State of Ohio
Environmental Protection Agency

Division of Emergency and Remedial Response

Van Ness Property Site Assessment Report

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Governor Bob Taft
Director Joseph Koncelik

OHIO ENVIRONMENTAL PROTECTION AGENCY (OHIO EPA)

DIVISION OF EMERGENCY & REMEDIAL RESPONSE (DERR)

SITE ASSESSMENT REPORT

Van Ness Property
Licking County
145-002323-001

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EXECUTIVE SUMMARY

Two petroleum pipelines cross the Van Ness and Montgomery properties, a 10-inch diameter pipeline and a 6-inch diameter pipeline. During road construction activities in October 1956, a highway contractor ruptured the 10-inch diameter crude oil pipeline where the pipeline crosses under Chinney Run on the north side of the State Route (SR) 37 bridge in Granville Township, Licking County. According to a pipeline inspection report from the Ohio Oil Company, the pipeline owner at the time, an estimated 1096 barrels (46,032 gallons) of crude oil were released from the ruptured pipeline.

In 1992 and again in 2004, the current property owner performed unauthorized excavation in Chinney Run to uncover field tile outlets to the stream to facilitate drainage from adjacent agricultural fields. The excavation activities encountered and released residual petroleum remaining from the 1956 pipeline rupture to Chinney Run. Ohio EPA emergency response personnel responded to these incidents and documented recovery efforts by the pipeline owner, Ashland Oil Company in 1992 and Marathon-Ashland Pipe Line, LLC (MAPL) in 2004. During the 2004 event, petroleum entered Raccoon Creek causing an oil sheen that was observed downstream in the village of Granville. Ohio EPA also responded to a 1987 pipeline leak on the Van Ness property east of Chinney Run and during pipeline maintenance activities at the location of the 1987 leak in 2003.

The Ohio EPA Central District Office (CDO), Division of Emergency and Remedial Response (DERR) conducted a field investigation of the Van Ness property and areas of the adjacent Montgomery property during July 2005 and February through April 2006, in response to the village of Granville's concerns over the proximity of the residual petroleum contamination to their municipal wellfield. Additionally, during the field investigation, Ohio EPA learned that plans are in place for the widening and improvement of SR 37 at the Van Ness property in the vicinity of the 1956 pipeline rupture.

The first phase of the field investigation, conducted in July 2005, consisted of collecting soil and ground water grab samples with the Ohio EPA Site Inspection Field Unit (SIFU) Geoprobe® rig from the vicinity of the pipeline crossing at Chinney Run. The samples were collected to assess subsurface contamination in the immediate vicinity of Chinney Run and the pipeline crossing. Ohio EPA did not have access to sample in the planted agricultural fields at that time.

The second phase of the field investigation was conducted during the winter and early spring of 2006, prior to planting. The second phase consisted of collecting additional soil samples and installing and sampling temporary monitoring wells with the Geoprobe® rig in the agricultural fields and along the pipelines and collecting surface water samples and hand augered sediment samples from Chinney Run. The temporary wells were placed in the agricultural fields to determine ground water flow direction and if ground water contamination was emanating from Chinney Run across the agricultural fields toward the village wellfield.

Samples collected from within the pipeline right-of-way were collected under the oversight of

MAPL, the owner of the pipelines, and were split with Arcadis G&M, Inc. of Dublin, Ohio, MAPL's environmental consultant at MAPL's request.

Sample results from the 2005 – 2006 field investigation indicate that petroleum contamination is present along the banks and beneath the streambed of Chinney Run from the pipeline crossing downstream and gradually diminishes toward its confluence with Raccoon Creek. Petroleum contamination does not appear, however, to be emanating from Chinney Run or the pipelines and across the agricultural fields toward the village wellfield.

Dredging or excavating in Chinney Run to expose field tile outlets will likely again cause the release of oil to the waters of Chinney Run and Raccoon Creek. Ohio EPA CDO DERR is referring this site to the Ohio EPA Division of Surface Water (DSW) and U.S. EPA (Oil Pollution Act of 1990) for remedial evaluation under their regulatory authority.

Highway improvements for SR 37 including widening the highway, constructing a new frontage road along the north side of the highway and constructing a new bridge crossing over Chinney Run are proposed for 2007. These activities may potentially cause the release of residual petroleum to Chinney Run depending on their location. Therefore as long as residual contamination remains, work performed in conjunction with the proposed highway construction or pipeline maintenance activities along Chinney Run should be performed with caution to prevent the release of residual petroleum to the stream and with measures in place to contain, handle and properly dispose of contaminated soil or ground water if encountered.

1.0. INTRODUCTION

Ohio EPA conducted a field investigation of the Van Ness property and a portion of the adjacent Montgomery property in Granville Township, Licking County during July 2005 and February - March 2006. The purpose of the field investigation was to assess the residual crude oil contamination in the subsurface remaining from a spill that occurred in 1956, to determine if ground water contamination was present and constituted a potential threat to the village of Granville municipal wellfield and to determine if a continuing release to Chinney Run was present.

The pipeline was ruptured by a highway subcontractor on October 10, 1956 during bridge construction activities being undertaken by the Ohio Department of Transportation (ODOT) on SR 37 / 161 (now SR 37). Subsequent stream dredging activities performed by the landowner in 1992 and 2004 to expose field tile outlets in Chinney Run have caused releases of residual petroleum to enter Chinney Run. Ohio EPA emergency response personnel responded to these petroleum releases to Chinney Run in 1992 and 2004. Ohio EPA also responded to a pipeline leak on the Van Ness property east of Chinney Run in 1987 and during maintenance activities conducted on the pipeline in 2003.

In November 2004, the village of Granville contacted Ohio EPA asking that Ohio EPA investigate and, if necessary, remediate the remaining crude oil contamination due to its proximity to their

wellfield. The 1956 pipeline rupture location is approximately 1.5 miles west of the village wellfield and approximately one half mile west of the delineated five-year time of travel for the wellfield.

Ohio EPA obtained access agreements from Mr. Daniel Van Ness and Mrs. Eva Montgomery to conduct field work on the Van Ness and Montgomery properties, respectively. Ohio EPA also obtained a right-of-way work permit from ODOT to complete borings located in the right-of-way of SR 37. Ohio EPA conducted the first, limited phase of work in July 2005, and conducted a second phase of work in February through April 2006.

Soil, ground water, sediment and surface water samples were collected at the site. The methods, results, conclusions and recommendations of Ohio EPA's field investigation are presented in this report.

2.0. BACKGROUND

Site Name: Van Ness Property **Alias:**

DERR I.D. No.: 145-2323-001 **U.S. EPA I.D. No.:**

District: Central District **County:** Licking

Site Address: 3440 Worthington Road SW, Granville, OH 43023

Directions to Site: From Columbus, proceed east on Interstate Route 70 to State Route 37 (SR 37). Exit north on SR 37 toward Granville and follow SR 37 west from Granville. The site is on the north side of the road approximately one half mile west of County Route 539-A. The site is across the road from the Raccoon Valley Golf Course.

Latitude: N 40° 04' 14" **Longitude:** W 82° 33' 28"

2.1. Map(s) Attached (List): Figure 1 - Site Location Map,
Figures 2 through 4 - Sample Location Maps, Figure 5 – Potentiometric Surface Map

2.2. Site Description

The Van Ness property consists of two parcels owned by brothers Daniel and Talbot Van Ness comprising approximately 29 acres in Granville Township, Licking County on the north side of SR 37 between County Road 539-A and Morse Road. The site is bordered on the west and north by Chinney Run, a tributary of Raccoon Creek, and on the north by Raccoon Creek. The site has been and is currently used for agriculture. The adjacent property to the west and north of the Van Ness property is owned by Eva Montgomery. The common property line between the Van Ness and Montgomery properties generally follows the course of Chinney Run. The Van Ness and Montgomery properties are farmed by the Van Ness brothers. The surrounding contiguous properties on the east, north and west are also agricultural. A bicycle trail occupies a former railroad right-of-way on the north side of Raccoon Creek. The site is bordered by SR 37 on the south and the Raccoon Valley Golf Club is located on the south side of SR 37.

2.3. Regulatory Information

Ohio EPA CDO-DERR initiated site assessment activities in response to the March 2004 pipeline release incident and at the request of the village of Granville due to their concern regarding the proximity of the release to their wellfield. Results of Ohio EPA's field investigation indicate that the release is not occurring on a continuous basis and also does not appear to be a threat to the village wellfield.

Ohio EPA CDO DERR is referring this site to Ohio EPA DSW for remedial evaluation under their regulatory authority over streams and to U.S. EPA under the provisions of the Oil Pollution Act of 1990. See Section 6.0 Conclusions and Recommendations of this report and Attachment 1-Determination of Regulatory Authority Checklist

Additionally, Ohio EPA CDO DERR notified the U.S. Army Corp of Engineers (ACOE) of the stream dredging activities following the March 2004 release. ACOE sent a letter to Daniel Van Ness on April 14, 2004 stating that a permit is required prior to placement of fill or dredged material into waters of the United States, the activities were not authorized by the issuance of a permit, and to cease further work in the stream.

2.4. Site History

Two petroleum pipelines cross the Van Ness and Montgomery properties, a 10-inch diameter pipeline and a 6-inch diameter pipeline. The pipelines were owned by the Ohio Oil Company and were used to carry crude oil. The Ohio Oil Company became the Marathon Oil Company in 1962. The pipelines were later acquired by Ashland Oil Company (Ohio River Pipe Line Co. Division) and were used to transport refined petroleum product only. Ashland and Marathon merged in 1998 and the pipelines were owned by the Marathon-Ashland Pipe Line Company, LLC, which then became the Marathon Pipeline Company, LLC, in 2005.

During highway bridge construction activities in October 1956, an ODOT subcontractor ruptured the 10-inch diameter crude oil pipeline that was buried beneath the streambed at Chinney Run. The pipeline rupture occurred in the stream channel approximately 200 feet north of the highway bridge over Chinney Run. According to a pipeline inspection report from the Ohio Oil Company, approximately 1096 barrels (46,032 gallons) of crude oil were released from the ruptured pipeline. Subsequent unauthorized stream dredging activities in Chinney Run by the landowner have caused the release of residual petroleum from the 1956 spill to enter Chinney Run and Raccoon Creek. The location of the 1956 pipeline break is approximately one half mile west of the delineated 5-year time of travel for the village of Granville wellfield.

