Reisner	Germany	2014-01-28

Name	Location	Date
Birgit Walter	Germany	2014-01-28
Marc Hansen	Germany	2014-01-28
angela monteleone	Italy	2014-01-28
nelly mettrop	spijkenisse, , Netherlands	2014-01-28
Claire Furber	Wayne, NJ, United States	2014-01-28
Marina Ruch	Germany	2014-01-28
Kim & David Boisvert	Lugoff, SC, United States	2014-01-28
Dakota Bejo	Ormond Beach, FL, United States	2014-01-28
Ben Bucklyey	Belleville, IL, United States	2014-01-28
Cynthia Franke	Germany	2014-01-28
Rosie Prantner	Germany	2014-01-29
MARI ANGELES EDUARDO LARA	Spain	2014-01-29
Cynthia Scalici	New Baltimore, MI, United States	2014-01-29
Diane Vanderdonckt	Zwalm, , Belgium	2014-01-29
linda van vliet	wondegem, , Belgium	2014-01-29
Conny Baert	Dendermonde, , Belgium	2014-01-29
tanya willis	Lewes, DE, United States	2014-01-29
vzw Dierengeluk dierenbescherming	Menen, MN, United States	2014-01-29
Henny Ekkelboom	Almere, , Netherlands	2014-01-29
rita quintelier	sint-niklaas,	2014-01-29
marleen geudens	westerlo, , Belgium	2014-01-29
marleen neus	zele, , Belgium	2014-01-29
Arild Warud	Ericeira, CA, United States	2014-01-29
Trees Rosenbrand	Oosterhout, ND, United States	2014-01-29
Lucie saroukhan	kriens, , Switzerland	2014-01-29
Angelika Zintel	Germany	2014-01-29
carine verfaillie	roeselare, CA, United States	2014-01-29
Claudia Drenk	Germany	2014-01-29
sonali Ghosh	Hawick, United Kingdom	2014-01-29
Sabine Woggon	Germany	2014-01-29
Frank Jabusch	Germany	2014-01-29

Name	Location	Date
Trautel Schönheit	Germany	2014-01-29
Markus Müller	Germany	2014-01-29
kerstin karst	Germany	2014-01-29
Janet Fish	Montrose, PA, United States	2014-01-30
Linda Hoski	Somerset, NJ, United States	2014-01-30
Barbara Ferrucci Young	Galloway, NJ, United States	2014-01-30
Regina Ledgerwood	Ringwood, NJ, United States	2014-01-31
Peter Kralovic	Bratislava, , Slovakia	2014-01-31
Kathy Pietanza	Pearl River, NY, United States	2014-02-01
Michelle Solomon	Valley Cottage, NY, United States	2014-02-01
Viktor Pochtar	Николаев, , Ukraine	2014-02-01
Ronny Matthijs	Bornem, , Belgium	2014-02-01
andy Gordon	Airmont, NY, United States	2014-02-02
diane wexler	highland lakes, NJ, United States	2014-02-02
Nicole Spies	Antwerpen, , Belgium	2014-02-02
lidwien oei	culemborg, , Netherlands	2014-02-02
Andrea Prieto	boca raton, FL, United States	2014-02-02
Baker norma	France	2014-02-02
MARIA PETEINARAKI	heraklion city creta, , Greece	2014-02-02
Elizabeth O'Halloran	Kettering, United Kingdom	2014-02-02
Micki LeCronier	Fort Myers, FL, United States	2014-02-02
eunjung lee	Donghae-Si, Korea, Republic of	2014-02-03
nella pienaar	Gauteng, , South Africa	2014-02-03
Claudine Bos	France	2014-02-03
ΙΣΜΗΝΗ ΛΙΟΥΦΗ	Αθήνα, , Greece	2014-02-03
Marin Manuela	France	2014-02-03
Jennie de Roos	Colombo, , Sri Lanka	2014-02-03
Nathalie AUVRAY	France	2014-02-03
Susan Solomon	Toronto, Canada	2014-02-03
mavis harris	accord, NY, United States	2014-02-04
Sarah Henderson	Cumberland, MD, United States	2014-02-04
Lisa Basson	Cape Town, , South Africa	2014-02-04

