PART 3 – THE RESPONSIVENESS SUMMARY

A. PUBLIC COMMENTS AND EPA RESPONSES

EPA published the notice of availability of the Proposed Plan and Administrative Record through a news release on January 9, 2020, and released the Proposed Plan to the public on January 14, 2020 by posting a publicly accessible link on EPA's website. In addition, postcard notifications were mailed to residents and businesses located within a one-mile radius of the Site. EPA also provided the Proposed Plan to the Ashland Public Library located at 66 Front Street, Ashland, MA.

From January 14, 2020 through February 14, 2020, EPA held a thirty-day public comment period to accept public comments on the alternatives presented in the Feasibility Study and Proposed Plan, and on any other documents previously released to the public. An extension to the public comment period was requested, and, as a result, the comment period was extended to March 30, 2020.

On January 23, 2020, EPA held a public informational meeting, immediately followed by a Public Hearing, to describe EPA's Proposed Plan and to accept any oral or written comments. The meeting was held at the Ashland High School Auditorium, 65 East Union Street, Ashland, MA. A transcript of this meeting and the comments received at the meeting are included in the Responsiveness Summary. Nine public comments were received during the Public Hearing, and ten were received in writing during the public comment period. Comments have been condensed, combined and categorized to facilitate responses. The full text of the written and oral comments received during the comment period has been included in the ROD Administrative Record.

Comments on the Proposed Remedy Timeframe:

Several comments were received which expressed concerns about the estimated timeframe for the design and implementation of the proposed groundwater remedy, and/or whether EPA could expedite the groundwater cleanup process for the Site. One commenter was concerned that the remedy timeframe would create further health issues for persons affected by the Site and noted that those issues could be prevented if the remedy could be completed sooner. Another commenter asked specifically what help they or others could provide to prevent the contamination at the site from harming other persons.

EPA Response:

EPA acknowledges the concerns over the time needed to implement the design and remedial action at the site. It is important to note that the timeframes provided in the Proposed Plan are estimates and are governed by both technical factors and the availability of funding. For the implementation of the design phase, the timeframes are highly dependent on the complexities of the site and the cleanup technology chosen. Although there have been several rounds of investigation conducted at the site, a robust pre-design investigation (PDI) is necessary to gather important information about the site including the location of additional sources of DNAPL for extraction/removal, and the most appropriate areas to target for groundwater treatment via in-situ chemical oxidation (ISCO). There are also many technical factors that impact the timeframe for

implementing the ISCO technology and those factors need to be fully assessed in a field scale pilot study. For example, factors such as the size of the contaminant source area, whether contaminants are trapped in hard-to-reach areas like bedrock fractures or clay, the nature of the soil or rock formations and whether they allow the oxidant to spread quickly and evenly, the groundwater flow velocity, and the lifespan of the oxidant when injected into the subsurface all have varying impacts on the implementation timeframes. A field-scale pilot study and post-injection performance monitoring are necessary steps to gather additional data to evaluate these factors prior to completing the design. Once the design is completed, the next phase is to conduct full scale implementation. Full scale implementation is an iterative approach where oxidants are injected, and monitoring is conducted to evaluate the success of each injection before additional injections are conducted. Therefore, the ISCO technology is inherently a technology that involves a prolonged implementation process.

As noted above, one additional factor that will affect the overall time to complete the design and implement the remedy is the availability of funding. The cleanup at the Nyanza site is classified as a "fund-financed" cleanup meaning that it is paid for by dollars appropriated to the Superfund program by the United States Congress. These funds go toward the cleanup of sites where potentially responsible parties are either non-existent (orphan sites) or are incapable of paying for cleanup (e.g., bankrupt). The vast majority of these funds come from General Revenues. Therefore, each year the federal budget and available funds affect the pace, scope and duration of fund-financed cleanups. In a given fiscal year, the Superfund construction budget is typically insufficient to pay for both ongoing cleanup projects and all the new shovel-ready projects. Over the last five years, EPA was unable to fund many of the new fund-financed construction projects ready to start work. EPA's decision-making process for allocating limited Superfund construction resources utilizes a risk-based process for prioritizing new construction work in balance with maintaining projects already underway.

At the Nyanza Site, the most imminent, direct threats from the Site have been mitigated by previous remedial actions conducted by EPA at the Site. Remedial actions have occurred at the Site to remove, contain, and/or control Site-related contamination, and mitigate risks since the 1980s. The OU2 selected remedy is the final stage of addressing residual contamination from the Site which is impacting groundwater.