Ohio EPA emergency response personnel have responded to petroleum releases to Chinney Run in 1992 and 2004. The 2004 spill was reported when an oil sheen was observed in Raccoon Creek in the village of Granville. The village expressed its concern regarding the site to Ohio EPA after the 2004 incident due to the proximity of the village's well head protection area. Ohio EPA also responded to a pipeline leak in 1987 in which an estimated 150 gallons of fuel oil leaked through a corrosion pit in the pipeline and in 2003 when a section of the 10-inch pipeline in the vicinity of the 1987 leak was being replaced.

Ohio EPA CDO-DERR emergency response personnel have responded to incidents on the Van Ness property for the following occasions:

November 10, 1987 - During a routine line inspection, Ashland Oil Co. reported a spill from the 10-inch pipeline on the north side of SR 37 across from the entrance drive to the Raccoon Valley Golf Club. The spill occurred east of Chinney Run and the 1956 pipeline rupture. The pipeline at that time was used to transport refined petroleum product. An estimated 150 gallons of No. 2 fuel oil had leaked from a welded repair of a corrosion pit on the top of the pipe. The damaged area of the pipe was repaired and no further action was required.

January 3, 1992 – Daniel Van Ness was dredging in Chinney Run to lower the streambed and expose field tile outlets to facilitate drainage when he encountered petroleum-contaminated soils releasing oil to the stream. Ashland Oil reported the release and placed absorbent booms in Chinney Run to contain the release.

May 6, 2003 - MAPL was conducting routine maintenance in the vicinity of the November 1987 spill incident. Daniel Van Ness observed stained soils in the excavation and notified Ohio EPA. MAPL was replacing a section of the 10-inch pipeline. Ground water was pumped from the excavation by BBU Services to facilitate the repairs and was shipped off site for disposal. Petroleum-contaminated soil was excavated and shipped off site for proper disposal. MAPL retained BHE Environmental, Inc. of Cincinnati, Ohio to collect soil samples for disposal characterization.

March 25, 2004 - Daniel Van Ness was dredging in Chinney Run to expose field tile outlets and encountered petroleum-contaminated soils. The dredging caused an oil sheen that migrated downstream and entered Raccoon Creek. The oil sheen was observed in the village of Granville and the Granville fire chief notified Ohio EPA. MAPL responded to the release by placing absorbent booms in Chinney Run to prevent the oil sheen from entering Raccoon Creek. The unauthorized dredging incident was reported to the U.S. Army Corp of Engineers (ACOE) and was followed up by an order from ACOE to Daniel Van Ness to cease and desist further work in the stream.

In addition to Ohio EPA CDO-DERR site visits, Ohio EPA CDO, Division of Surface Water (DSW) personnel visited the site and conducted the following action:

January 19, 2005 – DSW conducted a site visit on January 19, 2005 and noted the presence of excavated materials along the banks of Chinney Run. Ohio EPA DSW subsequently sent a letter to Talbot and Daniel Van Ness on January 28, 2005 requesting submission of a remediation plan within 30 days to address measures for ensuring that no future illicit discharges to waters of the state occur and addressing stabilization of the stream banks. A verbal extension for submitting the plan was later granted while Ohio EPA was conducting field investigation activities.

2.5 Redevelopment Activities

ODOT is planning a major reconstruction of SR 37 in the vicinity of the Van Ness property in 2007. The reconstruction will include road widening, bridge replacement and construction of a new frontage road. The Van Ness property has been used for agriculture since before the 1956 spill. Future use of the property, excluding the highway improvements, is not known.

2.6. Previous Field Work

During the 1992 and 2004 release incidents, Ashland and MAPL, respectively, responded by placing absorbent booms in Chinney Run to collect oil on the water surface.

MAPL replaced a section of the 10-inch pipeline in May 2003 in the vicinity of the 1987 pipeline leak. The 1987 incident was reported as a release of approximately 150 gallons of No. 2 fuel oil. MAPL retained BBU Services to pump, containerize and dispose of contaminated ground water from the excavation to allow the pipeline maintenance to proceed. MAPL retained BHE Environmental to collect soil samples from the pipeline excavation for disposal characterization and to document site conditions.

BHE collected five soil samples during the 2003 repair; four from the excavation bottom and sidewalls and one from the excavated soil stockpile. One sidewall soil sample had low concentrations of ethylbenzene, xylenes and naphthalene. One sample, collected from the soil stockpile, yielded low concentrations of polynuclear aromatic hydrocarbons (PAHs). One PAH, benzo(a)pyrene was detected at a concentration of 180 ug/kg; slightly higher than the U.S. EPA preliminary remediation goal (PRG) of 62 ug/kg for direct contact with residential soils but less than the PRG for direct contact with industrial soils of 210 ug/kg. The soil samples also had detections of total petroleum hydrocarbons (TPH) including middle distillate range (C10 – C20) concentrations ranging from non-detect up to 2200 mg/kg, or slightly above the Ohio Bureau of Underground Storage Tanks (BUSTR) action level of 2000 mg/kg for Soil Class I, or more permeable soils.

2.7. Topography, Geology, Hydrogeology and Hydrology

The Van Ness property is located in Granville Township in central Licking County near the transition between the Till Plains and Glaciated Appalachian Plateaus physiographic provinces (Brockman). The site is located in the floodplain of Raccoon Creek, a tributary of the Licking River. Raccoon Creek occupies an outwash filled buried valley covered with Recent alluvium in the floodplain and Wisconsinan Age outwash terraces along the valley walls. Bedrock in the vicinity of the site consists of Mississippian Age shales and sandstones with the Raccoon Shale underlying the buried valley and interbedded sandstones, siltstones and shales comprising the bedrock hills (Bork and Malcuit). Surficial deposits of the surrounding uplands, including the bedrock hills to the north and south, consist of tills of the Wisconsinan Age Mt. Liberty ground and end moraine (Forsythe). Soils at the site consist primarily of the Stonelick Series developed upon the alluvial flood plain deposits

Topography across the site is essentially flat with local relief provided by the stream channels of Chinney Run, which forms the western and northwestern boundaries of the property, and Raccoon Creek, which forms the northern boundary of the site. Raccoon Creek has been

channelized and straightened in the past.

Ground water from the buried valley aquifer is used by the village of Granville for their drinking water supply. The village wellfield consists of four supply wells located in the Raccoon Valley flood plain approximately 1.5 miles east of the 1956 pipeline rupture location. The wells are completed in sand and gravel at depths of 95 to 109 feet below ground surface. They produce approximately 650,000 gallons per day and supply the villages of Granville and Alexandria. The western edge of the delineated source water protection area's outer protection zone, based on 5-year time of travel, is located approximately one half mile east of the 1956 pipeline rupture.

Geotechnical borings completed by ODOT in the vicinity of the SR 37 bridge over Chinney Run in 2004 primarily encountered silt, sand and gravel in depths up to 130 feet below ground surface. Bedrock was not encountered in any of the ODOT borings.

Ohio EPA completed soil borings in July 2005, and February 2006, to characterize residual petroleum contamination in subsurface soil and ground water. The borings were completed to depths of eight to 16 feet below ground surface. The borings encountered two to five feet of silt overlying sand and gravel in the vicinity of the pipeline crossing at Chinney Run and five to eight feet of silt and clayey silt to silty clay overlying sand and gravel in the field east and south of Chinney Run. One, boring, TW-05, was completed in what appears to be a former alluvial channel on the Montgomery property northwest of Chinney Run.

Five temporary wells were installed at the site in 2006 as part of Ohio EPA's field investigation. Depth to ground water as measured in the temporary wells on March 8, 2006 varied from approximately 3 to 6 feet below ground surface. Ground water flow direction was to the northeast toward Raccoon Creek with a hydraulic gradient of approximately 0.005 feet per foot. Table 1 presents the ground water elevations and Figure 5 displays the potentiometric surface map for March 8, 2006.

2.8. Land Use and Demographic Information

The Van Ness property and adjacent properties to the north, east and west are currently and have been historically used for agriculture. The Raccoon Valley Golf Club is located across SR 37 to the south. A bicycle trail is located along the north bank of Raccoon Creek on a former railroad right-of-way. Residences are located north of Raccoon Creek along Raccoon Valley Road. The village of Granville is located approximately 1.5 miles east of the confluence of Chinney Run and Raccoon Creek.

3.0. METHODOLOGY

3.1. Field Sampling Locations and Rationale

Ohio EPA collected soil, sediment, surface water and ground water samples at the site during July 2005 and February through March 2006 at the locations displayed on Figures 2 through 4. Soil and ground water samples were collected in the vicinity of the Chinney Run pipeline crossing with Ohio EPA's Geoprobe® rig on July 12, 2005. Surface water and sediment samples were collected from Chinney Run on February 7, 2006. Soil borings and temporary wells were installed on February 27 and 28, 2006. Ground water samples were collected from the temporary wells on March 8, 2006. Soil and ground water samples collected from locations within the MAPL pipeline right-of-way were split with MAPL's environmental consultant, Arcadis G&M, Inc. of Dublin, Ohio. Figures 2 though 4 display the field investigation sample locations. Figure 5 displays the temporary well locations and potentiometric surface for March 8, 2006.

Field samples were submitted to Ohio EPA DERR's contract laboratory, Kemron Environmental Services, Inc. of Marietta, Ohio for analysis of constituents of concern. Soil, sediment, surface water and ground water samples were analyzed for volatile organic compounds (VOCs) using US EPA SW-846 Method 8260A or 8260B. VOCs of primary concern were benzene, ethylbenzene, toluene and xylenes (BTEX) and n-hexane which may be present in crude petroleum or petroleum products. Additional compounds, such as sec-butylbenzene which may also be found in petroleum, are also included in the VOC scan. All samples were also analyzed for semi-volatile organic compounds (SVOCs) by US EPA SW-846 Method 8270C to determine the presence of PAHs and cresols (methylphenols). The laboratory reports, except for the July 2005 report, present analytical results for the full list of SVOCs. The July 2005 laboratory report presents results for PAHs and cresols, only. Laboratory detection limits for several PAH compounds exceeded screening level values as discussed in Section 4.2.