Name	Location	Date
Julie DeFilippo	Edison, NJ, United States	2014-02-04
Donathan Yazzie	Fort Defiance, AZ, United States	2014-02-05
Janet Shaw Woudenberg	Montague, NJ, United States	2014-02-05
Clara Hasbrouck	Middletown, NY, United States	2014-02-05
Roberto Mtn Bear Delgado	New Windsor, NY, United States	2014-02-05
Wilma Knight	Newton, NJ, United States	2014-02-05
Rosemary Ross	Haskell, NJ, United States	2014-02-05
Debra Chipps Cunningham	Ringwood, NJ, United States	2014-02-05
Smara Voglesong	Medford, NJ, United States	2014-02-05
Anita Riley	Lake Hopatcong, NJ, United States	2014-02-05
KEN SOLCH	RINGWOOD, NJ, United States	2014-02-05
Teresa Mancino	Elmwood Park, NJ, United States	2014-02-05
rafael delgado	Fishkill, NY, United States	2014-02-05
Steven Holden	Woodstock, GA, United States	2014-02-05
Janet Savin	Ringwood, NJ, United States	2014-02-05
serena chifari	Dunnellon, FL, United States	2014-02-05
steven o	New York, NY, United States	2014-02-05

Mr. Joseph Gowers
U.S Environmental Protection Agency
Remedial Project Manager
Ringwood Mines Superfund Site
290 Broadway, 19th Floor
New York, New York 10007

June 11, 2013

Dear National Remedy Review Board,

On behalf of the tribal leadership organizations and environmental nonprofits, Ramapough/Lenape Nation, Edison Wetlands Association (EWA), New Jersey Sierra Club, Greenfaith, the Environmental Research Foundation, and New Jersey Public Employees for Environmental Responsibility (NJ PEER), we fully support Alternative 7 in the Draft Feasibility Study, for removal and off-site disposal of all fill material for Peter's Mine Pit, Cannon Mine and the O'Connor Disposal Area. We are writing on behalf of our thousands of members in New Jersey and New York as well as the majority of the Ringwood Mines/Landfill Superfund Site Community Advisory Group (CAG) members.

We are also writing for the many families and residents of the Upper Ringwood area that are too ill to write or have passed away since the last year's National Remedy Review Board (NRRB) scheduled hearing. We are submitting these supplementary comments to the NRRB, in addition to the comments submitted by EWA and the Ringwood Superfund CAG in May 2012. These comments also provide clarification to the NRRB on comments submitted by Ford Motor Company and/or Ringwood Borough under the heading of a "White Paper".

The Ringwood Mines/Landfill Superfund Site's Community Advisory Group's (CAG) Technical Advisor has provided detailed technical comments in support of the comments the EWA is providing for the NRRB and these are noted as "Technical Advisor Comment" *[For the record, the CAG Technical Advisor is Richard. W. Chapin. M.S., P.E., who is a Board Certified Environmental Engineer in Hazardous Waste Management. A copy of his CV is attached.]*

History of the Ringwood Mines:

The Ringwood Mines Superfund Site is the most unique toxic waste disposal site in the United States where the Ramapough Lenape Native American live, hunt and gather food. This site has played a key and important role in major American historic events and structures. This area was the part of the historic iron mines of Ringwood, and for over 300 years provided the iron that built the foundation of America and its industries as well as fought its wars. Also, the iron that was extracted from these mines was used to build many important sites such as the Capital dome in Washington D.C., as well as bridges and skyscrapers in New York City.

Tribal Involvement in National Remedy Review Board

According to the "*USEPA Environmental Justice U.S. Environmental Protection Agency Region 2 Environmental Justice Assessment for the Ringwood Mines/Landfill Area":*

"The Ringwood EJ Assessment concluded that based on evidence and supporting data the Ringwood Mines community is an adversely impacted area."