EPA has determined the interim remedies implemented for OU2 are currently protective of human health and the environment in the short term. In particular, the vapor mitigation systems (VMSs) installed in buildings within the downgradient plume area are functioning and inspected annually by MassDEP to mitigate the vapor intrusion risk. There are also no known private or irrigation wells installed within the plume which could result in exposure to groundwater. These factors will be considered when future funding is allocated to sites for cleanup and that may impact when the Nyanza site receives the funding needed to complete the design and implementation of the remedy. However, EPA will continue to keep all interested parties informed of the project status and will continue to evaluate site conditions to insure they site remains protective until all remedial activities are completed.

Comments on Monitoring During the Remedy Implementation:

Several comments were received that requested EPA include provisions for robust and ongoing monitoring of groundwater and Site conditions during the implementation of the proposed remedy, so that EPA can evaluate remedy progress. One commenter noted that given the changing nature of technology and best practices, that EPA have mechanisms in place to revisit, evaluate and potentially make changes to the remedy based on the effectiveness.

Commenters also cited concerns about potential changes in plume mobility, instability, and the potential for people to come into contact with contaminants in their own back yards. One commenter requested that the groundwater monitoring well network be expanded to monitor contaminant movement that could reach surface water resources, particularly the various drainageways discharging to the Sudbury River. Another commenter asked about how far and wide the new monitoring wells will be located.

EPA Response:

The Monitoring Well Network Optimization phase of the selected remedy will include the installation of additional monitoring wells to address data gaps, conduct long-term groundwater monitoring, and conduct remedy performance monitoring. The optimized well network would monitor groundwater VOC concentrations in the Nyacol/WAC and downgradient plume AOCs to evaluate the impact and effectiveness of additional DNAPL removal and/or ISCO treatment. The monitoring program will also specifically target treatment areas, locations in the downgradient plume area of concern (AOC) such as the vapor mitigation area, and a portion of a potentially productive aquifer (PPA) designated by MassDEP. The existing groundwater monitoring well network at the Site is depicted on Figure 4 in Appendix C of this ROD. The additional monitoring locations are outlined in Figures 11 and 12 in Appendix C of this ROD. ISCO performance monitoring (pre-injection and post-injection events) would also be done to evaluate the effectiveness and performance of in-situ treatment. Remedy performance monitoring and long-term monitoring are critical steps which will allow EPA to monitor groundwater VOC concentrations, determine interim and long-term progress in attaining groundwater cleanup levels, evaluate the timeframe and duration for various cleanup steps described in this ROD, and to make any amendments, adjustments, or enhancements to the remedy as necessary.

Comments on ISCO Treatment:

Two comments were received with questions related to the ISCO treatment component under Alternative GW-4; specifically, how EPA would ensure that the potential benefits will outweigh the potential risks, what potential by-products may result from different ISCO chemical formulations and their mobility. One commenter inquired on how the following potential disadvantages would be addressed or mitigated:

- Potential need for large amounts of chemical.
- Resistance of some contaminants to oxidation.
- Limited ability to penetrate low permeability soil and groundwater zones.

- Potential for ISCO-induced effects (e.g., gas evolution, permeability reduction, secondary water quality effects).
- Potential for rebound of target contaminants.
- Inability to treat contaminant source zones to the most stringent goal levels (e.g., MCLs).

EPA Response:

ISCO is an aggressive remediation technology that has been applied to a wide range of volatile and semivolatile hazardous contaminants, is often considered for DNAPL source zone (or contaminant mass) removal at sites where groundwater and/or porous media have contaminants of concern, such as TCE, which are amenable to common oxidants. This also includes the dissolved-phase chemicals (i.e. in groundwater) emanating from these source zones. ISCO has been selected as a remedy at numerous Superfund sites, both throughout New England and across the United States. Chemical oxidation involves reduction/oxidation ("redox") reactions that convert hazardous compounds to nonhazardous or less toxic compounds that are more stable, less mobile, or inert. ISCO typically requires multiple iterations of oxidant application and performance monitoring due to variability in contaminant distribution, subsurface heterogeneity, and mass transport mechanisms.

