

New York State Department of Environmental Conservation

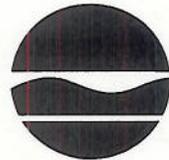
Division of Environmental Remediation

Remedial Bureau C, 11th Floor

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Joe Martens
Commissioner

June 18, 2013

Mr. Jesse Gallo
MGP Project Manager
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, New York 12601

Re: Newburgh MGP Site
Former Propane Tank Area Investigation (Area A)
NYSDEC Site No. 3-36-042

Dear Mr. Gallo,

The New York State Department of Environmental Conservation (the Department) and the New York State Department of Health (NYSDOH) have reviewed the Former Propane Tank Area Investigation (Area A) work plan for the above referenced site, dated May 13, 2013. The work plan is hereby approved with the following modifications:

1. A series of test pits or test trench will be excavated along the alignment of the retaining wall. These test pits/trench should extend the full length of the retaining wall to the extent feasible to determine the presence of all former MGP structures and observations of NAPL.
2. Additional borings or test pits may be requested by the Department as necessary.

In accordance with the Order on Consent and 6NYCRR 375-1.6(d), please indicate within 15 days whether you accept the Department's modified work plan. Please ensure that all copies of the final work plan include this approval letter, and place copies of the work plan in the document repositories.

If you have any questions, please feel free to contact me at (518)402-9564 or email me at eblukows@gw.dec.state.ny.us.

Sincerely,

Elizabeth B. Lukowski
Engineering Geologist
Remedial Action Bureau C
Division of Environmental Remediation



cc: Mark McLean, CHGE
 Nancy Gensky, ARCADIS
 David Cornell, ARCADIS
 Adam Etringer, ARCADIS
 K. Kulow, DOH
 G. Cross
 E. Lukowski

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July 18, 2013

Mr. Jesse Gallo
 MGP Project Manager
 Central Hudson Gas & Electric Corporation
 284 South Avenue
 Poughkeepsie, New York 12601

Re: Newburgh MGP Site
 Former Property Tank Area Investigation (Area A)
 NYSDDEC Site No. E-24-042

Dear Mr. Gallo,

The New York State Department of Environmental Conservation (the Department) and the New York State Department of Health (NYSDOH) have reviewed the Former Property Tank Area Investigation (Area A) work plan for the above referenced site, dated May 13, 2013. The work plan is hereby approved with the following modifications:

1. A series of test pits or test trenches will be excavated along the alignment of the retaining wall. These test pits/trenches should extend the full length of the retaining wall to the extent feasible to determine the presence of all former MGP constituents and observations of HAPs.
2. Additional borings or test pits may be requested by the Department as necessary.

In accordance with the Order on Consent and NYSDOH 275-1.6(d), please indicate within 15 days whether you accept the Department's modified work plan. Please ensure that all copies of the final work plan include this approval letter, and place copies of the work plan in the document repository.

If you have any questions, please feel free to contact me at (518) 402-9564 or email me at elukowski@dec.state.ny.us.

Sincerely,

Elizabeth B. Lukowski
 Remedial Action Branch C
 Division of Environmental Remediation



Mr. Jesse Gallo
MGP Project Manager
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, New York 12601

Subject:
Newburgh MGP Site
Former Propane Tank Area Investigation (Area A)
NYSDEC Site No. 3-36-042

Dear Mr. Gallo:

This letter represents a work plan for the investigation of the former propane tank area of the Central Hudson Gas & Electric Corporation (CHGE) former Newburgh Manufactured Gas Plant (MGP) Site. The following activities are associated with this work plan.

- Thirteen soil borings will be installed in a portion of Area A to determine the presence and extent of MGP-related non-aqueous phase liquids (NAPLs), and to characterize the soil beneath the former propane tank area.
- Test-pits will be excavated in six locations of Area A to determine the presence of former MGP structures, and observations of MGP-related NAPLs.

Details of the soil boring and test pitting program are described below.

Soil Borings

Prior to the start of ground intrusive activities, underground utilities will be located and marked by contacting Dig Safely New York, and by utilizing a private utility locating service. Furthermore, each soil boring location will be hand cleared to five-feet below ground surface (bgs). Soil borings will be advanced at the thirteen locations shown on Figure 1 (PAB13-1 to PAB13-13). Perimeter air monitoring will be performed during the investigation activities, per the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP).

