



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

SUBJECT: Long-term Stewardship Assessment
Kelly Run Sanitation Inc.
EPA ID: PAD 004810222
1500 Hayden Boulevard
Elizabeth, Pennsylvania

DATE: September 19, 2022

TO: Alizabeth Olhasso, Branch Chief
File for Kelly Run Sanitation Inc.
RCRA Corrective Action Branch 2

FROM: Todd Richardson

Remedy Assessment Summary: On August 10, 2022, the United States Environmental Protection Agency's (USEPA) Land, Chemicals, and Redevelopment Division (LCRD) representative, Todd Richardson, conducted a long-term stewardship assessment site visit of the Kelly Run Inc Sanitation (Facility) located in Elizabeth, Allegheny County, Pennsylvania. Based on the site visit, file review, and recent Pennsylvania Department of Environmental Protection's (PADEP) June 1, 2021 Compliance Evaluation Inspection and Groundwater Monitoring Evaluation, information gathered concludes the Facility is meeting the objectives of the August 14, 2006 PADEP RCRA Post-Closure Permit (renewed March 23, 2018 with no changes to the groundwater monitoring or abatement plan), the April 21, 2011 Municipal Solid Waste Operating Permit and USEPA's final remedy selected in the November 23, 2011 Statement of Basis. The objectives set forth for the Kelly Run Sanitation Facility in the RCRA Post Closure Permit and the Statement of Basis include operation and maintenance of the Facility's landfill caps, monitoring systems, leachate detection and collection system, and groundwater remediation system and the compliance with and maintenance of institutional and engineering controls.

Introduction: Long-term stewardship (LTS) refers to the activities necessary to ensure that engineering controls (ECs) are maintained and that institutional controls (ICs) continue to be enforced. The purpose of the EPA Region 3 LTS program is to periodically assess the efficacy of the implemented remedies (i.e., ECs and ICs) and to update the community on the status of the RCRA Corrective Action facilities. The assessment is conducted in twofold, which consists of a record review and a field inspection, to ensure that the remedies are implemented and maintained in accordance with the final decision.

Facility Background: The Kelly Run Inc Sanitation Facility is located at 1500 Hayden Boulevard, Elizabeth, Allegheny County, Pennsylvania (Facility). The Facility property consists of approximately 390 acres and is surrounded by woodlands, farmlands, and residential properties. A location map is attached as Figure 1. The Facility has operated as a waste disposal facility since 1965. The Facility has five disposal areas, as described below.

- A 17-acre disposal area, identified as the Old Waste Area (OWA), operated as a pre-RCRA landfill. It was closed in the early 1970's and capped in 1997.
- A 35-acre area, identified as the Western Disposal Area (WDA), is a closed RCRA hazardous waste landfill. It operated from 1975 to 1984. It was constructed with a clay liner and a leachate collection system. The Pennsylvania Department of the Environment (PADEP) issued a closure and post-closure permit for the WDA in 1992. The WDA was capped in 1994.
- Three PADEP-permitted municipal waste disposal areas exist at the Facility:
 - A 9-acre area, identified as Phase 1 Area, was permitted in 1991 and capped in 1996.
 - A 19-acre area, identified as Phase 2 Area, was permitted in 1995 and capped in 1998.
 - A 48-acre area, identified as Phase 3 Area, was permitted in 1997 and is still an active municipal waste landfill area.

The following observed impacts have prompted action:

- From 1980-1983, the WDA received residential, hazardous, and municipal wastes including coal tar decanter sludge, petroleum refinery sludge, corrosive lime slurry waste, creosote and ammonia still waste water sludge.
- Piezometers were installed in the OWA to communicate with the Benwood Limestone aquifer below it. Evaluation of the OWA and the Benwood Limestone aquifer revealed elevated concentrations of chloride, BTEX, and naphthalene, were detected both the waste and the groundwater.
- Coal Tar related wastes were only found near surface (less than 25 feet below surface) OWA which revealed some surface migration whereas lack of coal tar related wastes and increased chlorides in Benwood Limestone aquifer suggested wastes within this aquifer would most likely be from OWA.

The WDA is currently maintained and monitored under a RCRA Post-Closure Permit, Permit No. PAD 004 810 222 (Post-Closure Permit), issued by PADEP on February 7, 1992, and renewed on August 14, 2006. The remaining landfill areas are maintained and monitored under PADEP Municipal Solid Waste Operating Permit No. 100663 (Solid Waste Permit), issued by PADEP on September 14, 1990, and renewed on April 21, 2011.