The USEPA report also details the Historical and Cultural Aspects of the community that lives on and Around the Ringwood Mines Superfund Site in the section titled "*Historical /Cultural Aspects of the Ramapough Mountain People":*

"The Lenni-Lenape Indian Tribe was divided into three groups, the southern-most being Unalichtigo. Their homeland was what is called Delaware and Maryland today. In the middle, which is the southern half of New Jersey, was the Unami. In the northern branch consisting of southeastern New York, northern New Jersey, and northeastern Pennsylvania, were the Minsi or Minisink, which meant, people of the "Stony Land." After the arrival of the Europeans, they 10 were called the Munsee. There were many bands and villages of the Munsee living throughout the area, and they were known by different names, according to their location. There were the Hackensackee, the Tappan, the Esopus, the Canarsie, the Wappingers, and the Ramapoughs, plus many, many more. Numerous names are still used throughout the Northeast, even though there are so few Natives left.

Between 1630 and 1710, deeds were obtained from the Natives, which took all of their land between Sandy Hook and Bear Mountain. Except for a small number, the Munsee either migrated west or north in flight away from the ever growing number of whites. Some fled west to Ohio, Kansas, Wisconsin, and Oklahoma. Others went north and lived among the Tribes of the Six Nations, and to Massachusetts, and further into Canada. Still others moved into the Ramapo Mountains, in isolation, to try to hold on to a small portion of the land they had called home for centuries.

There were no roads or trails into the mountains, except the ones made by animals, so the white settlers paid little attention to the Indians living there. The settlers had no use for the land, because it was too rocky for farming. The mountain people made due with what they had and cultivated their own gardens, and hunted and fished for food. They would venture out of the mountains to trade or sell their wares. Their descendants are now known as the Ramapough Mountain People, of the original Lenni-Lenape. It has been recorded by genealogist, Roger Joslyn, that the present-day Mann family of Ringwood is descended from a member of the Ramapoughs named Mannes who lived at the foot of the Ramapo Mountains beside the river.

The Ramapough Mountain People, also Ramapo Mountain Indians, are a group of approximately 3000 people living around the Ramapo Mountains of northern New Jersey and southern New York. The center of their community is a small mountain called Stag Hill. Ethnically, they are the descendants of the Lenape, with a mixture of African from the freed slaves of the Hudson River Valley, Tuscarora, Dutch, English and Algonquian. "

Additionally, the USEPA guidance for the National Remedy Review Board for "State/Tribal Involvement," clearly states:

The Board recognizes that the States and Tribes have a unique role in the Superfund program as "co-regulators," and has taken steps to ensure their significant involvement in the review process. With this in mind:

- *The Region is to consult with the affected State or Tribal government well before the Board meetings to ensure that key decision makers understand the background and intent of the review process. The Region should also make clear that the States and Tribes would have the opportunity to present their views directly to the Board.*

- *As part of current procedure, the Region develops an informational site package that forms the basis of Board review. The Board asks that each Region work with appropriate State and Tribal personnel to ensure that the "summary of State issues" section of that package is accurately developed.*
- *The Regional RPM is to distribute the full site package to the appropriate State and/or Tribe concurrent with Board distribution. He or she should also solicit their general reaction to the material at this time.*
- *For each site, the Board meets in two stages: information-gathering and deliberations. The Board will routinely invite State and/or Tribal decision makers to the information-gathering phase of its site reviews. The Board will invite the State and/or Tribe to participate in the deliberative discussion for State-lead fund-financed decisions, and for State/Tribe enforcement-lead decisions where the State/Tribe seeks EPA concurrence. Otherwise, the Board will limit its deliberative discussion to Agency personnel.*

We request that the NRRB reconvene in Ringwood, New Jersey and conduct the review in a location of the Ramapough Lenape Leadership's choosing. This will allow the Ramapough Lenape Native American Tribal Leadership and community to be able to present information directly to the NRRB. The NRRB guidance documents state that the USEPA must involve the Ramapough/Lenape Indian Nation as "co-regulators" as defined in the USEPA guidance document on the upcoming NRRB deliberations for the Ringwood Mines Superfund Site in Ringwood New Jersey. (See: http://www.epa.gov/superfund/programs/nrrb/9-26-96.htm)

The NRRB must invite the Tribal Decision Makers to the information-gathering phase of its site reviews as well as the deliberative discussion. This has not been done at the Ringwood Mines Superfund Site and cannot be ignored by the NRRB.

Guidance Documents for Superfund Sites:

In addition to affording the Ramapough Lenape Indian Nation leadership and community the ability to present to the NRRB, there is another critical issue the USEPA must address.