The soil borings will be advanced to evaluate the presence and extent of NAPLs (if observed) and to characterize the soil beneath the former propane storage tanks and adjacent to suspected locations of historic MGP structures. Borings will be drilled to the top of bedrock (assumed to be approximately 15 feet bgs). The actual locations of the borings may be modified in the field based on utilities, access, and preceding

Imagine the result

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ENVIRONMENT

Date:
May 13, 2013

Contact:
Adam Etringer

Phone:
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Our ref:
B0020531.0001

soil boring observations. Additional borings may be advanced as a contingency to the scope, based on field observations, and upon consultation with CHGE and the NYSDEC.

Soil borings will be advanced using 3.25- or 4.25-inch inside diameter hollow-stem augers (HSAs). Soil samples will be collected continuously from the surface by advancing 2-foot long, 2- or 3-inch diameter split-spoon samplers. Soil recovered from each sample interval will be visually characterized (for soil type, grain size, color, texture, and moisture content) and placed in a container for headspace screening using a photoionization detector (PID). In addition, the presence of visible staining, NAPL, and odors, if any, will be noted per the NYSDEC *Field Descriptions of Samples for Former MGP Sites*. Each boring location will be tremie-grouted to the ground surface using a cement-bentonite grout. Following advancement of the borings, the location and ground elevation at each boring will be surveyed. Horizontal survey will be relative to UTM Zone 18 coordinates referenced to the North American Datum of 1983 (NAD83) and vertical survey measurements will be relative to the National Geodetic Vertical Datum of 1929 (NGVD29).

All drilling equipment will be decontaminated between borings (if required) and prior to leaving the site using a steam cleaner. A decontamination pad will be constructed at a location to be determined in the field. Decontamination water will be stored in a plastic storage tank, frac-tank or New York State Department of Transportation (NYSDOT)-approved 55-gallon drums.

All drill cuttings will be containerized in NYSDOT-approved 55-gallon drums or in a securely covered roll-off container. All drums and containers will be properly labeled and staged on-site at a location to be determined in the field by CHGE and the field team. Waste characterization, transportation, and disposal will be coordinated by CHGE.

If observations of NAPL in the former propane tank area justify the installation of collection wells (per discussions between CHGE and NYSDEC), the wells will be installed to an approximate depth of 15 feet. Each well will be constructed of 4-inch diameter Schedule 40 PVC with a 2-foot sump. The sump length may be extended based on visual observations and subsequent concurrence with CHGE and NYSDEC.

Test Pits

Following the completion of the soil borings described above, test-pits will be excavated in the areas indicated on Figure 1. The test-pits are located to identify the existence of MGP structures, and whether or not NAPL is observed in the subsurface adjacent to or within those structures. Specifically, the following structures will be the focus of the investigation: the 286,000 cubic foot iron gasometer foundation

(PATP13-01 and PATP13-02); the foundation of the purifier room (PATP13-03 and PATP13-04); and the possible location of the brook sewer (PATP13-5). In addition, the area located near the southwest corner of the former tar tank excavation (Former Tar Tank Test Pitting Area) will be investigated to determine if structures or NAPL is observed in the subsurface.

Test-pits will be excavated with a back-hoe or small excavator, oriented perpendicular to the structure to be investigated. The ultimate dimensions of each test pit will be determined by obstructions, subsurface soils, bank stability, and groundwater infiltration. Prior to excavating test pits adjacent to the concrete block retaining wall located on the west side of the driveway, the northern portion of the wall will be removed to allow better access for test pitting. Replacement of the wall will be determined by CHGE following the completion of the test pitting work.

Excavated material will be stockpiled on polyethylene sheeting. Visually impacted material, if encountered, will be segregated from visually clean material. Excavated material will be returned to the approximate same depth from which it was removed.

Reporting

Following completion of the work, ARCADIS will prepare a letter report detailing the results of the work described above. This reporting will be conducted in conjunction with the reporting for the NAPL collection well installation to be conducted in Areas A and B (work plan submitted concurrently under separate cover).

Schedule

It is anticipated that the field work described herein will be initiated within one month of the approval to proceed from NYSDEC, weather permitting, and based on the availability of the drilling subcontractor. It is estimated that the field activities will be completed in approximately four weeks, assuming no delays due to weather, access, or other unforeseen events.

If you have any questions, please contact me at the phone number or e-mail listed on the cover page of this letter.

Sincerely,

ARCADIS of New York, Inc.



