

Comprehensive Remedial Action Plan

Percontee Cherry Hill Road Facility-Revised

11700 Cherry Hill Road
Silver Spring, Maryland 20904

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Prepared by:



1311 Haubert Street
Baltimore, MD 21230
p 410.659.9971



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1 Introduction

Global LifeSci Development Corporation (GLDC) has contracted Arc Environmental to prepare a Comprehensive Remedial Action Plan (Plan) for redevelopment of the Percontee Cherry Hill Road Sand and Gravel Quarry located at 11700 Cherry Hill Road in Silver Spring, Maryland 20904 (Site).

GLDC is the master developer of the Site and has been selected by Montgomery County as the master developer of the adjacent Former Washington Suburban Sanitary Commission (WSSC) ComPro Facility (Site II) property to create a mixed use commercial and residential life sciences community at the combined approximate 300 acre development area. A development of this size and complexity is expected to be a process that will be completed over a 15-25 year time period.

Many different and separate development entities and partners will be participating in the Site redevelopment at varying times and durations throughout redevelopment. The purpose of this Plan is to provide these future development partners a Maryland Department of the Environment (MDE) approved document describing the future actions needed to achieve either a No Further Requirements Determination (NFRD) through the Voluntary Cleanup Program (VCP) or No Further Action (NFA) from the Controlled Hazardous Substances (CHS) Division of MDE.

This Plan will assist development partners in obtaining financing, developing construction schedules, and navigating issues relating to subdivision of parcels within the larger Site area while managing environmental media in a manner that is protective of public health and the environment. This plan will apply to all parcels at the Site throughout the entire development process.

This Plan will detail environmental investigation matrices, remedial options to address known and perceived impacts, CHS and VCP processes, worker health and safety, and submittals to satisfy documentation requirements of the MDE.

2 Site Description

2.1 Current Site Operations

The Site consists of five land parcels totaling approximately 171 acres. The Site boundaries are depicted on Figures 1 through 3 (Tab 1). The Site was historically mined for bank run gravel. Currently, the Site operates as a rubble dump, a sand, gravel, stone, and topsoil processor and wholesaler, a concrete recycler, a liquor store, and a residence. The Site is divided into two portions by FDA Boulevard which runs east to west through the Site. More specific Site operation descriptions are provided below:

The eastern portion of the Site, north of FDA Boulevard, consists primarily of the Percontee facility. The structures associated with the Percontee facility consist of a service bay and two



single-story buildings utilized for office space, maintenance, and storage. These buildings are located on a reportedly unmined portion of the Site. Uses of the Site adjacent to the Percontee buildings consist of construction material and processed aggregate storage. The northeast corner of the Site is improved with a liquor store and a residence, addressed as 11790 Cherry Hill Road and 11800 Cherry Hill Road, respectively.

The northwest area of the western portion of the Site, north of FDA Boulevard, is leased by Concrete Supply Corporation (CSC), a concrete supplier. The CSC structures consist of a concrete mixer and three single-story structures consisting of an office building, a maintenance building, and a storage building. Other uses of the western Site division consist of stone and gravel processing.

The remaining portions of the northern half of the Site and the area south of FDA Boulevard consist of mined areas that have been filled with rubble and are now vegetated with grasses and wooded buffers along the Site boundaries. All previously mined areas are in various stages of reclamation.

2.2 Environmental Assessment Summary

A Phase I Environmental Site Assessment (ESA) was completed at the Site in October 2014. Several Recognized Environmental Conditions (RECs) were identified during the ESA. The REC carrying the greatest risk included the past Site operations as a gravel quarry and the undocumented fill used to reclaim the mined areas of the Site. Minor RECs at the Site consisted of localized areas of surface staining from poor housekeeping of aboveground storage tanks, storage of hazardous and regulated substances, and current and historic uses of underground storage tank (UST) equipment.

In the spring of 2015, GLDC conducted a Phase II ESA the Site to evaluate the RECs identified in the Phase I ESA as well as establish baseline environmental conditions at the Site. This Phase II ESA effort consisted of installation of 39 soil borings, test pits, and temporary wells, and characterization of soil, sediment, surface water, groundwater, and soil gas across the 171 acre Site.

Seventy-three soil and sediment samples were collected from the Site and analyzed for one or more of the following: priority pollutant list (PPL) Metals, total petroleum hydrocarbon diesel and gasoline range organics (TPH-DRO/GRO), polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), asbestos, hexavalent chromium, and elemental mercury.

