ATTACHMENT 9 - Operations and Maintenance Plan

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Section 1 - Introduction

The remediation activities conducted at Tennessee Gas Pipeline Company (TGP) Compressor Station 254 in Nassau, New York between May and October 1995 addressed the site-wide soil and drainline remediation issues and satisfied the requirements of the Order on Consent (#A4-0329-9503, dated September 6, 1995) between TGP and the New York State Department of Environmental Conservation (NYSDEC). However, in one area, the cleanup criteria could not be achieved due to subsurface concerns and limitations, resulting in the need to implement post-remediation engineering controls. The operation and maintenance of these controls, plus specific drainline excavation and long-term site maintenance activities, are addressed by this Operations and Maintenance Plan (O&M Plan).

This O&M Plan summarizes information for the various areas of interest and provides an overview of the required post-remediation operations and maintenance activities. The information contained herein supplements existing protocols, procedures, and documentation that are currently utilized by station personnel, including station mapping, maintenance procedures, health and safety requirements, etc. However, given the general nature of this plan, appropriate personnel within the TGP Division F office in Enfield, Connecticut, will be consulted as needed when implementing this plan. In addition, reference should be made to the *Final Documentation Report* regarding the extent of the remediation activities conducted between May and October 1995 in each remediation area. This plan additionally requires documentation of operation and maintenance activities. Copies of such documentation will be maintained in the Station records as an attachment of the *Final Documentation Report*, and will be provided to the TGP Division F Environmental Supervisor and the NYSDEC. The NYSDEC contact is Mr. Gerald Rider, Chief, Operation and Maintenance Section, Bureau of Hazardous Site Control, Division of Environmental Remediation, 50 Wolf Road, Room 252, Albany, New York, 12233-7010.

Protocols and areas addressed by this plan include:

- Protocols for future excavation of remediated drainlines or drainline components addressed by this remediation program;
- Protocols for future excavation in the ART Area;
- General site inspection and maintenance requirements related to Drainage Area A and the Service Road;
- Protocols for sampling and analysis of groundwater monitoring well MW-3 for total polychlorinated biphenyls (PCBs); and
- Protocols for sampling and analysis of Kinderhook Creek surface water for total PCBs at locations adjacent to and upstream of former Seeps E01 and E02 in Drainage Area A; and

Each of these activities is further addressed in the following sections.

Section 2 - Drainline A

2.1 Background

Drainline System A was addressed as part of remediation activities conducted between May and October 1995. Details regarding the remediation of Drainline A is provided in Section 4 of the *Final Documentation Report*. A summary of the post-remedial status of the drainline is provided below.

- **Drainline** A - three parallel branches of Drainline A extend from Access Points 4A, 5A, and 6A in the Auxiliary Building A Area and connect to a single perpendicular drainline at Manholes MH4, MH5, and MH6, respectively. A single branch of Drainline A continues in a northeastern direction from Manhole MH6 to a final location at Manhole MH7. Drainline A was inactive at the time of remediation and remediation activities involved the in-place abandonment of the drainline. Sediments and liquids were removed from the manholes and 1,000-gallon concrete holding tank and the interior of the drainlines and these structures were filled with grout or bentonite slurry to prevent the potential for migration of PCBs via this drainline.

2.2 Work Adjacent to Abandoned Drainlines

The general guidelines for excavation and disposal of drainline components and sub-base materials will include the following procedures.

Prior to performing future excavation activities in the vicinity of Drainline A, Figure 1 (and any other available information) will be reviewed by station personnel to determine if the subject drainline or drainline components may be encountered. In the event that excavation in the immediate vicinity of Drainline A is necessary, the TGP Division F Environmental Supervisor will be notified. If conditions allow (i.e., non-emergency situation) this notification will be made prior to excavation. Notification will include the scope, nature, status, and location of the proposed work.

To the extent possible, excavation in the immediate vicinity of Drainline A components will be avoided. However, in the event that excavation is necessary, TGP personnel will take into account and address any impacts on the remedy. For example, if a section of drainline is removed, the ends of the drainline that remain in place will be inspected to verify that the integrity of the grout remains intact. If necessary, the station personnel will place additional grout in the end of the drainline. Additionally, if it becomes necessary to remove a drainline component as part of excavation activities, the drainline component will be removed and will conservatively be subject to off-site disposal at a facility permitted in accordance with the Toxic Substances Control Act (TSCA) and other applicable regulations.

Documentation of the extent of drainline excavation and disposal method will be prepared. Copies of such documentation will be maintained in the station records as an attachment to the *Final Documentation Report*, and will be provided to the TGP Division F Environmental Supervisor and the NYSDEC.

Section 3 - Air Receiver Tank Area

3.1 Background

The ART area is located on the southeast side of the Auxiliary Building (Figure 1). This area was subject to remediation based on the presence of PCBs in the surface and subsurface soils. Remediation consisted

of the delineation and excavation of soils containing PCBs above the cleanup goal, followed by verification sampling to confirm the extent of remediation. The specific details regarding the remediation of this area are provided in Section 3.3.3 of the *Final Documentation Report*.