Remediation technology selection is typically guided by factors such as geology, media, contaminant, treatment timeframe, remedial goals, and cost. The oxidant recommended for the Site is activated persulfate, which can have a persistence ranging from weeks to months after application. Robust site characterization, design analysis, oxidant application and delivery approach, and treatability and pilot testing prior to full-scale application can optimize the ISCO process and potentially reduce the amount or frequency of the oxidant needed for treatment. The pre-design investigation and bedrock hydrogeology analyses for the Site will be critical to target ISCO treatment zones in the subsurface bedrock to ensure reagents reach contaminated zones.

ISCO technology poses a low risk to the surrounding community during implementation, as the treatment reactions occur in the subsurface. Remediation will be focused in the Nyacol/WAC AOC, which is a commercial/industrial zoned area. Proper training, use of personal protective equipment (PPE), and engineering and administration controls will reduce risks to workers who handle and distribute the ISCO chemicals and to ensure safety to humans and the environment. Site-specific ARARs have also been evaluated to ensure regulatory compliance for environmental factors including underground injection control, air quality, and water quality. ISCO can work relatively quickly to remediate a contaminant source area when compared to other groundwater treatment technologies (such as pump and treat).

Performance evaluation metrics such as process monitoring (concentration, volumes, flow rates and distribution of the oxidant) and a robust groundwater monitoring program are necessary to evaluate the effectiveness of the ISCO treatment. Monitoring will be accomplished through new and existing monitoring wells in the source area and in the downgradient plume. Data collected during and after ISCO treatment will be compared to remediation goals and historical data (to identify changes or trends in groundwater VOC concentrations, plume characteristics, ISCO reaction byproducts, and contaminant reduction, degradation and/or rebound). Modifications to

the treatment techniques may be required or necessary during the remedial design or remedial action phases based on testing, performance, and monitoring results. For more information on ISCO technology, please visit EPA's Contaminated Site Clean-Up information website: https://clu-in.org/techfocus/default.focus/sec/In_Situ_Oxidation/cat/Overview/

Comments on EPA Alternative GW-5:

Two comments were received whereby the commenters favored alternative GW-5 over EPA's proposed alternative GW-4, because the GW-5 plan was more aggressive than GW-4 and would achieve faster results with the additional step of groundwater pump and treat after ISCO treatment. Commenters also noted that GW-5 and GW-4 did not contain direct treatment measures to address contamination in the downgradient plume AOC, which have some hot-spot locations with elevated TCE concentrations.

EPA Response:

Although alternative GW-5 was evaluated and considered, EPA ultimately decided the disadvantages of constructing and operating a groundwater pump and treat system outweighed the advantages. GW-5 requires the construction of a central treatment plant building on the Nyacol property to process the extracted groundwater. Space considerations for this central treatment building footprint were a concern and would require occupation of a section of private property with heavy industrial activity. The ongoing operation and maintenance of a groundwater treatment plant requires significant quantities of electricity, treatment media, and contractor oversite. Alternative GW-5 is also almost twice the cost of GW-4 and would have a high O&M cost burden for the State in the long term. The treatment system would also require an oil-water separator to remove residual DNAPL, a holding tank with a chemical inhibitor for iron and manganese precipitation, an air stripper with carbon to remove VOC vapors to meet state air regulations, and a heat exchanger. Residual contamination from the oil-water separator and carbon filters require off-site disposal and/or reclamation. Extracted groundwater needs to be discharged off-site either by an indirect discharge to a publicly owned treatment works (POTW), or a direct discharge to a waterway (such as the Sudbury River), and effluent would need to be treated and sampled for compliance with discharge limitations under a National Pollution Discharge Elimination System (NPDES) permit to meet state and national standards. The 1991 interim ROD for Nyanza OU2 selected a groundwater pump and treat system, but it was not successful during field testing due to the discovery and presence of DNAPL that interfered with the pilot pump and treat system at that time.

Although the estimated times to achieve remediation goals for alternative GW-5 were calculated to be less than GW-4, the overall attenuation of the downgradient plume (i.e. reduction of contaminant concentrations) from the source area treatment would still be a slower process under both alternatives based on the geology and distribution of contamination. EPA believes the selected remedy GW-4 achieves the best overall balance among the nine criteria used to evaluate the various alternatives. This cleanup approach provides short-term and long-term protection of human health and the environment, attains applicable federal environmental and state environmental laws and regulations, reduces the toxicity, mobility, and volume of contaminants through treatment to the extent practicable. The selected remedy uses also proven cleanup

technologies and is generally cost effective while achieving the Site-specific cleanup objectives in a reasonable timeframe, with lesser impacts to the surrounding community.