Results of the soil analysis identified the presence of several metals (arsenic, chromium, lead, mercury, and nickel), TPH-DRO, and PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene) above the applicable Anticipated Typical Concentration (ATC) or MDE Residential Cleanup Standard (RCS) in one or more soil samples.



Eight groundwater samples were collected from the Site and submitted for laboratory analysis of PPL metals, SVOCs, VOCs, and TPH-GRO/DRO. Results of the groundwater analysis identified the presence of several metals (arsenic, chromium, lead, and nickel) and TPH-DRO/GRO above the applicable MDE Groundwater Cleanup Standard (GWS) in one or more groundwater samples.

Seven surface water samples were collected from the Site and submitted for laboratory analysis of PPL Metals, TPH-DRO/GRO, SVOCs, and VOCs. Results of the surface water analysis identified the presence of several metals (arsenic and thallium) and PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene) above the applicable Maryland Numerical Criteria for Toxic Substances in Surface Water Standard (MNC) in one or more surface water samples.

Two soil gas samples were collected from the Site and submitted for laboratory analysis of VOCs. No concentration of a detected VOC was greater than its respective USEPA Regional Screening Levels (RSL).

A summary of analytes detected in the various media sampled at the Site is provided on Tables 1 through 6 in Tab 2. A figure depicting sample locations is provided as Figure 4 in Tab 1.

2.3 Future Development

The planned redevelopment of the Site will consist of a mixed use commercial and residential life sciences community, including research and laboratory space, a blend of workforce, affordable and market rate housing, shops and restaurants, and a hotel and conference center. All current Site operations will be discontinued.

The planned development of the Site is projected to create more than 6,000 new jobs, more than 4 million square feet of new office, research and development, retail, commercial, and other non-residential uses, and approximately 3,000 new (non-single family detached/non-fee simple) residences. The current zoning of the Site is CR-Commercial/Residential.

No single family detached home sites or fee simple home ownership will be located at the Site. All residential structures (e.g. townhome, condominium or apartment) at the Site will be part of a homeowner's association.

3 Developer Roles and Processes

The following steps describe the roles and processes for GLDC and their development partners while navigating through VCP and CHS.

1. GLDC entered into an agreement with the MDE CHS for the entire Site on November 10, 2015.
2. GLDC identifies a Development Partner for a parcel of the Site.



3. GLDC and the Development Partner identify the parcel boundaries through either metes and bounds surveys and/or legal subdivision. Legal subdivision of the designated parcel(s) will be required prior to conclusion of the VCP process (e.g. receipt of NFRD).
4. GLDC conducts mass grading of the parcel as necessary with Site soils to bring the parcel to its development subgrade elevation.
5. Development Partner to select an acceptable MDE program to achieve closure in the form of either a NFA through CHS or a NFRD through VCP as described below:

CHS Option	VCP Option
<ol style="list-style-type: none"> 1. If required by MDE, the Development Partner completes soil characterization of the parcel per the soil sample collection and analysis matrix in Section 4 of this Plan. Any additional soil characterization should be completed before implementing any environmental response plan. Soil characterization sampling and analysis plans (SAPs) will be provided to the MDE Land Restoration Program (LRP) prior to sampling. 2. Complete a capping remedy as described in Section 5.1 of this Plan. Additional Site characterization may not be needed as described in Section 4 of this Plan. 3. Following implementation of the capping remedy, a completion report will be prepared and submitted to MDE with a request for issuance of a No Further Action letter. Environmental covenants detailing the engineering and institutional controls, if required, will be recorded for each parcel as detailed in Section 5.4. 	<ol style="list-style-type: none"> 1. The Development Partner applies for expedited Inculpable Party (IP) status prior to taking title to the property. 2. Within six-months of receipt of IP status, the Development Partner will submit a VCP application to MDE. The VCP application will require submittal of an updated Phase I ESA. 3. If required by MDE, the Development Partner completes soil characterization of the parcel per the soil sample collection and analysis matrix in Section 4 of this Plan. Any additional soil characterization should be completed before implementing an environmental response and either before or after the VCP application submittal. Soil characterization SAPs will be provided to the LRP prior to sampling. 4. MDE accepts property into VCP after review of application and IP status is confirmed. 5. If MDE does not issue a NFRD at the time the VCP application is accepted, the Development Partner then withdraws from VCP and requests oversight by CHS.