Adam Etringer
Project Manager

Attachments:

Figure 1

Attachment 1 – NYSDOH Generic Community Air Monitoring Plan

Attachment 2 – NYSDEC *Field Descriptions of Samples for Former MGP Sites*

Copies:

Mark McLean, CHGE

Nancy Gensky, ARCADIS

David Cornell, ARCADIS

Figure



Attachment 1

NYSDOH Generic Community Air
Monitoring Plan

Appendix 1A

New York State Department of Health Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the

work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m³ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m³ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009



Attachment 2

*NYSDEC Field Descriptions of
Samples for Former MGP Sites*

**Field Descriptions of Samples for
Former Manufactured Gas Plant (MGP) Sites**

SOIL SAMPLE DESCRIPTIONS

It is important that descriptive qualifiers are consistently used to characterize degree and nature of contaminant impacts and visual-manual soil classification. The following presents some examples of descriptive qualifiers.

SOIL LOGGING

- All soils are to be logged using the **Unified Soil Classification** (ASTM D 2488 field descriptions)
- **PID or FID** used to screen all soil samples (Jar Headspace method) – maximum readings should be recorded and included on the logs. PID/FID to be calibrated daily at a minimum
- **Moisture terms** are: Dry, Moist, and Wet
- **Color terms** - use geotechnical color charts - colors may be combined: e.g. red-brown. Color terms should be used to describe the “natural color” of the sample as opposed to staining caused by contamination (see below)
- **Log of each sample interval** should be prepared as follows:

[Coarse Grained Example] NARROWLY GRADED SAND (SP); mostly fine sand; <5% fines; red-brown, moist, environmental/depositional/geologic descriptions.

[Fine Grained Example] SANDY SILT (ML); heterogeneous till structure, nonplastic, ~30% fine to coarse, subangular sand; ~10% subangular fine gravel, max. size ~ 10 mm; brown; environmental/depositional/geologic descriptions.

- **Representativeness** – Soil logs should include particular notes if the field representative believes that there is a possibility the soil sample being described is not representative of the interval sampled.
- **Intervals for Description** – if using a 2’ (split spoon) or 4’ (Macro-core) long sampler – the field description should not necessarily be for the entire sample interval. It is important to look for, identify, and describe small-scale units and changes within each sample interval.

DESCRIPTION OF CONTAMINANTS

Visible Contamination Descriptors

- **Sheen** - iridescent petroleum-like sheen. Not to be used to describe a “bacterial sheen” which can be distinguished by its tendency to break up on the water surface at angles

whereas petroleum sheen will be continuous and will not break up. A field test for sheen is to put a soil sample in a jar of water and shake the sample (jar shake test), then observe the presence/absence of sheen on the surface of the water in the jar.

- **Stained** - used w/ color (i.e. black or brown stained) to indicate that the soil matrix is stained a color other than the natural (unimpacted) color of the soil.
- **Coated** - soil grains are coated with tar/free product – there is not sufficient free-phase material present to saturate the pore spaces.
- **Blebs** - observed discrete sphericals of tar/free product - but for the most part the soil matrix was not visibly contaminated or saturated. Typically this is residual product.
- **Saturated** - the entirety of the pore space for a sample is saturated with the tar/free product. Care should be taken to ensure that you're not observing water saturating the pore spaces if you use this term. Depending on viscosity, tar/free-phase saturated materials may freely drain from a soil sample.
- **Oil**. Used to characterize free and/or residual product that exhibits a distinct fuel oil or diesel fuel like odor; distinctly different from MGP-related odors/impacts.
- **Tar**. Used to describe free and/or residual product that exhibits a distinct “coal tar” type odor (e.g. naphthalene-like odor). Colors of product can be brown, black, reddish-brown, or gold.
- **Solid Tar**. Used to describe product that is solid or semi-solid phase. The magnitude of the observed solid tar should be described (e.g. discrete granules or a solid layer).
- **Purifier Material**. Purifier material is commonly brown/rust or blue/green wood chips or granular material. It is typically associated with a distinctive sulfur-like odor. Other colors may be present.

Olfactory Descriptors

- Use terms such as “tar-like odor” or “naphthalene-like odor” or “fuel oil-like odor” that provide a qualitative description (opinion) as to the possible source of the odor.
- Use modifiers such as strong, moderate, faint to indicate intensity of the observed odor.

DNAPL/LNAPL

- A jar shake test should be performed to identify and determine whether observed tar/free-phase product is either denser or lighter than water. In addition, MGP residues can include both light and dense phases - this test can help determine if both light and dense phase materials are present at a particular location.