USEPA Headquarters and the NRRB must develop specific guidance documents for future sites that address Superfund Sites where the original remedy was not protective of human health and the environment and the sites were delisted. USEPA must have a transparent process where communities like Ringwood can petition the USEPA to re-list a delisted Superfund Site when there is unacceptable human and environmental exposure occurring.

The Lee's Lane Landfill Superfund Site in Louisville, Kentucky is one such site where a toxic chemical slop pit was left to leak poisons into the air, water and homes of American families. USEPA must develop regulations to address the re-listing of Superfund sites that were not remediated to levels protective of human health or the environment. There are likely many more sites that USEPA delisted, like these two sites where the USEPA is allowing people to die like the children of Ringwood and Lee's Lane because they failed to live up to their promise to American families. It is critical to our national security that the USEPA develop and implements a petition process for re-listing sites like these.

USEPA Environmental Justice Initiative:

This site is a unique in all of the history of the USEPA and the Superfund program because it is the only site ever to be put on the Superfund National Priorities List (NPL), reviewed by the NRRB, delisted and

then put back on the Superfund NPL due to the gross errors and mismanagement within the USEPA, New Jersey Department of Environmental Protection and misinformation by the responsible parties and their contractors.

The 2014 USEPA Environmental Justice Initiative, which is incorporated into every aspect of USEPA decision-making and action on environmental justice goals, has specific goals outlined. Those goals include the active involvement of all federal agencies in implementing Executive Order 12898 by minimizing and mitigating disproportionate negative impacts while fostering environmental, public health, and economic benefits for overburdened communities.

> *USEPA seeks to facilitate the active involvement of all federal agencies in ensuring healthy, sustainable and green communities, as well as equitable development, for all people. To better achieve this goal; EPA is leading the Administration's effort to fully implement Executive Order 12898.*
>
> *Executive Order 12898 calls for the establishment of an Interagency Working Group on Environmental Justice (EJ IWG). The EPA Administrator chairs the IWG. EPA worked with the White House Council on Environmental Quality (CEQ) to reconvene the EJ IWG in September 2010.*
>
> *EPA is working with other federal agencies to advance environmental justice through coordinated efforts. A coordinated and holistic approach is essential to addressing the full scope of adverse human health and environmental effects in overburdened communities, legacy pollution problems, and cumulative impacts. A coordinated approach can ensure that all communities participate and benefit in the transition to a clean energy economy.*
>
> *Coordinated efforts include:*
>
> - *Partnership for Sustainable Communities - This is an unprecedented agreement by EPA, the U.S. Department of Housing and Urban Development, and the U.S. Department of Transportation. The agreement coordinates federal housing, transportation, and environmental investments; protects public health and the environment; promotes equitable development; and helps address the challenges of climate change.*
> - *National Environmental Policy Act (NEPA) - All federal agencies must consider environmental justice issues in their environmental impact assessments*
> - *Title VI of the Civil Rights Act - This act prohibits recipients of federal financial assistance from discriminating on the basis of race, color, or national origin in their programs or activities*.

Additionally, the USEPA's Environmental Justice Assessment for Ringwood clearly states:

> *"The Ringwood EJ Assessment concluded that based on evidence and supporting data the Ringwood Mines community is an adversely impacted area."*

USEPA's implementation plan covers the entire administration including the NRRB. The NRRB should rule in favor of the full remediation of Peter's Mine Pit, the O'Connor Disposal Area and Cannon Mine on the basis of the environmental injustice. This has been systematic by the USEPA, federal and state agencies as well as Ford Motor Company and other parties, against the Ramapough Lenape Native

American tribe. **According to the USEPA's own Environmental Justice Working Group, everyone in America deserves to live, learn, and work in a healthy and sustainable community.**

USEPA must rule on behalf of full removal of all wastes from Cannon Mine, Peter's Mine Pit and the O'Connor Disposal Area. If the USEPA and the NRRB do not remove all wastes from these areas, they will continue to be in violation of the President's Order on Environmental Justice. Equally, the State of New Jersey is also in violation of the Governor's Executive Order #96. USEPA responsibilities are under the Presidential Memorandum and issued concurrently with Executive Order 12898.