	<p>6. The Development Partner completes the capping remedy described in Section 5 of this Plan based on their construction schedule. Upon completion, the development partner will receive a NFA through CHS. Environmental covenants detailing the engineering and institutional controls, if required, will be recorded for each parcel as described in Section 5.5.</p> <p>7. The Development Partner re-applies to the VCP and is issued a NFRD.</p>
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4 Environmental Investigations

Unless required by MDE, Additional Site characterization would not be needed as described in Section 4 of this Plan. As shown in the steps above, the Development Partner may conduct additional Site characterization as part of their participation in the CHS and VCP, if determined to be required by MDE.

The information gathered during any additional assessments will allow the MDE to confirm the suitability of the chosen remedies described herein, or, to determine that a remedy will not be required, and provide the Development Partners a baseline of environmental conditions at the parcel prior to taking title.

In the event sampling is completed and in an effort to streamline the investigative process and allow the Development Partners to quantify due diligence costs, the following sample collection and analysis matrix will be applied for each subdivided parcel.

- Generally, for parcels one acre or less in size and based on site-specific and development characteristics, exposure unit and land use up to five soil boring locations will be completed with collection of up to ten samples for laboratory analysis; up to five samples will be secured from the zero to one foot below grade interval and up to five samples will be secured from the four to five foot below grade interval. As an alternative, at least one multi-incremental sample per exposure unit or parcel(s) may be collected per acre.
- Generally, for parcels one acre to four acres in size and based on site-specific and development characteristics, exposure unit and land use up to eight boring locations (but not less than five total boring locations) will be completed with collection of up to 16 samples for laboratory analysis; up to eight samples will be secured from the zero to one foot below grade interval and up to eight samples will be secured from the four to five foot below grade interval. As an alternative, at least one multi-incremental sample per exposure unit or parcel(s) may be collected per acre.



- Generally, for parcels between four and ten acres in size and based on site-specific and development characteristics, exposure unit and land use up to ten boring locations (but not less than eight total boring locations) will be completed with collection of up to 20 samples for laboratory analysis; up to ten samples will be secured from the zero to one foot below grade interval and up to ten samples will be secured from the four to five foot below grade interval. As an alternative, at least one multi-incremental sample per exposure unit or parcel(s) may be collected per acre.
- Generally, for parcels greater than ten acres in size and based on site-specific and development characteristics, exposure unit and land use no less than 16 boring locations and no less than one boring location per acre will be completed with collection of a minimum of 32 samples for laboratory analysis; a minimum of 16 samples will be secured from the zero to one foot below grade interval and a minimum of 16 samples will be secured from the four to five foot below grade interval. As an alternative, at least one multi-incremental sample per exposure unit or parcel(s) may be collected per acre.

During soil boring installation, all soils will be classified and field screened for total VOCs using a photo-ionization detector (PID) at one foot intervals. Each soil sample will be submitted for laboratory analysis of PPL metals by United States Environmental Protection Agency (USEPA) Method 200.8/6020 and PAHs by SIM Analysis and USEPA Method 8270C. If total chromium concentrations exceed 6 milligrams per kilogram (mg/kg) in any sample collected, at least one sample (but, in no event, more than two samples) with the highest concentration(s) will be speciated for hexavalent chromium by USEPA Method 7196A. In addition, if PID readings exceed 10 units above background or if physical evidence of a release (e.g. odors, staining, etc.) is identified at any interval in the soil column of any soil boring, the interval exhibiting these characteristics will also be submitted for analysis of VOCs by USEPA Method 5035/8260.

Upon completion of the environmental investigation outlined above, a report will be prepared by the Development Partner for submittal to CHS or VCP. The report will document all information gathered during the assessment, including a narrative of field activities, analytical results, boring logs, and figures and tables. It is anticipated that after evaluation of the report and data, CHS/VCP will issue a letter confirming the suitability of the remedies described below in Section 5 or indicate that no remedy is necessary for the parcel.

5 Remedial Action Details and Processes

Sampling and analysis completed at the Site by GLDC in 2015 has identified the presence of metals, SVOCs and petroleum compounds in soil, groundwater, and surface water at the Site exceeding the ATC and MDE RCS in soil, the GWS in groundwater, and the MNC in surface water. By direct comparison to these standards, risks to future occupants of the Site appear to exist and a remedy to address these impacts will likely be necessary in order to receive and record closure determinations for each future parcel of the master development.

It is understood that the majority of the Site has been characterized; however, the past assessments have shown generally consistent concentrations of metal and PAH contaminants



across the Site. Any additional assessments completed in the future are expected to yield similar results.