In addition to VOC and SVOC analyses, soil and sediment samples were also analyzed for TPH in the light (C6 – C12), medium (C10 – C20) and heavy (C20 – C34) distillate fractions using U.S. EPA SW-846 Method 8015 or 8015B.

Phase I - July 2005 – On July 12, 2005, five borings, designated GP-01 through GP-05, were completed at the site. Three borings were completed in the pipeline right-of-way near Chinney Run to assess potential contamination along the pipelines and stream bank in the vicinity of the 1956 release and one boring was completed along a dirt access road along Chinney Run approximately 200 feet downstream of the 1956 pipeline rupture location. One boring was also located in the SR 37 right-of-way approximately 300 feet east of Chinney Run along the 10-inch pipeline in the vicinity of the 1987 pipeline leak. Soil and ground water samples were collected from the borings.

MAPL representatives were on site to locate the pipelines, approve the boring locations and oversee completion of the borings within the pipeline right-of-way. Per the MAPL field

representative, the borings could be located no closer than approximately 10 feet from the pipelines.

Ohio EPA did not complete borings in the agricultural fields during this sampling event to avoid damage to standing crops. Because Chinney Run was dry at this time, surface water and sediment samples were not collected.

Phase II - February - April 2006 – Four hand auger samples, designated SO-1 through SO-4 were collected from the streambed of Chinney Run downstream of the pipeline crossing to the confluence with Raccoon Creek on February 7, 2006. The sediment samples were collected to determine how far downstream from the pipeline crossing the petroleum had migrated. Two surface water samples, SW-1 and SW-2, were also collected on February 7, 2006, one sample upstream from the pipeline crossing and one sample downstream of the pipeline crossing in the vicinity of sediment sample SO-1. The surface water samples were collected to determine if measurable concentrations of petroleum constituents were currently being released into surface water.

Five soil borings completed as temporary monitoring wells, designated TW-01 through TW-05, were completed on February 27 and 28, 2006, to assess subsurface conditions beneath the agricultural fields across the site away from Chinney Run and the pipelines. The locations were selected to determine if ground water contamination was emanating from the vicinity of Chinney Run and the pipelines and across the agricultural fields toward the village wellfield or if the subsurface contamination was localized along Chinney Run and the pipelines. An additional three soil borings, GP-06 through GP-08, were completed in the vicinity of the pipelines (within 10 feet) to determine if subsurface contamination was present due to migration along the pipelines. The five temporary wells along with a field tile discharge to Raccoon Creek were sampled on March 8, 2006. The temporary wells were removed and the borings were sealed on April 11, 2006.

3.2. Field Sampling Methodologies

Soil Samples

Soil samples were collected in four feet intervals with Ohio EPA's Geoprobe® rig using a Macrocore® (March 2005) or Dual Tube® sampler (February 2006) with dedicated polyacetate liners. Soil borings designated TW-01 through TW-05 were completed as temporary monitoring wells to determine ground water elevations and collect ground water samples. Each interval was described in a field notebook and screened with a photoionization detector (PID). One soil sample was submitted from each boring based on PID reading, visual evidence of contamination, or stratigraphic position relative to the water table or pipeline. The sample was split into two portions, one portion was placed in a sealable plastic bag for headspace screening and another portion was placed in clean laboratory-supplied glassware for laboratory analysis.

Sediment Samples

Sediment samples were collected with a hand auger at four locations as noted on the attached figure. The samples were collected within the stream channel on point bars and sand bars that were just above the water surface. The hand auger borings were advanced to a depth of approximately 30 inches below the streambed. A portion of sample from the bottom of the borehole was screened with a PID and another portion was placed into laboratory-supplied glassware for laboratory analysis.

Surface Water Samples

Surface water samples were collected in the same general locations as the stream sediment samples. The laboratory-supplied glassware was filled at the approximate center of the stream by slowly immersing the containers below the water surface to ensure that the preservative was not lost.

Ground Water Samples

Ground water samples were collected on July 12, 2005 and March 8, 2006. The samples obtained in July 2005 were collected in the vicinity of the pipelines from an open borehole. The samples obtained during March 2006 were collected from temporary monitoring wells installed during February 2006.

July 12, 2005 – At locations GP-01 through GP-05, Geoprobe® soil borings were advanced to 12 to 16 feet below ground surface with a Macrocore® sampler. After the soil samples were logged and screened, a second borehole located approximately one foot from the original borehole was advanced to the same approximate depth and a ground water sample was collected by inserting a length of dedicated tubing with a check valve into the Geoprobe® rods that contained a sleeved screen and sampling the ground water that entered the screened interval when the sleeve was withdrawn. The tubing and check valve were manually pumped to allow the ground water to discharge into the laboratory glassware.

March 8, 2006 – During February 27-28, 2006, at locations TW-01 through TW-05, borings were advanced using a dual tube sampler and completed as temporary monitoring wells. The temporary wells were constructed of one and a quarter-inch diameter PVC casing with a six feet screened interval. The borehole's annular space was filled with a quartz sand pack to approximately two to four feet below ground surface. The remainder of the borehole was filled to ground surface with granular bentonite. The temporary wells were developed by surging and removing water with a peristaltic pump. Approximately 1.5 to 2 gallons of water were removed from each well during development.

The temporary wells were sampled on March 8, 2006. Prior to purging and sampling, the depth to water was measured at each temporary well with an electronic water level gauge. The temporary wells were purged with a peristaltic pump removing approximately 1.5 gallons of water per well. The temporary wells were then sampled by using a disposable bailer or peristaltic pump set on a low setting to prevent agitation of the sample. The samples were collected in laboratory-supplied glassware. A grab sample was also collected from a field tile discharge to Raccoon Creek.

After the ground water samples were collected, the elevations of the tops of the temporary wells were determined via differential leveling relative to an established benchmark in the SR 37 right-of-way. The temporary wells were subsequently abandoned on April 11, 2006 by removing the PVC casings and screens and backfilling the boreholes to the ground surface with granular bentonite.

4.0. RESULTS

4.1. Field Sampling Results

Sample results are displayed on Tables 2 through 7 and are summarized below.

Soil – Soils collected from Borings GP-02 and GP-04 during July 2005, located approximately 10 feet from the pipelines on opposite banks of Chinney Run, exhibited petroleum staining and odors. TPH concentrations in the soil sample collected from GP-02, located approximately 10 feet north of the 10-inch pipeline on the east bank of Chinney Run, were elevated with detections of up to 22, 000 milligrams per kilogram (mg/kg) in the C20 – C34 fraction. Low concentrations of petroleum VOCs were detected in GP-01 and GP-02 in the immediate vicinity of the pipeline. There were no detections of SVOCs in any of the borings.

Soil samples collected from the borings completed during February 2006 in the agricultural fields, in general, did not indicate evidence of petroleum hydrocarbon contamination. Trace levels of naphthalene were detected in two borings, TW-05 and GP-06. No other SVOCs were detected in any of the soil borings. TPH concentrations were low and possibly indicative of naturally occurring conditions.

Sediment –Sediment samples collected from the streambed of Chinney Run during February 2006, yielded visual and analytical evidence of petroleum contamination. Hand auger borings were advanced to a depth of approximately 30 inches. The upper portion of each boring did not yield any readily visible evidence of contamination, however, evidence of contamination, including staining and petroleum odors, was apparent near the bottom of the borings where the samples were collected. Accumulated water in the open boreholes had a noticeable sheen. The sediment samples yielded detections of TPH in the C20 – C34 range up to 11,000 mg/kg in SO-01. All the sediment samples contained low detections of phenanthrene, a PAH compound. No other SVOCs were detected. Samples from SO-1 and SO-2 yielded low detections of petroleum VOCs.

Surface Water – There were no detections of VOCs or SVOCs in the two surface water samples collected from Chinney Run during February 2006.

Ground Water - Ground water samples collected during July 2005, in the vicinity of the pipeline contained low concentrations of petroleum VOCs including benzene, sec-butylbenzene, naphthalene and toluene. Ground water samples collected from the temporary wells along with

the field tile discharge during March 2006 yielded no detections of VOCs. SVOCs were not detected in ground water samples in either round.

4.2. Comparison of Field Sampling Results to Screening Levels Criteria

Soil –VOC and SVOC analytical results were compared to U.S. EPA Region 9 PRGs for residential and industrial soils, which are used as a screening tool to determine the need for additional investigation. TPH analytical results were compared to Ohio BUSTR action levels for Soil Class I, or permeable soils.

VOC and SVOC (with the following exceptions) concentrations and detection limits were below their applicable residential PRG soil screening levels. PAH compounds benzo(a)pyrene and dibenz(a,h)anthracene were not detected in any soil sample however, the laboratory method detection limits (MDLs) for these two compounds were slightly higher than their respective residential soil PRGs of 62 mg/kg. The MDLs for these compounds, however, are below their industrial soil PRGs of 210 mg/kg. TPH concentrations in the light, C6 - C12, and middle, C10 – C20, distillate fractions were below BUSTR action levels. TPH concentrations in the heavy distillate fraction, C20 – C34, were above the BUSTR action level of 5000 mg/kg in soil samples from two borings, GP-02 (22,000 mg/kg) and GP-04 (8,500 mg/kg), located adjacent to the pipeline crossing at Chinney Run.

Sediment – VOC and SVOC results and detection limits in the hand augered sediment samples were compared to U.S. EPA Region 9 PRGs for residential and industrial soils and TPH was compared to BUSTR action levels. As with the soil samples, benzo(a)pyrene and dibenz(a,h)anthracene were not detected but had MDLs above the residential soil PRGs. One sediment sample, SO-1, had MDLs for these compounds slightly above the industrial PRGs as well. Sample SO-1 also exceeded the BUSTR action level for TPH in the heavy distillate fraction.