In the downgradient plume AOC, EPA ultimately decided that direct treatment was not feasible and would be difficult to implement. The downgradient plume area, primarily located within downtown Ashland, is heavily developed and contains more than 40 residential and commercial properties. ISCO treatment requires pressurized chemical injections, including multiple rounds of full-scale chemical applications which would have resulted in a greater impact to the community within off-Site residential areas. Obtaining access to multiple properties to conduct treatment activities was expected to be challenging and limited. Other land availability, limitations, and potential impediments (e.g., active railroad tracks, existing buildings, density of homes, major utilities) could restrict or prohibit treatment within the targeted areas of the downgradient plume. The selected remedy GW-4 targets source removal and treatment of residual contamination in the Nyacol/WAC AOC, which is directly contributing to the dissolved contamination in groundwater within the downgradient areas.

Comments on Communications with the Public During Remedy Implementation:

Comments were received requesting that EPA keep the public and local organizations continuously informed about ongoing Site remedial work, including the timing and location of remedial activities such as ISCO treatment. The comments included questions about how citizens can learn about and be updated on the Site work and whether there would be a live feed of ongoing remediation work. One commenter noted concerns about how and when citizens would be notified if the Site had been compromised or if an emergency or potential release occurred during remediation work or due to an extreme weather event such as a flood.

EPA Response:

EPA considers community involvement to be an important component of the Superfund cleanup process, and Site-specific community involvement plans are developed and implemented for each site, including the Nyanza Site. EPA typically tailors the scope of the community involvement plans to the level of community interest in the site and at each the stage of the cleanup process. EPA will take into consideration the requests for enhanced communication by providing timely and periodic updates as part of the community involvement plan (CIP) for the Site. These updates may occur in various ways, including fact sheets, press releases, website notifications, social media, and working directly with Town officials to assist with information dissemination.

A formal communication plan can be developed as part of the implementation of the remedy to ensure that the public and businesses are kept updated and informed of Site activities. Although EPA is not anticipating live feeds from remedial activities, visual aids such as photographs and videos may be shared as part of the communication plan. In the event of any emergency, EPA and their contractors working at the Site would immediately coordinate with the Town's response authorities, and corrective actions would be documented.

Comments on Proposed Institutional Controls:

A comment was received which explained that the Nyanza Advisory Subcommittee has been working on ways to implement ICs pertaining to the use of the groundwater and vapor mitigation systems, while noting the methods and possible ways of implementing the ICs were somewhat limited.

EPA Response:

EPA thanks the Nyanza Advisory Subcommittee for their efforts to implement ICs. EPA will work in coordination with the Town of Ashland, the Nyanza Advisory Subcommittee, and MassDEP regarding details of implementing future ICs related to the Site.

Comment on the Comparative Analyses Table:

A comment was received regarding Table 2 (Comparative Analyses of Remedial Alternatives) in the Proposed Plan. Specifically, was there any type of scoring matrix that EPA could create for comparing remedies to help assess what would achieve a quicker Site cleanup without factoring in or including the remedy cost.

EPA Response:

EPA is required to utilize nine criteria to evaluate cleanup alternatives and select a final cleanup plan for Superfund Sites: overall protection of human health and the environment, compliance with ARARs, long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, short-term effectiveness, implementability, costs, state acceptance and community acceptance. EPA prepared a table summarizing the results of the Comparative Analyses for all the remedial alternatives considered for OU2 for the first seven of these evaluation criteria and presented that summary in Table 2 of the Proposed Plan. The two final evaluation criteria are state and community acceptance and these criteria are considered after receiving comments during the public comment period. The time to achieve target remediation goals as well as the cost to achieve those goals are important factors considered by EPA when selecting a final remedy. However, under the Superfund laws and regulations neither criteria can form the sole basis for selecting a final cleanup plan. The Superfund laws and regulations require EPA to consider all nine criteria and select a final remedy that represents the best balance among all criteria.

Comment on Ecological and Human Health Risks of VOC Contamination in Riverine Areas:

One commenter had questions about how residual VOC contamination in groundwater baseflow entering riverine areas (the Sudbury River and the surrounding floodplains and wetlands) would impact: (a) ecological exposure risk for sensitive wildlife, and (b) human health exposure risk for recreational users of the Sudbury River. They also noted that restoring natural healthy wetland and riverine habitat in

contaminated areas may provide the best means of slowing and removing contaminants and protecting the health of humans and wildlife, including aquatic wildlife. The commenter also noted that the selected remedy should take into consideration the potential for riverine flooding, at levels that reflect current models of climate change-induced riverine flooding and changing precipitation patterns.