The selected cleanup criteria for soil and groundwater at the Site is the MDE RCS/ATC and GWS as referenced in the *MDE Cleanup Standards for Soil and Groundwater: Interim Final Guidance (Update No. 2.1)*; June 2008 and the MNC for surface water.

For the selected remediation plan, if any, risks to future occupants and construction workers associated with impacts to soil, groundwater, and surface water exceeding the above criteria will be addressed through a containment remedy, and/or temporary fencing and/or signage, and deed restrictions as detailed below. Alternative measures may be considered if unanticipated vapor or hazardous materials are discovered in the future.

5.1 Capping Remedy

Any alternative remedy proposed by GLDC or the development partner other than those outlined in this Plan will require a formal remedial plan submission to the LRP and, if approved by LRP, would become an amendment to this Plan. Impacts to Site soils will be addressed through the controls described below. Cross-sections depicting the engineering controls proposed for soil are included as Figures 5 and 6 in Tab 1.

Building Covered Areas

- Placement of a minimum of two inches of concrete over a minimum of three inches of granular base consisting of virgin #57 stone, or similar.
- The slab will be designed to an engineered specification suitable to the intended use.

Asphalt and Concrete Paving

- Placement of a minimum of two inches of asphalt over a minimum of three inches of granular base consisting of virgin #57 stone, or similar.
- Placement of a minimum of two inches of concrete over a minimum of three inches of granular base consisting of virgin #57 stone, or similar.
- The asphalt and concrete paving will be designed to an engineered specification suitable to the intended use.

Landscaped areas

- Placement of two feet of a combination certified clean fill (18 inches) and top soil (six inches) over a geotextile fabric marker.

Utilities

- No cap is proposed in subsurface utility corridors. It is presumed that impacts to future occupants will be mitigated through placement and maintenance of the surface cap. Repairs and replacements to subsurface utilities will be addressed through the



restrictions placed on the deed and notifications to MDE and a site specific Health and Safety Plan (HASP), as necessary.

5.1.1 Clean Fill

This Plan proposes containment remedies to mitigate exposure to impacted soil. In order to implement these remedies, clean fill materials from a designated off-Site location(s) will be utilized for construction of the cap in landscaped areas. Aggregate or stone used to construct the cap will be derived from a virgin source and within MDE risk-based soil thresholds for the projective land use for controlled hazardous substances and petroleum products and the supplier will provide a letter indicating such.

Clean fill (soil) must meet the MDE RCS/ATC prior to transport to the Site. Material from a MDE-approved clean fill source will be used for construction of the cap. If a non-approved clean fill source is identified for the Site, a clean fill sampling and analysis plan outlining the source and quantity of clean fill proposed and the protocols for sampling frequency, analysis, and quantification of the material as clean fill, will be submitted to the MDE for review and approval. If material from a quarry is utilized for clean fill, the quarry will also need to provide certification on company letter head that the material is from a virgin source, is not recycled, and was mined at their facility.

As clean fill materials are transported to the Site they will be placed in designated stockpile areas. Clean fill material stock piles will be maintained and secured separately from Site soils during remedial action implementation activities. Clean fill documentation will be submitted to the MDE prior to remedial action implementation.

In the event building demolition debris or crushed concrete will be utilized at the Site as a Capping Remedy (described in Section 5.1 above), a written request will be submitted to MDE prior to use that will include estimated quantities and sampling plans or sampling data, collected in accordance with MDE guidance, for review. Notwithstanding the foregoing sentence, crushed concrete may be used on the Site as structural fill and for subgrading activities, without the need for any further testing or characterization, and without the need for any pre-approval by MDE, provided that: (1) all areas of the Site where the recycled concrete material is used as subgrade structural fill are fully and properly documented for future reference in the event those areas are sampled at a later date; and (2) prior to any portion of the Site being sampled, tested, and characterized pursuant to the procedures of this Plan, no further use of the recycled concrete material shall be permitted at that portion of the Site, unless MDE expressly authorizes its use under the provisions of this Plan.



5.1.2 Cap Maintenance Requirements

The property owner shall maintain the integrity of the cap at all times to prevent exposure to contaminated soil by any person on the property at any time. To evaluate adequacy of the caps, inspections of the slab and parking areas shall be conducted yearly, targeting early spring or as necessary. The property owner shall maintain written records documenting all maintenance of the cap. Inspection reports and documentation of repairs shall be available to the MDE during regular business hours upon request. The MDE shall be notified within ten business days after discovery of any needed repairs to the cap. All necessary repairs to the cap on the property (parcel) shall be completed within five business days of discovery of the needed repairs.