Surface Water – VOC or SVOC results and detection limits for surface water samples were compared to Ohio River Basin Aquatic Life and Human Health Criteria. No VOCs or SVOCs were detected in the surface water samples however the MDLs for several PAH compounds were higher than their respective standards.

Ground Water – Ground water sample results and detection limits were compared to U.S. EPA maximum contaminant levels (MCLs) for drinking water for those chemicals that have MCLs. There were no detections above MCLs in the ground water or field tile discharge samples for VOCs and SVOCs, however, the laboratory MDLs for benzo(a)pyrene (2.50 – 2.70 ug/L) were higher than the U.S. EPA MCL of 0.20 mg/L.

5.0 DISCUSSION

5.1. Migration and Exposure Pathways

Soil – Soil contamination has been documented in the vicinity of the pipeline crossing at Chinney Run. Concentrations of VOCs and PAHs detected in samples collected during Ohio EPA's field investigation were below U.S. EPA Region 9 PRGs for residential soils (or industrial soils for benzo(a)pyrene and dibenz(a,h)anthracene). Two soil samples in the vicinity of the pipeline crossing at Chinney Run yielded detections of TPH (C20 – C34) exceeding the BUSTR action level of 5000 mg/kg for Soil Class I. Soils farther away from the pipeline and the stream beneath the agricultural fields appear to be unimpacted.

Sediment – The uppermost sediment in the stream did not contain any readily visible evidence of impact. This would be expected as sediment has been removed in places by excavating and new sediment has been redeposited in its place by natural processes. Streambed sediment at depth however, has been impacted with petroleum as confirmed by visual evidence and sample results. Sediment disturbance has the potential to release free product petroleum to the waters of Chinney Run and downstream to Raccoon Creek as was documented in 2004 when Chinney Run was excavated.

Surface Water – Surface water samples did not yield detectable concentrations of VOCs or SVOCs in February 2006, however, the MDLs for several compounds exceeded the screening standards as noted in Section 4.2 Surface water may be impacted, however, by the release of residual petroleum if stream sediments or stream bank soils adjacent to Chinney Run are disturbed such as during dredging or excavation activities in or near the stream.

Ground Water – Ground water samples were collected on two occasions; grab ground water samples were collected in the immediate vicinity of Chinney Run and the pipelines during July 2005 and ground water samples were collected from temporary wells placed farther away in the agricultural fields during March 2006.

The July 2005 samples yielded evidence of ground water impacts associated with residual petroleum in the vicinity of the 1956 pipeline rupture. Although the VOC detections were below U.S. EPA MCLs and SVOCs were not detected, free phase petroleum product may be present in the vicinity of the Chinney Run pipeline crossing as evidenced by the 1992 and 2004 releases to Chinney Run.

Ground water samples collected from temporary wells at a further distance from Chinney Run in the agricultural fields during March 2006 yielded no detections of VOCs or SVOCs. The MDL for the PAH compound benzo(a)pyrene, was higher than the US EPA MCL for that compound. Benzo(a)pyrene, however, has a very low mobility and solubility in ground water and is not likely to migrate any significant distance if present. Petroleum VOCs, such as BTEX compounds which have greater mobility in ground water, were not detected in any of the temporary well samples from the agricultural fields. Additionally, shallow ground water flow direction across the Van Ness property, as measured on March 8, 2006, is to the northeast across the site toward Raccoon Creek. The potentiometric surface indicates that shallow ground water discharges to Raccoon Creek. The discharge is also enhanced by field tile drainage to Chinney Run and Raccoon Creek.

Ground water contamination at the site appears to be limited to the vicinity of the Chinney Run channel and the pipelines. Ground water contamination does not appear to be emanating from the vicinity of Chinney Run or the pipelines across the site and toward the village wellfield.

Air – No significant pathway was identified.

Ecological -- Ecological receptors in Chinney Run or Raccoon Creek could be affected if a release of oil to Chinney Run or Raccoon Creek would occur during excavating activities.

6.0. CONCLUSIONS AND SITE RECOMMENDATIONS

Conclusions

Petroleum contamination from the 1956 pipeline rupture occurs beneath the streambed and along the banks of Chinney Run as verified by samples collected by Ohio EPA. Residual petroleum contamination gradually decreases downstream toward the confluence of Chinney Run and Raccoon Creek. Evidence of petroleum contamination also decreases with distance from Chinney Run. Disturbing the streambed or stream banks in the vicinity of or downstream from the pipeline crossing will likely release residual petroleum to Chinney Run and potentially to Raccoon Creek. Additionally, petroleum contamination from the 1987 leak may still be locally present along the pipelines east of Chinney Run.

Ground water contamination does not appear to be emanating from the vicinity of Chinney Run or the pipelines across the site and toward the village wellfield.

Dredging or excavation in Chinney Run may result in further releases of residual petroleum into the waters of Chinney Run and Raccoon Creek. The Corp of Engineers has served notice to Mr. Van Ness to cease the placement of fill or dredged material into waters of the United States without a permit.

Highway improvements for State Route 37 including widening the highway, constructing a new frontage road along the north side of the highway and constructing a new bridge crossing over Chinney Run are proposed for 2007. While Ohio EPA would not require active remediation of the residual petroleum contamination along Chinney Run prior to construction, work performed in conjunction with the proposed highway construction in this area should be performed with caution and with measures in place to contain, handle and properly dispose of contaminated soil or ground water if encountered

Similarly, residual petroleum contamination may also be encountered during excavation activities associated with the maintenance, repair or relocation of the existing pipelines and measures should be in place during these activities to properly handle and dispose of residual petroleum or petroleum contaminated soil or water, if encountered.

Recommendations

Ohio EPA CDO DERR is referring this site to Ohio EPA DSW for remedial evaluation under their regulatory authority over streams due to the potential to impact surface water, sediment and aquatic life by residual petroleum should any future releases occur. Additionally, Ohio EPA CDO DERR is also referring this site to U.S. EPA for remedial evaluation under the provisions of the Oil Pollution Act of 1990.

7.0. REFERENCES

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Bownocker, J. A., Geologic Map of Ohio, Ohio Department of Natural Resources, Division of Geological Survey, 1920, Reprint 1992

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Ohio EPA, Information on file at CDO

TABLES

Table 1
Van Ness Property
Ground Water Elevations
March 8, 2006

Temporary Well	Top of Casing Elevation	Total Depth (ft) *	Depth to Water (ft) *	Ground Water Elevation
TW-01	917.42	14.34	6.96	910.46
TW-02	917.40	15.72	4.96	912.44
TW-03	918.68	13.97	5.98	912.70
TW-04	920.46	12.98	4.78	915.68
TW-05	917.29	13.12	4.23	913.06
Field Tile	---	---	---	**907.60

* - Measured from top of casing
** - Invert elevation of field tile discharge to Raccoon Creek

Table 2
Van Ness Property
Soil Sample Results
July 12, 2005

Analyte	Units	GP-01	GP-02	GP-03	GP-04	GP-05	PRG Residential	PRG Industrial	BUSTR TPH
VOCs	**ug/kg**								
Acetone		<5.59	<569	<5.65	64.1 J	<5.85	14,000,000	54,000,000	
2-Butanone		<2.80	<284	<2.83	6.79 J	<2.92	22,000,000	110,000,000	
sec-Butylbenzene		<0.559	98.3 J	<0.565	<0.604	<0.585	220,000	220,000	
Naphthalene		1.02 J	<56.9	<0.565	<0.604	<0.585	56,000	190,000	
Toluene		0.668 J	<56.9	<0.565	<0.604	<0.585	520,000	520,000	
SVOCs *	**ug/kg**								
Benzo(a)pyrene		<89.2	<187	<91.7	<97.5	<92.9	62	210	
Dibenz(a,h)anthracene		<89.2	<187	<91.7	<97.5	<92.9	62	210	
TPH	**mg/kg**								
C_6 - C_{12}		<0.0503	264	<0.0509	1.05	<0.0526	--	--	1000
C_{10} - C_{20}		<2.2	1400	<2.3	260	3.2	--	--	2000
C_{20} - C_{34}		50	22000	88	8500	110	--	--	5000

Notes:
Only detected compounds and compounds that were not detected but with detections limits abaove screening levels are summarized.
See laboratory reports for full analyte list.
ND - Not detected - See laboratory reports for individual compound detection limits.
* PAHs and cresols
PRG - US EPA Region 9 Preliminary Remediation Goal
BUSTR - Bureau of Underground Storage Tank Regulation Total Petroleum Hydrocarbon Action Level for Soil Class 1
J - Analyte is positively identified but quantitation is below reporting limit.

Table 3
Van Ness Property
Soil Sample Results
February 27-28, 2006

Analyte	Units	TW-01	TW-02	TW-03	TW-04	TW-05	PRG Residential	PRG Industrial	BUSTR TPH
VOCs	**ug/kg**								
Acetone		<5.35	22.1	<5.3	<4.97	17.5	14,000,000	54,000,000	
2-Butanone		<2.68	3.99J	<2.65	<2.49	3.87	22,000,000	110,000,000	
Carbon Disulfide		<0.535	<0.477	<0.530	<0.497	<0.499	360,000	720,000	
Naphthalene		<0.535	<0.477	<0.530	<0.497	0.825J	56,000	190,000	
SVOCs	**ug/kg**								
Benzo(a)pyrene		<104	<105	<94.8	<94.4	<108	62	210	
Dibenz(a,h)anthracene		<104	<105	<94.8	<94.4	<108	62	210	
Di-n-butylphthalate		<104	<105	<94.8	130J	<108	6,100,000	62,000,000	
TPH	**mg/kg**								
C_6 - C_{12}		<0.0648	<0.0627	<0.0533	<0.0536	<0.0586	--	--	1000
C_{10} - C_{20}		<2.6	<2.6	<2.4	<2.4	<2.6	--	--	2000
C_{20} - C_{34}		32	50	6.2J	7.2J	8.4	--	--	5000

Notes:
Only detected compounds and compounds that were not detected but with detection limits exceeding an MCL are summarized.
See laboratory reports for full analyte list.
ND - Non detect - See laboratory reports for individual compound detection limits.
BUSTR - Bureau of Underground Storage Tank Regulation Total Petroleum Hydrocarbon Action Levels for Soil Class 1.
J - Analyte positively identified but quantitation below reporting limit.