EPA Response:

Under Nyanza Operable Unit 04 (OU4), EPA investigated a 26-mile stretch of the Sudbury River which was impacted by site contamination. Various remedial activities for OU4 were completed by EPA during 1992 to 2017, including implementing ICs (i.e. the posting and inspection and maintenance of fish consumption and mercury advisory signs along the Sudbury River in 6 communities), sediment sampling, fish tissue collection from the Sudbury River to monitor mercury levels, and human health risk and ecological risk assessments pertaining to mercury and mercury exposure. A preliminary ecological assessment of groundwater impacts to surface water was included in the 1991 RI/FS. In 1999, a Supplemental Baseline Ecological Risk Assessment was completed which revealed no known potential ecological exposure pathways or receptors for contaminated groundwater associated with Nyanza OU2. Between 1999 and 2003, several studies were conducted to evaluate potential ecological risks posed by the groundwater VOC plume that is slowly discharging into the Sudbury River. Results indicated that aquatic life was affected in one of three areas studied, but any impact could not be definitively tied to the groundwater plume over other existing habitat conditions such as storm water runoff into the river, low dissolved oxygen levels, stagnant water, and/or high amounts of detritus (leaf litter). Human health risk for recreational users in the Sudbury River is focused on the consumption of fish with mercury contamination. VOC contaminants in groundwater have not been identified as a human health risk in fish tissue or surface water.

EPA has determined the selected remedy is not anticipated to cause impacts to floodplains and will not result in the occupancy or modification of floodplains adjacent to the Site. The remedial components (PDI, direct treatment) are not planned within the floodplain designation Zone AE (the 100-year flood zone) or Zone X (the 500-year flood zone). EPA has determined that the selected remedy is the least environmentally damaging practicable alternative for protecting federal jurisdictional wetlands and aquatic ecosystems at and/or adjacent to the Site. Most of the wetlands on or near the Site are not located in the remedial areas, with the exception of certain wetlands located west of the Nyacol property and southeast of the WAC property. EPA will minimize potential harm and avoid adverse impacts to wetlands by using best management practices during the investigation and treatment phases of the remedy. The installation of additional groundwater monitoring wells for the remedy may be required within designated wetlands or floodplain areas in the downgradient plume. However, the well installation is a temporary action and best management practices will be employed to minimize any temporary impacts to floodplains, wetlands, or areas that may border floodplains. Any wetlands that are inadvertently affected by the remedial work described in this ROD will be restored or mitigated with native wetland vegetation, and any restoration efforts will be documented and monitored.

Comments on Cleanup versus Containment of Site Contamination:

EPA received one comment that supports active clean-up rather than the containment of remaining contamination from the Site. Another commenter noted concerns that contamination contained in place at the Site capped landfill is not being adequately monitored.

EPA Response:

EPA's selected remedy intends to physically remove residual DNAPL contamination from the Site that resides in the Nyacol/WAC AOC by the installation of additional DNAPL extraction systems; the remedy will also employ methods to treat contamination "in-situ", or treating in-place, by the injection of ISCO oxidants into the subsurface. The capped landfill is a remedy component that was implemented as part of OU1, and later modified under OU3. To ensure the effectiveness of the OU1 and OU3 remedies, MassDEP conducts routine inspections and makes necessary repairs to the components of the landfill including the cap, the toe, side slopes, drains and the landfill gas vents. MassDEP also conducts inspections and routine maintenance on the landfill stormwater drainage system, the interceptor trench, underdrain system (terminal manhole), sedimentation basin, and landfill site perimeter fence. Finally, MassDEP monitors groundwater from 15 monitoring wells and conducts air monitoring around the landfill to evaluate whether the remedy is functioning properly. To date, these inspections and monitoring results have demonstrated that the landfill continues to effectively contain the waste.

Comments on Construction of a Recreational Path Near the Site:

Two comments were submitted regarding the risk and safety of a proposed future multi-use, paved recreational path in Ashland that would run adjacent to the Site and in the vicinity of Trolley Brook. A commenter also noted a concern that the landfill cap has reached the end of its lifecycle.