5.1.3 Future Excavations

All soil from beneath capped areas at the property (parcel) shall be analyzed before disposal at any off-site location and the analytical results shall be the basis for appropriate disposition of the material in accordance with applicable local, State, and federal laws and regulations. No excavated material shall be transferred to a property other than a disposal facility without appropriate sampling of the specific material proposed to be moved and prior approval of the MDE. Copies of the analytical results collected from the excavated soil and records of all soil disposal locations shall be maintained by the property owner and will be available upon request.

In the event of proposed construction that will breach the building slab or capped areas, the property owner or its designated agent shall develop and implement a soil management plan outlining soil movement activities at the property and the protective measures that will be used to ensure construction worker safety, and all sampling, handling, and disposal procedures for soils located onsite. At least 30 days prior to soil excavation activities that require implementation of the soil management plan, the property owner shall submit written notification to the attention of the Chief, State Assessment and Remediation Division, Land Management Administration, Maryland Department of the Environment, that the plan has been developed for the property.

5.2 Groundwater

Impacts to groundwater will be addressed through institutional controls. A restriction will be placed on the deed to prevent use of Site groundwater for any purpose.

5.3 Surface Water

Impacts to surface water from site related contaminants of concern are not anticipated. Normal and customary sediment and erosion control devices and storm water control mechanisms will be allowed and shall be maintained as required by local regulations.



5.4 Land Use Controls and Environmental Covenant

One of the following scenarios for land use controls or environmental covenants will apply, based on the needs or request of GLDC or the Development Partner (the "Entity"):

1. If the Entity chooses the MDE/CHS option, the process to completion will be application to CHS, and then promptly after receipt of the NFA letter, the filing of any Environmental Covenant (EC) in the local land records.
2. If the Entity chooses the MDE/VCP option, the process to completion will be application to VCP; and then promptly after receipt of the Certificate of Completion (COC) or No Further Requirements Determination (NFRD) (and depending on property use restrictions), the filing of any EC in the local land records.
3. If the Entity chooses to enter CHS and then transfer to VCP prior to completing the CHS program, the process to completion will be application to CHS, then application to VCP, then promptly after receipt of the COC or NFRD (and depending on property use restrictions), the filing of any EC in the local land records.
4. If the Entity chooses to enter CHS and complete CHS prior to entering VCP, the process to completion will be application to CHS, then promptly after receipt of the NFA letter, the filing of any EC in the local land records; then application to VCP, and then promptly after receipt of the NFRD (and depending on property use restrictions), the filing of any EC in local land records. Note that for this path, if land use designated in CHS/EC is different than land use designated in VCP application/EC, then the Entity may be required to process the change in land use designation with MDE. Also, the Entity may be required to perform additional remediation if land use changes from CHS/non-residential to VCP/fee simple residential.

For all options listed above, the MDE will typically not require an EC if property restrictions apply only to groundwater.

6 Health and Safety

General health and safety protocols will be implemented to minimize exposure to contaminants of potential concern during construction, maintenance or invasive activities for parcels where a remedy will be required. These protocols will be described in a Site-specific HASP that will be prepared prior to implementation of any remedial activities and will include details on personal protective equipment and environmental monitoring. A copy of the Site-specific HASP will be maintained on-Site during all remedial activities and all on-Site personnel will be notified of the plan.

7 Reporting

Monthly status reports will be provided to MDE every 30 days and by the 15th of the following month for the duration of implementation of a remedy for parcels where required. The monthly



status reports will provide details of the cap construction progress and photographic documentation and future work.

In addition, upon completion of cap construction at the Site, a Remedial Action Completion Report will be prepared for submittal to MDE. This report will document all information gathered during implementation of the remedy, including a narrative of field activities, clean fill manifests, and photographs and figures depicting the final capped area. The Remedial Action Completion Report will be submitted to MDE within 30 days of completing the cap installation and receipt of the clean fill manifests.

8 Project Schedule

A development of this size and complexity is expected to be a process that will be completed over a 15-25 year time period. Many different and separate development entities and partners will be participating in the Site redevelopment at varying times and durations throughout redevelopment. Implementation of characterization efforts and any needed remedies can commence at any time during this 15-25 year time period.

Once a development partner(s) has been secured for any particular parcel(s), GLDC may instruct the development partner(s) to engage with MDE as described in Section 3 of this Plan with respect to the particular parcel(s).