Table 3 (Continued)
Van Ness Property
Soil Sample Results
February 27-28, 2006

Analyte	Units	GP-06	GP-07	GP-08	PRG Residential	PRG Industrial	BUSTR
VOCs	**ug/kg**						
Acetone		51	<4.70	<4.93	14,000,000	54,000,000	
2-Butanone		10.9	<2.35	<2.47	22,000,000	110,000,000	
Carbon Disulfide		0.891J	<0.470	<0.493	360,000	720,000	
Naphthalene		0.496	<0.470	<0.493	56,000	190,000	
SVOCs	**ug/kg**						
Benzo(a)pyrene		<107	<95.5	<96.9	62	210	
Dibenz(a,h)anthracene		<107	<95.5	<96.9	62	210	
Di-n-butylphthalate		<107	<95.5	<96.9	6,100,000	62,000,000	
TPH	**mg/kg**						
C_6 - C_{12}		<0.0645	<0.0565	<0.068	--	--	1000
C_{10} - C_{20}		<2.6	<2.4	<2.4	--	--	2000
C_{20} - C_{34}		31	18	7.7J	--	--	5000

Notes:
Only detected compounds and compounds that were not detected but with detection limits exceeding an MCL are summarized.
See laboratory reports for full analyte list.
ND - Non detect - See laboratory reports for individual compound detection limits.
BUSTR - Bureau of Underground Storage Tank Regulation Total Petroleum Hydrocarbon Action Levels for Soil Class 1
J - Analyte positively identified but quantitation below reporting limit.

Table 4
Van Ness Property
Sediment Sample Results
February 7, 2006

Analyte	Units	SO-1	SO-2	SO-3	SO-4	PRG Residential	PRG Industrial	BUSTR TPH
VOCs	**ug/kg**							
Acetone		<500	<499	74.9J	61.9J	14,000,000	54,000,000	
2-Butanone		<250	<250	21.2J	15.7J	22,000,000	110,000,000	
n-Butylbenzene		197J	116J	<2.31	<0.524	240,000	240,000	
sec-Butylbenzene		144J	236J	7.00J	<0.524	220,000	220,000	
tert-Butylbenzene		<50	110J	3.74J	<0.524	390,000	390,000	
Isopropylbenzene		69.6J	<49.9	<2.31	<0.524	570,000	2,000,000	
p-Isopropyltoluene		126J	<49.9	<2.31	<0.524	--	--	
n-Propylbenzene		93.4J	<49.9	<2.31	<0.524	240,000	240,000	
1,2,4-Trimethylbenzene		628	94.3J	<2.31	<0.524	52,000	170,000	
1,3,5-Trimethylbenzene		123J	<49.9	<2.31	<0.524	21,000	70,000	
m,p-Xylene		61.0J	<49.9	<2.31	<0.524	270,000	420,000	
SVOCs	**ug/kg**							
Benzo(a)pyrene		<481	<182	<142	<118	62	210	
Dibenz(a,h)anthracene		<481	<182	<142	<118	62	210	
Phenanthrene		687J	247J	<142	<118	--	--	
TPH	**mg/kg**							
C_6 - C_{12}		498	471	19.7	3.24	--	--	1000
C_{10} - C_{20}		950	480	120	16	--	--	2000
C_{20} - C_{34}		11,000	4400	920	1200	--	--	5000

Notes:
Only detected compounds or compounds that were not detected but with detections limits above screening levels are summarized. See laboratory reports for full analyte list.
ND - Non detect - See laboratory reports for individual compound detection limits.
PRG - U.S. EPA Preliminary Remediation Goal
BUSTR - Bureau of Underground Storage Tank Regulation Total Petroleum Hydrocarbon Action Level for Soil Class 1
J - Analyte positively identified but quantitation below reporting limit.

Table 5
Van Ness Property
Surface Water Sample Results
February 7, 2006

Analyte	Units	SW-1	SW-2	Aquatic Life	Human Health
				OMZA	Non Drink
VOCs	ug/l	ND	ND		
SVOCs	ug/l				
Anthracene		<2.55	<2.63	0.02	110,000
Benzo(a)anthracene		<2.55	<2.63	--	0.49
Benzo(a)pyrene		<2.55	<2.63	--	0.49
Benzo(b)fluoranthene		<2.55	<2.63	--	0.49
Chrysene		<2.55	<2.63	--	0.49
Dibenz(a,h)anthracene		<2.55	<2.63	--	0.49
Fluoranthene		<2.55	<2.63	0.8	370
Indeno(1,2,3-c,d)pyrene		<2.55	<2.63	--	0.49
Phenanthrene		<2.55	<2.63	2.3	--

Notes:
Only detected compounds and PAH compounds that were not detected but have detection limits exceeding a screening value are summarized.
See laboratory reports for full analyte list.
Screening criteria - Ohio EPA Ohio River Basin Aquatic Life and Human Health (Non Drinking Water) Criteria
ND - Non detect - See laboratory reports for individual compound detection limit.

Table 6
Van Ness Property
Ground Water Sample Results
July 12, 2005

Analyte	Units	GPW-01	GPW-02	GPW-03	GPW-04	GPW-05	MCL
VOCs	**ug/l**						
Acetone		6.73 J	7.80 J	6.89 J	<2.50	3.16 J	--
Benzene		0.198 J	<0.125	0.163 J	<0.125	0.159 J	5.0
sec-Butylbenzene		<0.250	0.721 J	<0.250	<0.250	<0.250	--
Carbon disulfide		0.842 J	0.917 J	0.604 J	<0.500	<0.500	--
Naphthalene		<0.200	0.286 J	<0.200	<0.200	<0.200	--
Toluene		0.400 J	0.284 J	<0.250	0.329 J	0.281J	1000
SVOCs *	**ug/l**						
Benzo(a)pyrene		<2.58	<2.70	<2.60	<2.65	NA	0.2

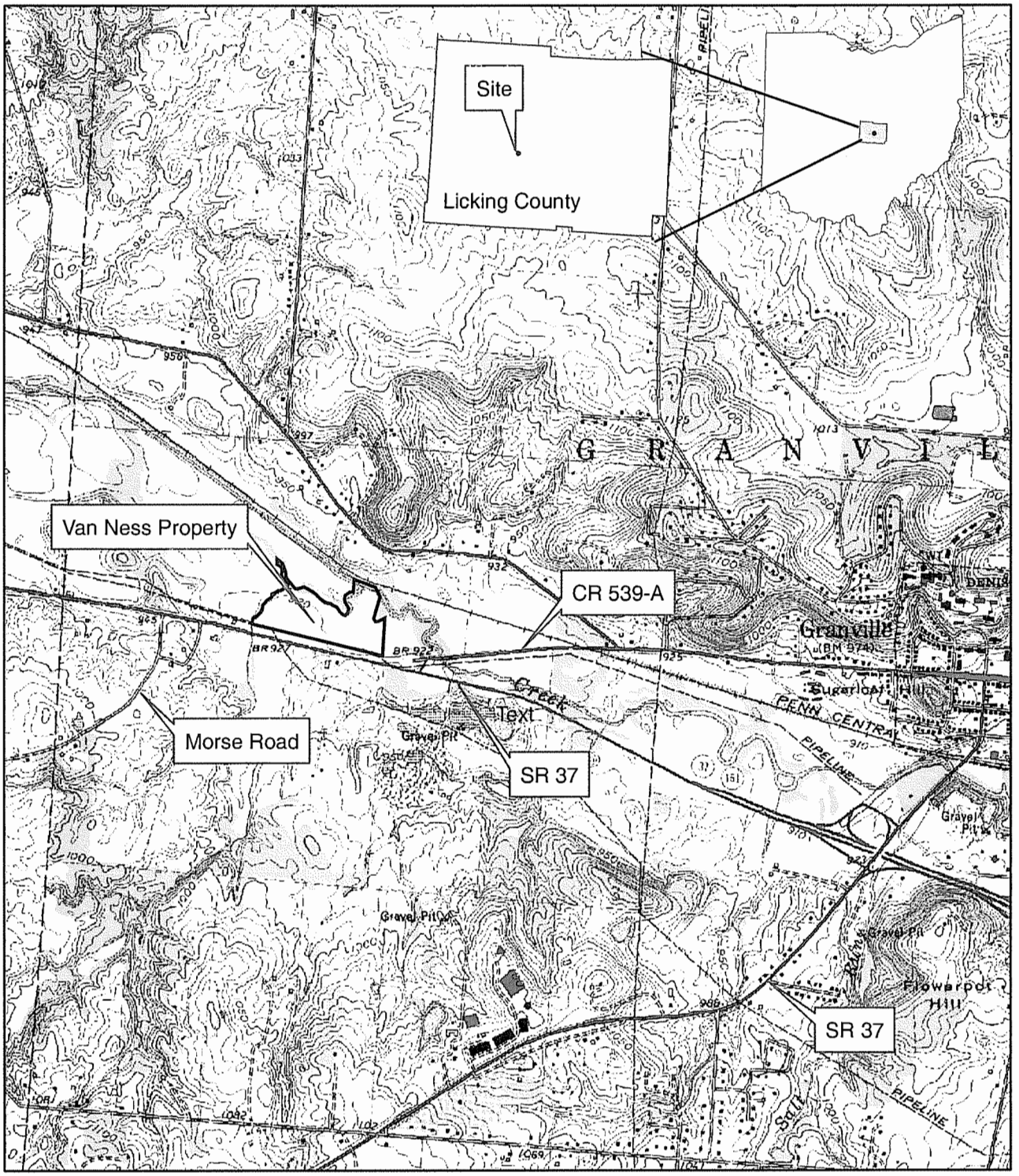
Notes:
Only detected compounds and compounds that were not detected but with detections limits exceeding an MCL are summarized.
See laboratory reports for full analyte list.
MCL - U.S. EPA Maximum Contaminant Level for drinking water
ND - Non detect - See laboratory reports for individual compound detection limits.
NA - Not Analyzed
SVOCs - PAHs and cresols
J - Analyte positively identified but quantitation is below reporting limit.