Here is a link from the EPA's office of environmental justice and some of the responsibilities of that office: **http://www.epa.gov/environmentaljustice** Here are a few excerpts from the site:

> *The presidential memorandum underscores several provisions of environmental, civil rights, and other statutes that provide opportunities to prevent minority communities and low-income communities from being subject to disproportionately high and adverse environmental effects.*
>
> *National Environmental Justice Advisory Council (NEJAC) to advise, consult with, and make recommendations to the Administrator of EPA on matters relating to environmental justice. The NEJAC holds meetings, analyzes issues, conducts reviews, performs studies, produces reports, makes recommendations and conducts other activities as appropriate given its mission and the objectives of EPA's environmental justice program. NEJAC is composed of a parent Council and four subcommittees (Public Participation and Accountability, Enforcement, Waste and Facility Siting, and Health and Research). NEJAC's members include representatives of academia, industry, community groups, non-governmental organizations, state, tribal and local governments, and environmental organizations.*
>
> *The Chairperson of the NEJAC is Mr. Richard Moore, Southwest Network for Environmental and Economic Justice, 211 10th St. S.W., Albuquerque, NM 87102 (Ph.: 505 242-0416; Fax: 505 242-5609). The Designated Federal Officer is Dr. Clarice Gaylord, Director of EPA's OEJ, EPA OEJ, 401 M. St. S.W., Washington D.C. 20460 (Ph.: 202 260-6357; Fax: 202 260-0852*
>
> *(Source: **http://www.epa.gov/environmentaljustice/interagency/index.html**)*

According to Turtle Clan Chief Vincent Mann of the Ramapough Lenape Nation Tribe, "There is an emergency in Upper Ringwood with Ramapough Lenape families; children and the elders are dying at an alarming rate. This is an emergency and it needs to be addressed as such." We concur with this assessment.

Evaluation of Ford's NRRB Submittal:

In Ford Motor Company's White Paper, submitted to USEPA's NRRB in 2012. Ford continues to parrot the words that that site is a "landfill" and as such presumptive remedy should be capping. USEPA's Region II Superfund Chief Walter Mugdan states on the record numerous times at USEPA community meetings that this site is not a landfill and there is no presumptive remedy for this site to be capped.

No matter how many times Ford Motor Company repeats this misinformation, the NRRB should consider the comments of USEPA supervisors and project team which emphatically state that this site is not considered to be a landfill and there is no presumptive remedy of a cap.

Technical Advisor Comment: the CERCLA Presumptive Remedy applies to municipal landfills. Ford's dumping in Ringwood occurred under a private contract, where Ringwood Realty, the Ford subsidiary, permitted O'Connor Trucking to dump wastes generated by Ford at Mahwah, on private property. Ford Mahwah had a contract with O'Connor Trucking to provide those services. The O'Connor contract designates specific locations to dump the wastes, including the location that is currently called the "O'Connor landfill. Despite Ford's continuous claims of "other parties dumping" in Ringwood I have not, in the 8+ years I have been providing technical input on this site, seen any documentation as to who those other parties were or what they dumped. The disposal areas on the Ringwood Superfund site are not municipal landfills by any definition of that term. This was private dumping on by Ford on land that Ford owned. If the NRRB would like a copy of the O'Connor contract, please contact me.

Ford's NRRB submission claims that this paint material is not sludge, it is inert and does not leach nothing can be further from the truth. Ford, USEPA and EWA sampled the paint sludge which was disposed of in the 500+ acre Superfund site. In fact, there are at least three distinct types of paint sludge.

In 2004, Mr. Chapin prepared an estimate, based on Ford's records, that 52,000 cubic yards of sludge were disposed and specifically stated the basis for this estimate was a limited data set. For the last 9 years, neither Ford Motor Company nor USEPA has provided an estimate of how much toxic waste paint sludge and drums filled with toxic waste were disposed of in Peter's Mine Pit, Cannon Mine or the O'Connor Disposal Area. The disposal records for this cleanup do not segregate sludge from soil; it is merely reported as combined. The combined absence of a baseline mass of sludges and poor accounting of the mass removed from the site, make it impossible to determine what has been accomplished. Many of the samples taken did not pass the leachability tests and had to be disposed of as hazardous waste. Some of the sludge was so hazardous that it could not even be disposed of in the United States because it could not pass the leachability tests for volatile organics and other content.