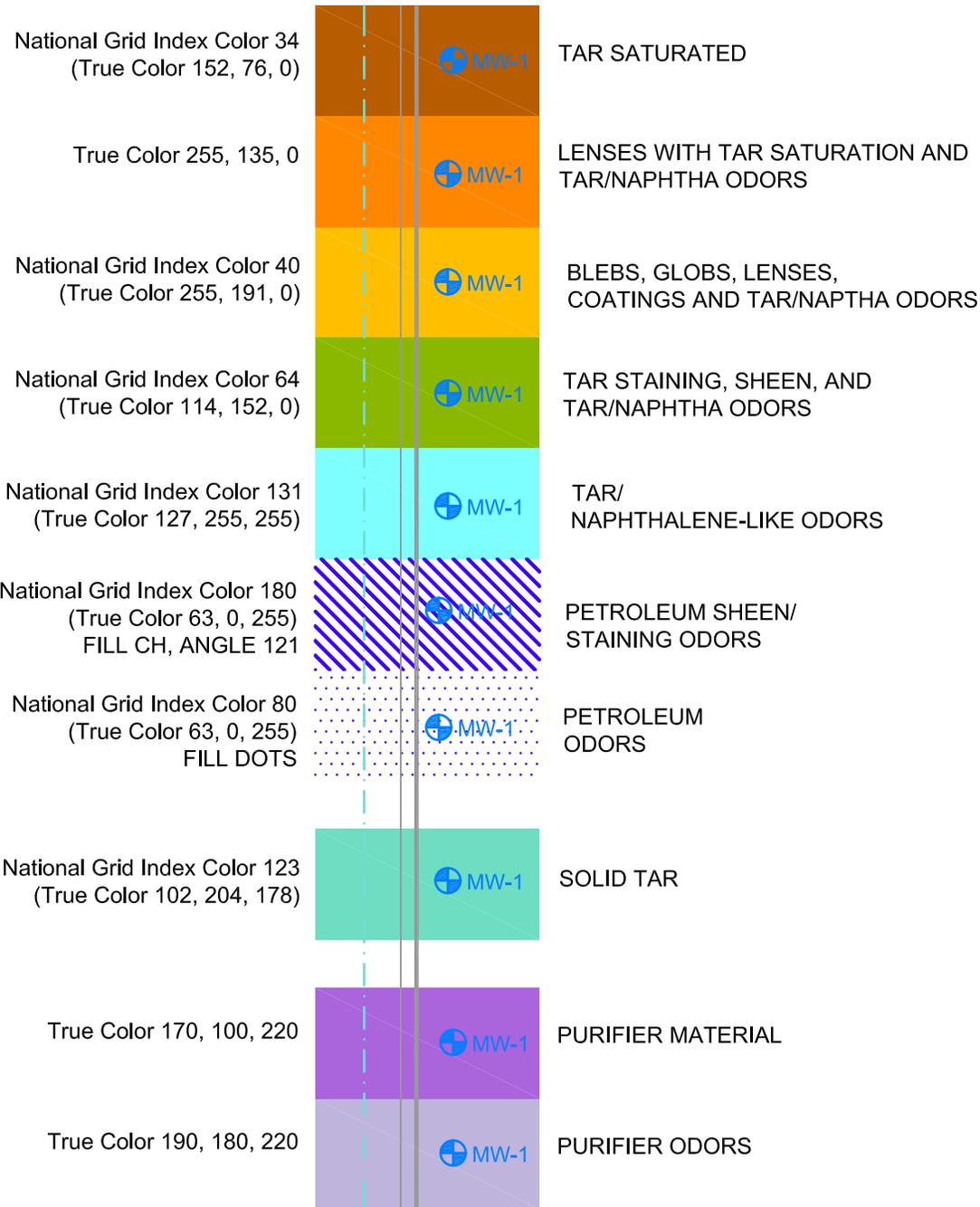
Viscosity of Free-Phase Product – If free-phase product/tar is present a qualitative description

of viscosity should be made. Descriptors such as:

- Highly viscous (e.g. taffy-like)
- Viscous (e.g. No. 6 fuel oil or bunker crude like)
- Low viscosity (e.g. No. 2 fuel oil like)

GROUNDWATER SAMPLING OBSERVATIONS

- Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. that made during sampling of groundwater are to be included in the groundwater sample collection log.



NOTE:

THE TERMS CORRESPONDING TO THE COLOR SCHEMES ON THIS PAGE ARE DESCRIBED ON THE ATTACHED PAGE. THESE DESCRIPTIONS SHOULD BE MATCHED TO THE ABOVE COLOR SCHEME WHEN PREPARING DRAWINGS AND FIGURES DEPICTING THE PHYSICALLY-OBSERVED IMPACTS.

NATIONAL GRID STANDARDS

**COLORS FOR
NATIONAL GRID IMPACTS**

nationalgrid

July 2008

Figure 1