Table 7
Van Ness Property
Ground Water Sample Results
March 8, 2006

Analyte	Units	TW-01	TW-02	TW-03	TW-04	TW-05	TW-DUP (TW-03)	Field Tile	Trip Blank	MCL
VOCs	**ug/l**									
Methylene Chloride		<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	0.923J	--
SVOCs	**ug/l**									
Benzo(a)pyrene		<2.50	<2.50	<2.50	<2.50	<2.50	<2.55	<2.50	--	0.2

Notes:
Only detected compounds or compounds that were not detected but have detection limits exceeding an MCL are summarized.
See laboratory reports for full analyte list.
MCL - U.S. EPA Maximum Contaminant Level for drinking water.
ND - Non detect - See laboratory reports for individual compound detection limits.
J - Analyte positively identified but quantitation is below reporting limit.

FIGURES

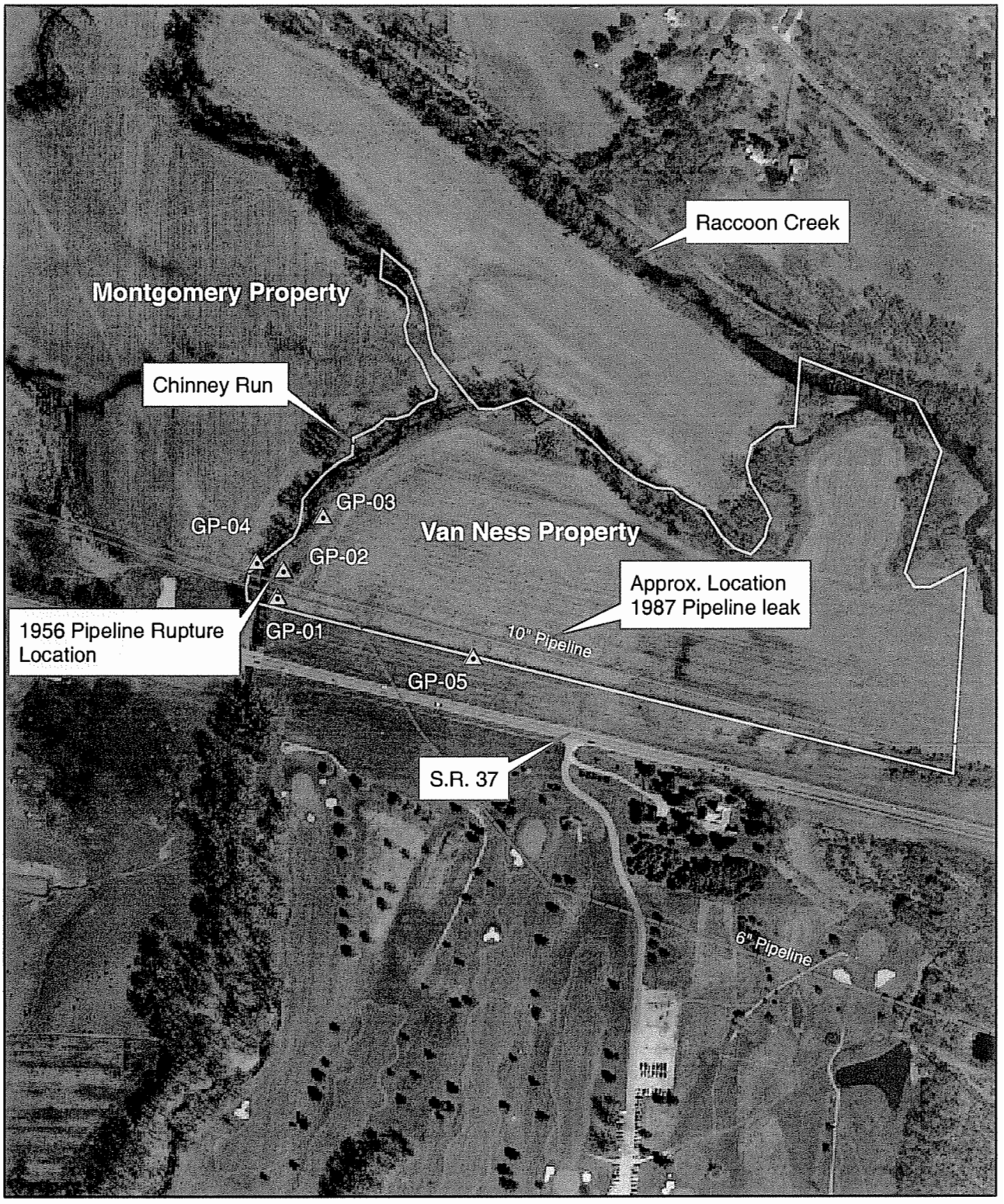


Base Map: Granville, OH USGS 7.5' Series Quadrangle

Ohio EPA

Van Ness Property
Site Location Map

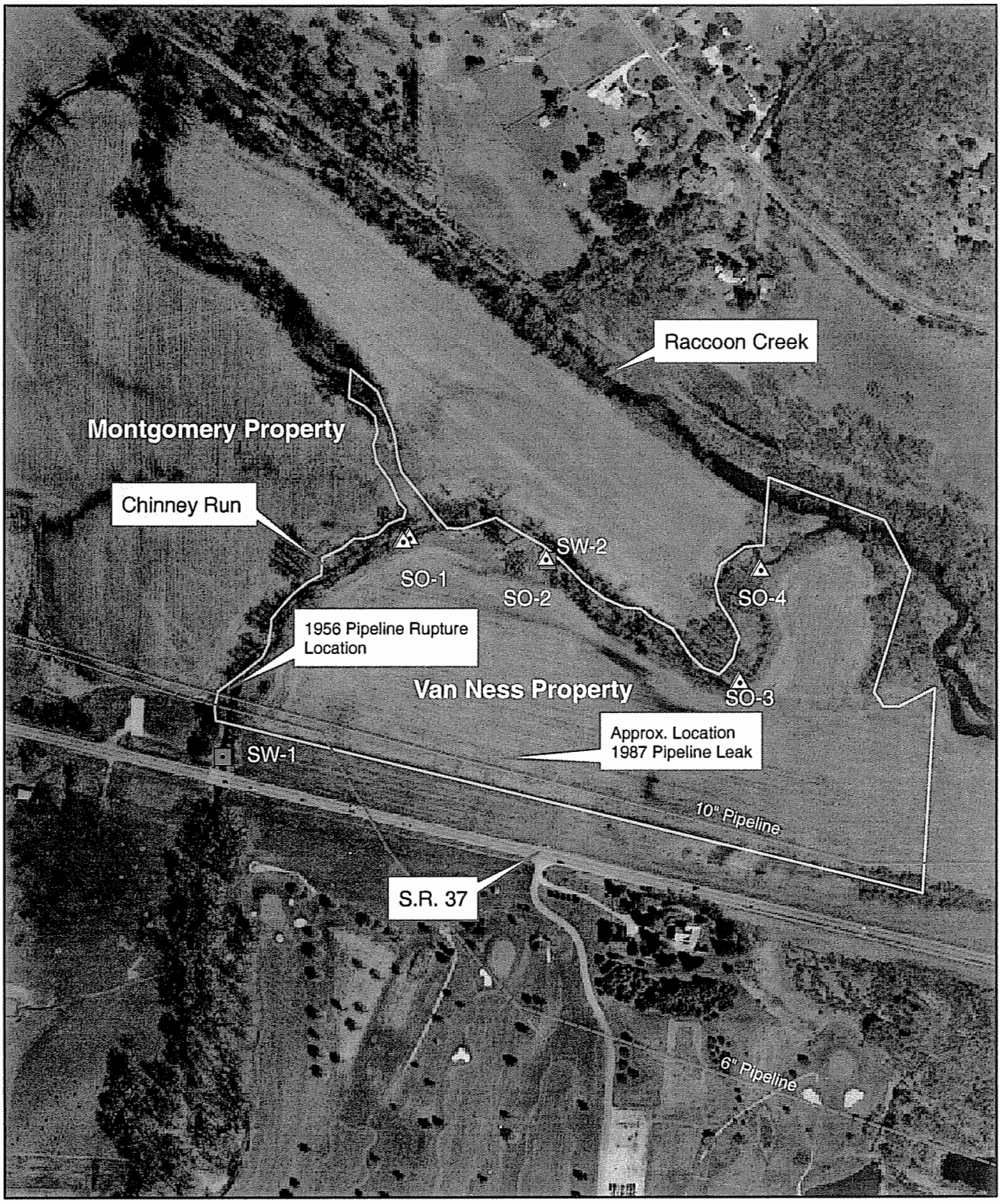
Figure 1



Ohio EPA

Van Ness Property
7/12/05
Sample Locations

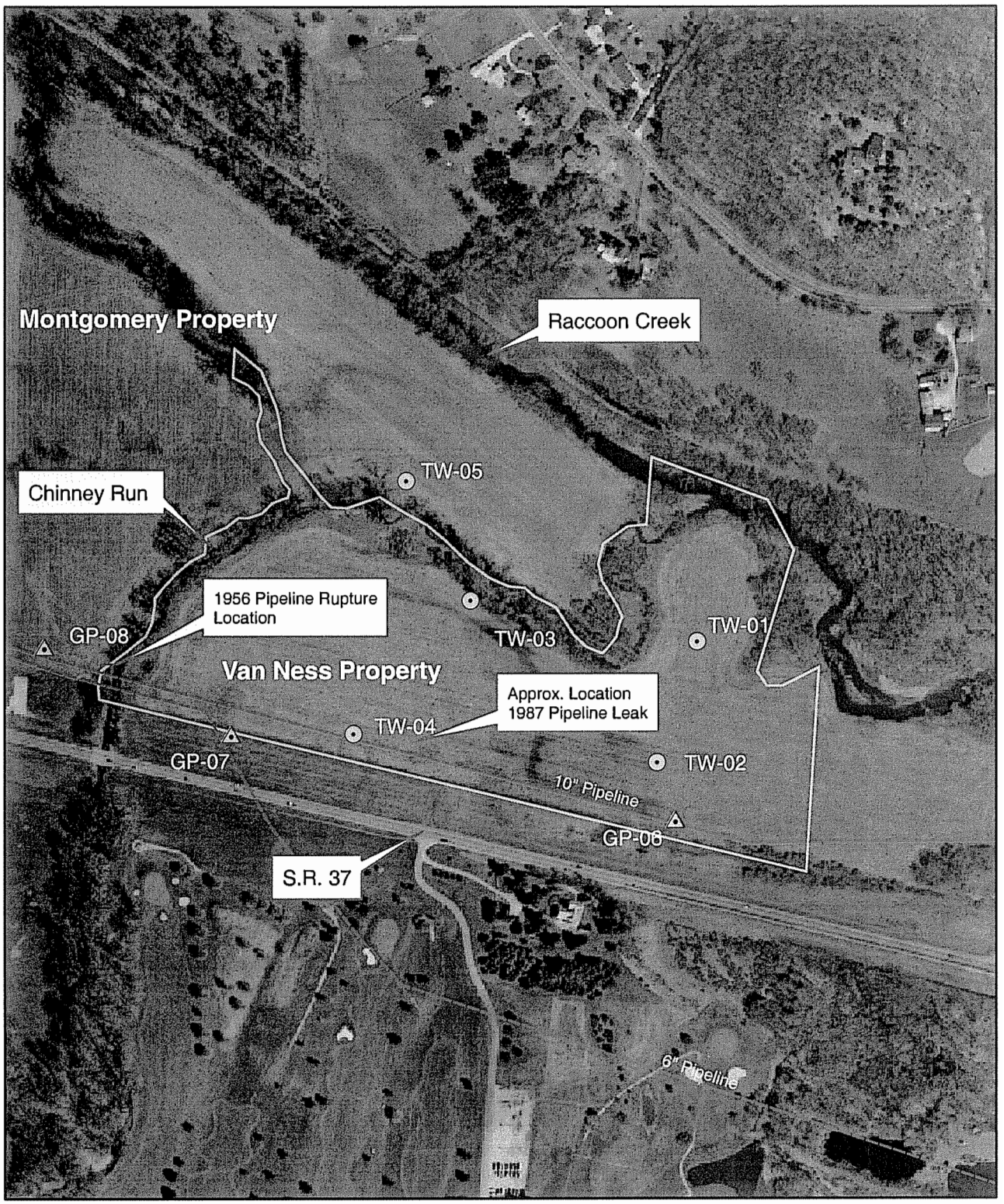
Figure 2



Ohio EPA

Van Ness Property
2/07/06
Sample Locations

Figure 3



0 200 400 800 1,200 Feet

▲ Geoprobe Soil Boring

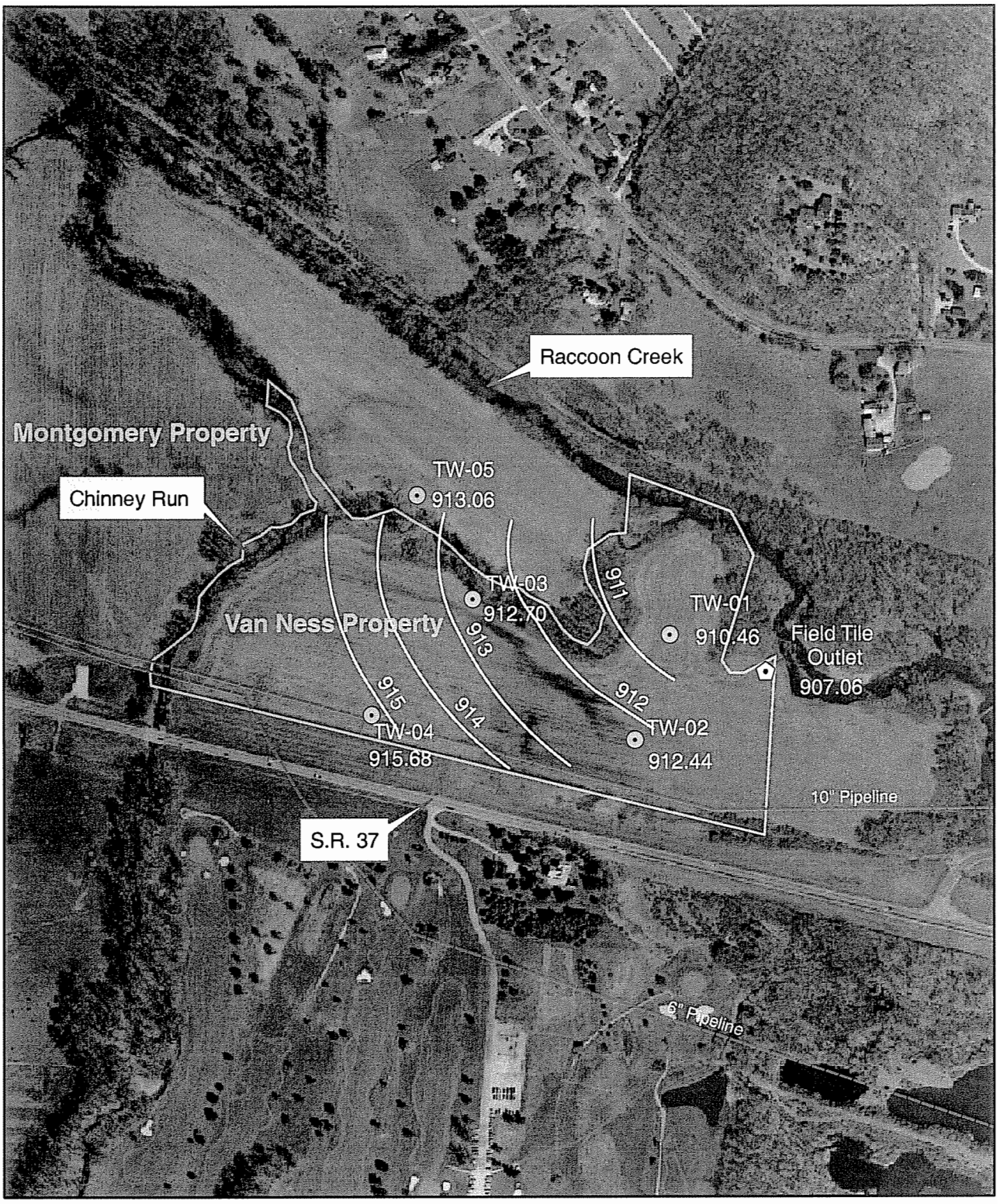
⊙ Temporary Well

N

Ohio EPA

Van Ness Property
2/27 - 2/28/06
Sample Locations

Figure 4



Feet

0 200 400 800 1,200

N

- Geoprobe Soil Boring
- Temporary Well
- Field Tile Outlet

Ohio EPA

Van Ness Property
Potentiometric Surface Map
3/08/06

Figure 5

GEOPROBE® CORE LOGS

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 7/12/2005

Location Description: **GP-01**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 32"

0 - 17" Brown SILT
17 - 21" Brown fine SAND, trace coarse sand
21" - 24" Brown clayey SILT
24 - 32" Fine SAND, trace coarse sand PID = 0.0

Core B (4-8 ft) **Recovery:** 27"

0 - 12" Brown fine to medium SAND, little silt
12 - 27" Brown poorly sorted silty SAND and GRAVEL - wet @ 17"
PID = 0.0

Core C (8-12 ft) **Recovery:** 40"

0 - 14" Brown poorly sorted silty SAND and GRAVEL - wet
14 - 19" Brown silty CLAY
19 - 40" Brown poorly sorted silty SAND and GRAVEL
EOB @ 12'

Core D (12-16 ft) **Recovery:**