Because of subsurface limitations that prevented further excavation on the south side of the ART area, a subsurface low-permeability cap was installed. Due to concerns with the stability of the excavation and the stability of the foundation, as well as the presence of subsurface utilities it was not possible to excavate additional material. With the NYSDEC's approval the cap was placed within the entire area on the south side of the ARTs as shown on Figure 1. The capping system consisted of the placement of a geotextile at the base of the excavation followed by backfilling using a "flowable fill" to a depth of 42 inches below grade. A geomembrane liner was then placed immediately above it and the remainder of the excavation was then backfilled using common backfill materials.

3.2 Work Adjacent to Cap Area

The general guidelines for performing excavation activities in the vicinity of the subsurface low-permeability cap will include the following procedures.

Due to the presence of PCBs above 10 ppm below the cap, future excavation in this area will be performed only after consultation with the Division F Environmental Supervisor (except in an emergency situation).

To the extent possible, excavation in the immediate vicinity of the cap will be avoided. However, in the event that excavation is necessary, TGP personnel will take into account and address any impacts on the remedy. If excavation is performed in the materials above the geotextile, then the area will be restored to match original conditions to maintain the integrity of the cap. Any soil removed from below the geotextile will be subject to off-site disposal at a facility permitted in accordance with TSCA and other applicable regulations.

Any excavation activities performed in the vicinity of the capped area and disposal method for any soils removed from below the geotextile will be appropriately documented. Copies of such documentation will be maintained in the station records as an attachment to the *Final Documentation Report*, and will be provided to the TGP Division F Environmental Supervisor and the NYSDEC.

Section 4 - Drainage Area A

4.1 Background

Drainage Area A is located to the west of the station adjacent to Kinderhook Creek. This area was subject to remediation based on the presence of PCBs in the surface and subsurface soils. Remediation consisted of the delineation and excavation of soils containing PCBs above the cleanup goal, followed by verification sampling to confirm the extent of remediation. The specific details regarding the remediation of this area are provided in Section 3.3.4 of the *Final Documentation Report*. Additionally, as part of restoration, a portion of the area along the bank of the Kinderhook Creek was covered with a geotextile liner and rip rap to control bank erosion (Figure 1).

4.2 Inspection Activities

This area will be inspected in the spring of each year by station personnel. The purpose of this inspection will be to observe that the rip-rap is providing an adequate erosion control measure. Documentation of the

performance of the inspection will be maintained in the station records as an attachment to the *Final Documentation Report*, and will be provided to the TGP Division F Environmental Supervisor and the NYSDEC. In addition, if inspection activities result in the identification of a deficient condition, documentation of any repairs and/or changes will be similarly maintained.

Section 5 - Service Road Area

5.1 Background

In general, remediation in the Service Road area consisted of the excavation of soils in the two identified areas (Figure 3-1 of the *Final Documentation Report*). These areas were excavated to a depth of 6 inches and backfilled with "clean" soil. The perimeter fence was also relocated (as shown on Figure 1-1 of the *Final Documentation Report*) to restrict access to the area. Additionally, the entire length of the southern Service Road was then covered with 12 inches of run-of-crusher stone.

5.2 Inspection Activities

The run-of-crusher stone placed on the service road area will be inspected in the spring of each year by station personnel. The purpose of this inspection will be to observe that areal coverage and thickness of the stone layer are adequate. Documentation of the performance of the inspection will be maintained in the station records as an attachment to the *Final Documentation Report*, and will be provided to the TGP Division F Environmental Supervisor and the NYSDEC. In addition, if inspection activities result in the identification of a deficient condition, documentation of any repairs and/or changes will be similarly maintained.

Section 6 - Groundwater and Kinderhook Creek Monitoring

In addition to the specific operational and maintenance considerations identified in the previous sections, monitoring of groundwater at monitoring well MW-3 and surface water in Kinderhook Creek will be conducted. The NYSDEC requested that monitoring well MW-3 not be abandoned so it could be utilized to monitor the effectiveness of the capped area. Monitoring well MW-3 is located downgradient of the ART area (Figure 1). Additionally, the NYSDEC requested that surface water monitoring be performed in Kinderhook Creek as a means of monitoring the former bank seeps (E01 and E02) in Drainage Area A (Figure 1). These monitoring activities will be performed as described below.

For a period of five years, groundwater samples will be collected annually from MW-3 (Figure 1). Additionally, for a single sampling event surface water samples will be collected at two locations within Kinderhook Creek near Seeps E01 and E02, and at one location within Kinderhook Creek upstream of the rip-rap area (to represent background conditions) (Figure 1).

The samples will be collected and analyzed for total PCBs (filtered) following the procedures specified in the *Quality Assurance Project Plan for Soil/Drainline Remediation, New York State Compressor Stations* (QAPP, BBL May 1995). The samples will be analyzed using USEPA Method 608 at a reporting limit of 1.0 $\mu g/L$.

Each sampling event shall be documented in a letter report including a brief description of activities and sample results. Copies of such documentation will be maintained in the station records as an attachment to the *Final Documentation Report*, and will be provided to the Division F Environmental Supervisor and the NYSDEC.

At the end of the five year monitoring period for groundwater and at the end of the sampling event for surface water, any further need to monitor will be evaluated by reviewing the results of the monitoring reports. A determination whether to implement additional monitoring will be made in consultation with the NYSDEC.