EPA Response:

EPA has not identified a human health risk from the Site for recreational activities such as walking or biking on a recreational trail in the vicinity of Trolley Brook or adjacent wetlands. Trolley Brook and the adjacent Eastern Wetland were remediated by EPA between 1999 and 2001 under OU3 in accordance with a March 1993 EPA Record of Decision. These wetlands and drainageways originally received wastewater discharges contaminated with mercury from the textile dye manufacturing processes that occurred at the Site. The cleanup plan for OU3 included excavation of sediment with mercury levels above 1 mg/Kg; dewatering of excavated contaminated sediment and placement under the landfill cap; restoration of impacted wetlands; and institutional controls to increase public knowledge about mercury contamination in the Sudbury River sediment and fish tissue. To ensure the protectiveness of these remedies, MassDEP performs O&M activities in this area including inspections of Trolley Brook.

The selected remedy in this Record of Decision for (OU2) is focused on addressing the groundwater contamination that is flowing underground from the former Site manufacturing area, toward the Sudbury River.

The Nyanza landfill cap does not have a 30-year life span; this is a misconception based on the 30-year timeframe used by the Superfund program for monitoring and cost estimation purposes. Literature and research on other similar landfill caps indicate that these caps can last well over hundreds of years. The Nyanza landfill cap consists of a 60 mil membrane located more than 35 inches below the surface which sits above a solid engineered bentonite layer. Also included in the landfill design is a water collection and diversion trench used to divert clean groundwater and surface water around the landfill. The Nyanza cap is inspected annually by MassDEP as part of their O&M activities and is still in good condition. After in-depth structural engineering and plan reviews, the cap was approved for a solar array by EPA and MassDEP. The solar array was completed and activated in December 2019. EPA and MassDEP have no plans to terminate the Nyanza landfill monitoring program. Any future repairs to the landfill that may be required would be performed by the appropriate party.

Comment on Excavation Work for Utilities Projects:

A comment was received about a proposed 5-year gas pipeline utilities project, and whether there would be any risk of exposure to Site contaminants or health concerns for residents located near the project.

EPA Response:

At this time, EPA does not have information on the design or construction plans for the proposed 5-year pipeline project. However, EPA has established a process of communication with the Town of Ashland, whereby various Town departments (i.e., Board of Health, Conservation Commission, and Planning Department) seek input from EPA and MassDEP on construction projects with excavation activities planned within or near the Site groundwater plume. The purpose of this process is to ensure property owners, developers, and construction managers are aware of the groundwater contamination and potential exposure risk and can implement the appropriate measures for health and safety and materials handling.

Comment on Residential Gardening and Minor Residential Digging Activities:

A comment was received with a question about the safety of residents performing flower gardening and minor excavation work such as post-hole digging for a fence installation, [i.e. at properties located within the downgradient groundwater plume].

EPA Response:

EPA has not identified a risk from the Nyanza Superfund Site groundwater for shallow residential digging activities such as gardening or fence post-hole digging, based on available soil and groundwater data. Although depth to groundwater varies by location throughout the plume, water level measurements collected in 2018 from monitoring wells in the center of the existing vapor mitigation area indicate groundwater depths of 6.5 feet or greater below the ground surface.

EPA contends that encountering groundwater several feet below the surface during light residential digging activities is highly unlikely. EPA has mitigated risk to Site-related surface contaminants (i.e. sediment and soil) during prior remedial actions under Nyanza Operable Units 01 and 03.

Comment on the Government Purchase of Homes in Ashland:

A comment was received which requested that the federal and state government consider giving anyone who has purchased a home [near the Site] and have not been given adequate disclosure over the past 10-20 years the ability to sell their homes to the government.

EPA Response:

It is EPA's policy to implement Superfund remedies in such a way as to protect public health without the need for relocation. EPA's preference is to address the risks posed by Superfund Site contamination by using well-designed methods of cleanup which allow people to remain safely in their homes and businesses. The overwhelming majority of Superfund sites located in residential areas are being cleaned up without the need for EPA to permanently relocate residents and businesses. Permanent relocation may be considered in situations where EPA has determined that structures must be destroyed because they physically block or otherwise interfere with a cleanup and methods for lifting or moving the structures safely, or conducting cleanup around the structures are not implementable from an engineering perspective. Permanent relocation may also be considered in situations where EPA has determined that structures cannot be decontaminated to levels that are protective of human health for their intended use, or when potential treatment or other response options would require the imposition of unreasonable restrictions to maintain protectiveness (e.g. where property owners' use of their yards would be prohibited or severely restricted). Permanent relocation may also be considered when an alternative under evaluation includes a temporary relocation expected to last longer than one year, and/or if temporary relocation remedy may not be practicable or there is a shortage of available long-term rentals within the immediate area making it difficult to implement temporary relocation.