Core E (16-20 ft) **Recovery:**

Core F (20-24 ft) **Recovery:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 7/12/2005

Location Description: **GP-02**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 23"

Dark brown SILT, little sand and fine gravel
PID = 0.0

Core B (4-8 ft) **Recovery:** 36"

0 - 16" Dark brown SILT, little sand and fine gravel
16 - 36" Brown fine to medium SAND, trace gravel - moist
PID = 0.1

Core C (8-12 ft) **Recovery:** 27"

Brown poorly sorted silty SAND and GRAVEL - wet Black staining and petroleum odor from 8 - 22"
PID = 49.0

Core D (12-16 ft) **Recovery:** 24"

Brown poorly sorted SAND and GRAVEL Staining and odor noted from 0 - 10". Possible slough.

EOB @ 16'

Core E (16-20 ft) **Recovery:**

Core F (20-24 ft) **Recovery:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 7/12/2005

Location Description: **GP-03**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 32"

0 - 12" Brown SILT - dry
12 - 32" Brown clayey SILT - moist
PID = 0.0

Core B (4-8 ft) **Recovery:** 32"

0 - 15" Brown clayey SILT - wet @ 12"
15 - 32" Brown poorly sorted fine to coarse SAND and GRAVEL
PID = 0.0

Core C (8-12 ft) **Recovery:** 34"

Brown poorly sorted fine to coarse SAND and GRAVEL
EOB @ 12' PID = 0.3

Core D (12-16 ft) **Recovery:**

Core E (16-20 ft) **Recovery:**

Core F (20-24 ft) **Recovery:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 7/12/2005

Location Description: **GP-04**

Latitude/Longitude: _____ Logger: RRM

Core A (0-4 ft) **Recovery:** 28"

0 - 20" Brown SILT, little sand and gravel - dry
20 - 28" Brown sandy SILT, little gravel - moist
PID = 0.6

Core B (4-8 ft) **Recovery:** 46"

0 - 10" Brown poorly sorted fine to coarse SAND and GRAVEL
10 - 42" Brown stiff silty CLAY, trace sand - moist
42 - 46" Black stained clayey SAND and GRAVEL - wet
PID = 11.9

Core C (8-12 ft) **Recovery:** 24"

Brown poorly sorted SAND and GRAVEL. No staining, slight petroleum odor

EOB @ 12' PID = 1.4

Core D (12-16 ft) **Recovery:**

Core E (16-20 ft) **Recovery:**

Core F (20-24 ft) **Recovery:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 7/12/2005