Technical Advisor's Comment: Ford utilized a very specific process for assembly of it's vehicles at Mahwah. This resulted in generation of three distinct types of sludge, each with unique characteristics. [The source of this data is Ford's filings with the NJDEP pursuant to New Jersey's ECRA [Environmental Cleanup Responsibility Act] law.

1. Ford treated Mahwah's industrial wastewater with lime and ferric chloride for the express purpose of flocculating and precipitating metals. This sludge is dull grey and generally hard.
2. Ford utilized a waterwall to remove particulates from the air discharging from its paint spray booths. These accumulated sludges from the air pollution control unit are grey with highly colored, distinct layers and rubbery. Some, after 30 + years at Ringwood still had a distinct solvent odor.
3. Vehicle parts were painted on racks that would accumulate layers of paint. These racks were cleaned by immersion into a "Kolene®" bath. Kolene was essentially a molten salt that chemically oxidized all organics in the paint. This oxidation was aggressive and exothermic. Sludge, including the inorganic constituents of the paint, such as the metals, accumulated in these baths. The sludge from these baths is hard and brittle; with sharp angular surfaces it has the appearance of lava.

Relative to the leachability of the sludge, there has been many tons of sludge disposed of as hazardous wastes due to leachability of lead and many tons of sludge that failed the land ban due to elevated solvent content. The NRRB must get, from EPA Region 2, a summary of all disposal documents as they will show the nature of these sludges.

Borough of Ringwood Involvement:

The Borough of Ringwood is a Responsible Party for the Ringwood site, as a property owner. As such, they have a significant vested interest in the cost of the remedy selected. Consequently, the Borough of Ringwood cannot represent the interests of the residents who currently live atop this site; it is a fundamental conflict of interest for a responsible party to speak for the people being harmed by that responsible party's actions. Their comments should be taken in the same context as Ford Motor Company or any other responsible party.

Impact to Groundwater

Ford's claim that this toxics waste does not pose any significant threat and is not impacted groundwater is not based on factual data, as the USGS is still concerned greatly about the potential for toxic benzene in Peter's Mine Pit to migrate to the brook. The USGS has asked for additional sampling and characterization of the groundwater to better understand the transport mechanism. There is material located in Peter's Mine Pit that is leaching benzene into the groundwater. USEPA cannot explain what is in the Peter's Mine Pit and why it is leaching.

No Capping in New Jersey Parkland

There is the significant issue of Peter's Mine Pit located on Ringwood State Park in a portion known as the Historic Iron Mines of Ringwood. Ford Motor Company and the USEPA have not received permission from the state of New Jersey for the long-term containment of these hazardous wastes. Containment and capping of the hazardous waste in the Ringwood State Parkland would constitute a taking of state parkland.

This taking of parkland requires a diversion that would have to go before the New Jersey Statehouse Commission. The taking of any State Park land from the use of the peoples of New Jersey requires a public process in which the statehouse commission must grant permission and additionally a complex taking process is done where the public is given the opportunity to comment. (See link: http://www.nj.gov/dep/greenacres/pdf/public_hearing_sign_guidance5-7-08.pdf)

Uncovering Additional Sludge Areas:

As recently as two weeks ago, the USEPA and Ford Motor Company were notified at a public CAG meeting by one of the tribal leaders of a large paint sludge deposit outside of the known 500-acre Superfund site area. This area where this "new" paint sludge was found t is part of the Wanaque watershed property, adjacent to a brook directly feeding the Wanaque Reservoir, an area that supplies drinking water for 2 million residents of North Jersey.

The NRRB must select total removal for this site to help protect the current drinking water supplies, and future drinking water as these three disposal areas are subject to seismic activity having had

several earthquakes in that recent past. Additionally, the fractured bedrock and nature of the mines make their long-term use for containment of toxic waste uncertain at best.

The USEPA NRRB and President Barack Obama must stand up for the people of New Jersey and the Ramapough Lenape Tribe and show leadership in the United States and live up to your oath to protect the American people. The USEPA NRRB must rule to fully clean these three disposal areas or you guarantee the genocide of the Ramapough Lenape Indian Tribe who has lived on these mountains for over 300 years.