EPA has not identified the need for relocation of any business or residences related to the Nyanza site. In 2007, EPA installed a total of 43 vapor mitigation systems (VMSs) in 41 buildings based on indoor air studies and groundwater sampling data. Criteria for determining properties that required a VMS included: location of where test results exceed EPA's proposed target risk for the inhalation of vapors; concentrations of target VOC contaminants in groundwater, particularly TCE; and use of modeling to identify structures that may be susceptible to inhalation risks from vapor intrusion. VMSs are similar in design to radon remediation systems and reduce the potential for vapors from groundwater contaminants such as TCE to migrate and accumulate in buildings at concentrations that may pose health risks. These systems were installed at no cost to the property owners on a voluntary basis, with access and approval from the property owners.

Comment on the 2015 Groundwater Monitoring Data Summary (Nobis, 2016):

A comment was received on the 2015 Groundwater Monitoring Data Summary report for the Nyanza Chemical Waste Dump Superfund Site, Operable Unit 2, which was prepared for EPA by Nobis Engineering, Inc. in December 2016. The commenter noted that he had detected a calculation error on report Table 5-4: "Historical Data Comparison – MCP Exceedances and Maximum Concentrations", in the column '2015 – 2014 Differences'.

EPA Response:

EPA reviewed this report table, and determined that the data displayed under the column of "2015 – 2014 differences, Maximum Concentration (µg/L)" was inadvertently calculated as the difference between the 2014 and 2013 maximum concentrations, rather than the difference in the 2015 and 2014 maximum concentrations. This information will be corrected in the report, however this discrepancy does not affect the remedy selected by EPA.

Comments from Environmental Companies:

EPA received comments from two independent environmental companies describing their interest in the proposed Site remedial actions, and/or technologies that could be employed during Site remediation activities.

EPA Response:

EPA appreciates the expressed interest in the Site and the technological information provided. EPA contracts are awarded under the Remedial Acquisition Framework (RAF) to provide national support through multiple award contracts to the EPA remedial program and its responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). More information can be found at: https://www.epa.gov/contracts.

Comment Pertaining to Groundwater PRGs:

EPA received a comment from MassDEP regarding the preliminary remediation goals (PRGs) for groundwater. MassDEP questioned if EPA evaluated cumulative risk across multiple chemicals. MassDEP noted that if the PRGs for individual chemicals were based on EPA's upper limit for risk ($1x10^{-4}$ for carcinogenic risk and HI = 1 for non-carcinogenic risk), then the sum of risks from multiple chemicals could exceed EPA's upper limit of acceptable risks.

EPA Response:

During the risk assessments completed in 1991 and 2005, EPA evaluated the cumulative human health risk from exposure to multiple contaminants in groundwater and indoor air as required by EPA Risk Assessment Guidance for Superfund (RAGS). These evaluations led to the development of remedial action objectives that addressed the unacceptable risks and the installation of vapor mitigation systems (VMSs) in several residences and buildings. The goal of

the remedy in this ROD is to reduce the concentration of contaminants in groundwater to levels such that VMSs are no longer needed. EPA calculated groundwater remediation goals based on site-specific vapor intrusion screening levels using a cancer risk target of $1x10^{-4}$ (1-in-10,000). These groundwater remediation goals serve as a target for reducing VOC concentrations in groundwater to a level that is protective of human health for exposure to indoor air. EPA believes these remediation goals are conservative because there are many other factors that will affect how contaminants migrate from groundwater to indoor air that are not accounted for in the calculation of these screening levels. Because these remediation goals are based on screening level calculations, EPA will not use these groundwater remediation goals as the sole factor in determining if the vapor mitigation systems can be terminated. Instead, EPA will use multiple lines of evidence, (i.e. groundwater concentrations, indoor air, sub-slab soil gas concentrations, etc.) to determine whether a vapor intrusion pathway may be present, which is consistent with EPA's "OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air," OSWER 9200.2-154, June 2015. EPA has calculated indoor air screening levels (SLs) (see Table 2 of Appendix B) which can be used to confirm whether residual groundwater contamination is causing an unacceptable risk in indoor air.