Location Description: **GP-05**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 30"

0 - 15" Dark brown silt to clayey SILT, little sand - slightly moist
15 - 30" Tan-brown poorly sorted silty fine to coarse SAND and GRAVEL
PID = 0.0

Core B (4-8 ft) **Recovery:** 25"

Same as above - moist and darker brown at 8", wet @ 16"
PID = 0.6

Core C (8-12 ft) **Recovery:** 12"

Same as above
EOB @ 12' PID = 0.9

Core D (12-16 ft) **Recovery:**

Core E (16-20 ft) **Recovery:**

Core F (20-24 ft) **Recovery:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **GP-06**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 30" **PID:** 0.1

Brown Silt to clayey Silt

Core B (4-8 ft) **Recovery:** 33" **PID:** 0.2

0 - 4" SAA
4 - 24" Brown clayey SILT to silty CLAY w/ orange mottling, wet @ 12"
24 - 33" Gray sandy SILT
EOB @ 8'

Core C (8-12 ft) **Recovery:** **PID:**

Core D (12-16 ft) **Recovery:** **PID:**

Core E (16-20 ft) **Recovery:** **PID:**

Core F (20-24 ft) **Recovery:** **PID:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **GP-07**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 41" **PID:** 0.2

Brown silt to clayey SILT, wet @ 36"

Core B (4-8 ft) **Recovery:** 22" **PID:** 0.0

0 - 13" Brown clayey SLIT, some sand and gravel
13 - 19" Brown SAND and GRAVEL
19 - 22" Brown silty CLAY
EOB @ 8'

Core C (8-12 ft) **Recovery:** **PID:**

Core D (12-16 ft) **Recovery:** **PID:**

Core E (16-20 ft) **Recovery:** **PID:**

Core F (20-24 ft) **Recovery:** **PID:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **GP-08**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 36" **PID:** 0.0

Brown SILT to clayey SILT, increasing clay % w/ depth, orange mottling below 18"

Core B (4-8 ft) **Recovery:** 48" **PID:** 0.1

0 - 30" Orange-brown clayey SILT
30 - 48" Sandy clayey SILT, little gravel, wet
EOB @ 8'

Core C (8-12 ft) **Recovery:** **PID:**

Core D (12-16 ft) **Recovery:** **PID:**

Core E (16-20 ft) **Recovery:** **PID:**

Core F (20-24 ft) **Recovery:** **PID:**

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **TW-01**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 30" **PID:** 0.0

0 - 15" Brown SILT
15 - 30" Brown clayey SILT, clay increasing w/ depth

Core B (4-8 ft) **Recovery:** 43" **PID:** 0.0

0 - 35" Brown silty CLAY w/ orange mottling
35 - 43" Brown SILT to clayey SILT, wet

Core C (8-12 ft) **Recovery:** 34" **PID:** 0.1

0 - 7" Same as above
7 - 26" Dark brown clayey SILT, little sand
26 - 34" Orange-brown SAND and GRAVEL

Core D (12-15 ft) **Recovery:** 24" **PID:** 0.0

Orange brown SAND and GRAVEL, little clay
EOB @ 15'

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **TW-02**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 32" **PID:** 0.5

Brown clayey SILT to silty CLAY % clay increasing w/depth

Core B (4-8 ft) **Recovery:** 44" **PID:** 0.1

0 - 17" Brown clayey SILT, little orange mottling
17 - 29" Orange-brown silty CLAY, soft, moist to wet
29 - 38" Gray clayey SILT to silty CLAY, wet
38 - 44" Dark gray SILT, little clay, little fine sand, wet

Core C (8-12 ft) **Recovery:** 38" **PID:** 0.0

0 - 27" Gray soft clayey SILT
27 - 38" Orange-brown SAND and GRAVEL, little clay, wet

Core D (12-14 ft) **Recovery:** 14" **PID:** 0.7

Orange brown SAND and GRAVEL
EOB @ 14'

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **TW-03**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 36" **PID:** 0.0

0 - 4" Brown SAND and GRAVEL
4 - 17" Brown clayey SILT, trace sand and gravel - moist
17 - 36" Same as above w/ little orange mottling.

Core B (4-8 ft) **Recovery:** 25" **PID:** 0.0

0 - 8" Brown sandy SILT
8 - 20" Brown SAND and GRAVEL
20 - 25" Gray- brown clayey silt with SAND and GRAVEL

Core C (8-12 ft) **Recovery:** 37" **PID:** 0.0

Dark gray clayey SILT, trace sand, wet
EOB @ 12.0'

Core D (12-16 ft) **Recovery:** 0 **PID:** -

No Recovery - Attempted core, fine sand heaved before advancing

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/27/2006

Location Description: **TW-04**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 30" **PID:** 0.0

0 - 18" Brown soft SILT, moist
18 - 30" Brown sandy SILT, wet

Core B (4-8 ft) **Recovery:** 25" **PID:** 0.0

Light brown SAND and GRAVEL with clay

Core C (8-12 ft) **Recovery:** 44" **PID:** 0.0

0 - 8" Light brown SAND and GRAVEL, some silt and clay
8 - 36" Sandy SILT, wet
36 - 44" Gray sandy SILT
EOB @ 12'

Geoprobe Core Log Sheet

Site: Van Ness Property Date/Time: 2/28/2006

Location Description: **TW-05**

Latitude/Longitude: Logger: RRM

Core A (0-4 ft) **Recovery:** 36" **PID:** 0.3

Brown soft SILT, wet @ 26"

Core B (4-8 ft) **Recovery:** 33" **PID:** 0.9

0 - 8" Brown soft clayey SILT, wet
8 - 17" Gray SILT and MUCK, some organic matter, loose
17 - 29" Gray SILT w/ fine sand
29 - 33" Orange-brown to gray fine SAND and GRAVEL w/ small shells

Core C (8-12 ft) **Recovery:** 17" **PID:** 0.3

SAND and GRAVEL, little silt and clay, orange brown - upper 12", Gray-brown - lower 5"
EOB @ 12'

ATTACHMENT 1

Determination of Regulatory Authority

RECOMMENDATION OPTIONS WORKSHEET

Site Name: Van Ness Property **Worksheet Completion Date: 12/28/06**

Step 1. Threshold Criteria

Instructions: Answer all threshold criteria questions. If the answer to a threshold criteria question is "yes", circle all yes answers across the row for that question. Similarly, if the answer is "no", circle all no answers in that row. (A dash signifies that the reply to the particular threshold criteria question does not significantly influence the decision process one way or the other.) If all of the answers in a column are circled, mark an "X" at the bottom of that column. An "X" indicates a viable option. If there are several columns where all answers are circled, this indicates there are multiple viable recommendation options. Balancing criteria found in Step 2. can be applied to assist in choosing the best recommendation option for the site.

		Recommendations										
		Inter-/Intra-Program Referral		No Further Action					State Cleanup Program	State Author./ Enforce. Action	Fed. Site Assess. Program	Federal Removal Action Program
Threshold Criteria	Does DERR have authority?	No	**Yes**	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
	Is there a potential/actual release?		**Yes**		No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
	Is there potential/actual harm?		**Yes***			No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
	Is there a viable PRP?						-	-	No	**Yes**	-	-
	Does CERCLA have authority?						-	Yes	-	-	Yes	Yes
	Has a VAP NFA with CNS been requested?						Yes	-	-	**No**	**No**	-
	Is it in the VAP-MOA track?						-	Yes	-	**No**	**No**	-
Mark an X if all of the replies in the column are circled			X							X		

* "Low" potential or actual harm.

Step 2. Balancing Criteria

Instructions: Check all balancing criteria (mitigating circumstances) that apply to the site. Provide a description of potential affects of the balancing criteria on viable recommendation options.

Balancing Criteria	Check if applicable	Description
Lack of resources		
Unusual resource demands		
Local government priority	X	Village of Granville concerned about site.
Publicly-owned site (i.e., federal match)		
Post-removal O&M		
PRP issues	X	Several PRPs
Multi-programmatic site		
Clean Ohio Fund site		
Federal brownfield/targeted brownfield assessment site		
Other:		
Other:		
Other:		

Question	Yes	No	If yes, refer to (unless otherwise noted)
1. Does the site meet the U.S. EPA removal action criteria and/or warrant a potential U.S. EPA removal action[1]?		X	
2. Is the site the result of a potential violation of a permit or of orders[2]? If yes, which program's permit or orders? _____	X		ACOE DSW
3. If the site is a landfill, was it closed under pre-1976 rules?			N/A
4. If the site is a landfill, was it closed under the 1976 rules?			N/A
5. If the site is a landfill, was it closed under the 1990 rules?			N/A
6. Is the site an operating solid waste landfill?		X	
7. Is the release from an injection well?		X	
8. If the site is a contaminated public water supply, is the source known?		X	
9. Is this a contaminated sediment site?	X		
10. Is this an air deposition site?		X	
11. Is this an abandoned drum site?		X	
12. Is the site on the National Corrective Action Plan Sites or NCAPS list (RCRA corrective action sites list)?		X	
13. Is the site a permitted treatment, storage, or disposal (TSD) facility or has it applied for a Part B permit?		X	
14. Is the release from a RCRA regulated or permitted unit?		X	
15. Is the release from a production process or of product material?		X	
16. Is the release from a closed RCRA unit?		X	
17. If the release is from a closed RCRA unit, does it have an approved post-closure plan?			N/A
18. Is the release a petroleum product from a BUSTR regulated underground storage tank		X	
19. Is the release from a closed DSW treatment unit?		X	
20. Did the release occur prior to 1980?	X		
21. Did the facility operate prior to 1980 only?		X	
22. Are the owners and operators bankrupt and/or non-viable[3]?		X	

1. Refer to the *Procedure for Referring Removal Actions to U.S. EPA*, DERR-00-DI-027.
2. Permits can include DAPC Title V or open burning permits, DHWM Part B permits, DSIWM 02(G) exemptions and DSW NPDES or storm water permits.
3. Determine if there is a closure assurance account that DERR can use to work on the site.