The NRRB must comply with USEPA Environmental Justice initiatives of the USEPA. The NRRB cannot rule in favor of containment of this waste in place at the Peter's Mine Pit, Cannon Mine or O'Connor Disposal Area. The USEPA NRRB must comply with the national directives that respect environmental justice as well as the indigenous Ramapough Lenape Native American rights for this property. **Additionally, NRRB must recognize the 75,000+ people that have signed the Change.org petitions against the use of the state park for long-term containment of Ford's hazardous waste.**

Thank you for taking our comments into consideration. Robert Spiegel, Executive Director of EWA will serve as the point of contact for this group and can be reached directly at 732-321-1300 or via email at rspiegel@edisonwetlands.org if you have any questions or need clarification on any issues raised in this NRRB comments submittal.

Respectfully,

Robert Spiegel Ringwood CAG Facilitator Executive Director Edison Wetlands Association	Chief Vincent Mann Turtle Clan Chief Sub Chief, Ramapo Lenape Nation	Jeff Tittel Director NJ Sierra Club
The Rev. Fletcher Harper Executive Director GreenFaith	Peter Montague, Ph.D. Director Environmental Research Foundation	Bill Wolfe Director NJ PEER

Mr. Joseph Gowers
United States Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington D.C, District of Columbia 20460

RE: Ringwood Mines/Landfill Superfund Site
USEPA Proposed Plan
Ringwood, New Jersey

December 20, 2013

Dear Mr. Gowers,

On behalf of the Ramapough Lenape Nation and the following environmental nonprofit organizations and their members which include Edison Wetlands Association, GreenFaith, New Jersey Sierra Club, Environmental Research Foundation, and NJ Public Employees for Environmental Responsibility, we are writing to request a formal 60-day extension on the Ringwood Landfill/Mines Superfund site United States Environmental Protection Agency (USEPA) Proposed Plan. We are also formally requesting that USEPA conduct a new Environmental Justice Assessment that is properly implemented with appropriate community involvement addressing all of the community injustices and discriminations.

Extension for comment period:
We understand a 30-day comment period extension was granted at the Proposed Plan hearing that is due to close on January 6, 2014. We do not believe that is acceptable to grant an extension through the holiday season, a time when most people are not available. We believe that USEPA must extend the comment period an additional 30 days to give the public a real chance to review the proposed plan and submit meaningful comments.

New Environmental Justice Assessment
Additionally, after seven years, USEPA's Environmental Justice Assessment was finally released as a final document in 2013. Due to the complexity of this site, serious exposure of toxic chemicals to the Ramapough Nation Indians from Ford's sludge dumping, and lack of community involvement, we are requesting that USEPA's Office of Environmental Justice formally conduct a real, updated assessment of the environmental justice impacts in Ringwood.

Despite what USEPA claims, there was minimal to zero community input into the original draft Environmental Justice Assessment. Because of this we believe the due process was violated. The initial draft which was released in May 2006 and never put before the community nor was the draft discussed at the eight years of monthly Community Advisory Group meetings in which USEPA, New Jersey Department of Environmental Protection, the State and Federal health agencies and the community discuss site updates and concerns. USEPA stated in the 2006 draft document that they would conduct door-to-door surveys, hold public meetings, as well as present the draft to the USEPA Community Advisory Group. This was not completed resulting in no input from the community, local residents or the Ramapough Lenape Native American Tribal leadership. While the Environmental Justice Coordinator did finally make an appearance after seven years, the information in the original report was so fatally flawed. This assessment must be completely redone and include additional missing information that would have been included had they actually conducted interviews with the community, held discussions with the public at large and completed a door-to-door discussion with each home.

Additionally, USEPA claimed that there was no comparable community to use as a suitable reference community to use as the basis for comparison in determining whether there was or exists a disproportionate environmental

and/or human health effect or impact. In fact, this claim is false because the Ramapough Lenape Native American Tribe has areas where members of their tribe reside, such as Stag Hill that could have been used to determine one of the data comparisons that the Environmental Justice Assessment team needed.

Loss of Cultural and Religious Hunting Grounds:

USEPA's Environmental Justice Assessment team must include the loss of the cultural and religious hunting grounds, which are now slated to be permanently lost if USEPA's Proposed Plan suggested Alternative is selected. Peter's Mine Pit, Cannon Mine and O'Connor Disposal Area have been used by the Ramapough Lenape Native American Tribal members for at least 300 years and are part of their cultural heritage and religion. By the USEPA failing to completely cleanup these three areas, they are depriving the Ramapough Lenape Native American Tribe of their constitutional protected rights to freedom to practice their religion. USEPA must conduct another environmental justice assessment that takes into account the religious implications of taking away the ancestral lands of the Ramapough Lenape Native American Tribe with the permanently destruction of the ability to practice their religion that includes hunting and gathering foods in and around these areas.

The findings of USEPA's Environmental Justice Assessment say that the residents of Upper Ringwood have been negatively affected. The USEPA's risk assessment fails to take into account that there is more sludge out there as demonstrated by Chief Vincent Mann's recent discovery of a large deposit of toxic paint sludge outside of the known 500-acre site boundary. There are likely many more areas still out there yet undiscovered.

Release of "Out of the Furnace" Movie:

This Ramapough Lenape community is still being unfairly targeted and treated by the outside community as evidenced by the release of the new movie, "Out of the Furnace," which portrays the Ramapough Lenape in a negative stereotype. This is proof the USEPA Environmental Assessment Team failed to quantify the depth of negative impacts in this community. See this link for details: http://www.nytimes.com/2013/12/12/nyregion/new-film-out-of-the-furnace-accused-of-stereotyping-ramapough-indians.html?pagewanted=2&_r=0

Failure to include Native Americans as Co-Regulators in National Remedy Review Board process:

Additionally, the USEPA guidance for the National Remedy Review Board for "State/Tribal Involvement," clearly states:

> *The Board recognizes that the States and Tribes have a unique role in the Superfund program as "co-regulators," and has taken steps to ensure their significant involvement in the review process. With this in mind:*
>
> - *The Region is to consult with the affected State or Tribal government well before the Board meetings to ensure that key decision makers understand the background and intent of the review process. The Region should also make clear that the States and Tribes would have the opportunity to present their views directly to the Board.*
> - *As part of current procedure, the Region develops an informational site package that forms the basis of Board review. The Board asks that each Region work with appropriate State and Tribal personnel to ensure that the "summary of State issues" section of that package is accurately developed.*
> - *The Regional RPM is to distribute the full site package to the appropriate State and/or Tribe concurrent with Board distribution. He or she should also solicit their general reaction to the material at this time.*
> - *For each site, the Board meets in two stages: information gathering and deliberations. The Board will routinely invite State and/or Tribal decision makers to the information-gathering phase of its site reviews. The Board will invite the State and/or Tribe to participate in the deliberative discussion for State-lead fund-financed decisions, and for State/Tribe enforcement- lead decisions where the State/Tribe seeks EPA concurrence. Otherwise, the Board will limit its*

deliberative discussion to Agency personnel.

Since USEPA did not abide to this policy and invite decision makers from the Ramapough Lenape Tribe to be present at the NRRB deliberation, we request that the Proposed Plan comment period is halted until the Ramapough Lenape Tribe is properly informed and included in the review process. This will allow the Ramapough Lenape Native American Tribal Leadership and community to be able to understand the process and serve as a co-regulator. This process has not been done MUST not be ignored by the USEPA.

This site is a unique in all of the history of the USEPA and the Superfund program because it is the only site ever to be put on the Superfund National Priorities List (NPL), reviewed by the NRRB, delisted and then put back on the Superfund NPL due to the gross errors and mismanagement within the USEPA, New Jersey Department of Environmental Protection and misinformation by the responsible parties and their contractors. Every state and federal agency has failed them. USEPA has an opportunity to correct this failure by extending or pausing the comment period for the Proposed Plan and conducting a real Environmental Justice Assessment that accurately displays the injustices in the community.

Thank you for immediately considering all of our comments. Robert Spiegel, Edison Wetlands Association's Executive Director will serve as the point of contact and can be reached directly at 732-321-1300 or via email at rspiegel@edisonwetlands.org if you need clarification on any issues raised in our submittal.

Respectfully,

Robert Spiegel
Ringwood CAG Facilitator
Executive Director
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