The Facility's Post-Closure Permit and Solid Waste Permit prohibit any use of the Facility, other than as a municipal landfill, while the Phase 3 Area is operated as a municipal landfill. The permits also impose operation, maintenance and monitoring requirements on the entire Facility. As part of the post-closure care and operating requirements in those permits, the Facility conducts quarterly groundwater monitoring to assess releases from the disposal areas and

maintains the integrity and protectiveness of the landfill caps. The monitoring system for the landfills includes 21 wells. Surface water samples are collected at 7 locations surrounding the disposal areas. In addition, the Facility operates a leachate collection system, a groundwater remediation system, and a methane monitoring system. Leachate and contaminated groundwater from the Facility are sent to the Elizabeth Borough Municipal Treatment Authority wastewater treatment plant for treatment.

Current Site Status: On January 24, 2012, EPA issued the Final Decision and Response to Comments (FDRTC). The final remedy determination is Corrective Action Complete with Controls. Controls include operation and maintenance and monitoring actions for the landfill caps and groundwater monitoring system, and compliance with and maintenance of institutional controls.

The final remedy detailed in the FDRTC is implemented through a Hazardous Waste Facility Post-Closure Permit between EPA and Kelly Run Sanitation Inc. dated November 23, 2011 (EPA Permit). The EPA Permit incorporates the Facility’s RCRA Post-Closure Permit No. PAD004810222 and the Municipal Solid Waste Operating Permit No. 100663, both issued by Pennsylvania Department of Environmental Protection (DEP Permits). A portion of the facility (48-acre, Phase 3 Area) remains under continued use as a municipal landfill.

Long-term Stewardship Site Visit:

On August 10, 2022, EPA conducted a long-term stewardship site visit Kelly Run Inc. and met with Facility representatives to discuss and assess the status of the implemented remedies at the site. The attendees included:

Name	Organization	Role	Email Address
Todd Richardson	EPA Region 3	Long Term Stewardship Coordinator	richardson.todd@epa.gov
Paul Frank	Chester County Solid Waste Authority	Compliance Officer	tdevine@chestercswa.org
Rick Smitsky	Chester County Solid Waste Authority	Executive Director	bwatts@chestercswa.org
Tom Paulett	Waste Management	Senior District Manager	tpaulett@wm.com
Rob Dlugos	Civil&Environmental Consultants inc.	Project Manger	rslugos@cecinc.com

EPA Permit: The permit is the method for implementing institutional and engineering controls required as a condition of the Statement of Basis and Final Decision. The EPA Permit is effective as of January 24, 2012, and shall remain in effect through January 24, 2022, unless revoked and reissued (per 40 C.F.R. § 270.41), terminated (in accordance with 40 C.F.R. § 270.43), or continued (in accordance with 40 C.F.R. § 270.51(a)). Although the current permit has expired, in accordance with 40 C.F.R. § 270.51(a) the permit remains in effect through continuation. The following ICs and ECs apply to the Kelly Run Sanitation Inc facility, shown on **Figure 1**.

Institutional Controls (ICs) Status:

Land Use Restriction: The Facility shall not be used for residential purposes unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment and EPA provides prior written approval for such use. There were no residential structures observed at the time of the visit.

Groundwater Use Restriction: The groundwater from the Facility shall not be used for any purpose other than landfill operations, and to conduct the operation and maintenance and monitoring activities required by Pennsylvania Department of Environmental Protection (PADEP) and to implement EPA's selected remedy, unless it is demonstrated to EPA that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and EPA provides written approval for such use. Kelly Run Sanitation Inc. is currently in compliance with the above use restriction.

Engineering Controls (ECs) Status:

The approximately 35-acre WDA is a closed hazardous waste disposal landfill. The WDA was constructed with an engineered clay liner and leachate collection system (i.e., interceptor drain) and was capped with a very low density polyethylene (VLDPE) geomembrane in the early 1990s. The 17-acre OWA is a natural attenuation landfill that was capped in 1997. Phase I (9.0 acres) and Phase II (24.3 acres) landfill areas were constructed as lined landfills and were completely capped and closed in 1998. Both Phase I and Phase II have leachate detection zones. The Phase III area is a 48-acre permitted double-lined landfill with a leachate detection zone. The Phase III landfill is the only active waste placement area at the landfill and receives approximately 280 tons per day of solid waste.

The Old Waste Disposal and Western Disposal Areas continue to be maintained and monitored under the Facility's RCRA Post-Closure Permit No. PAD004810222 and the Municipal Solid Waste Operating Permit No. 100663, both issued by Pennsylvania Department of Environmental Protection (DEP Permits). Waste Management has maintained the integrity and effectiveness of the landfill caps by mowing approximately twice per year, and maintain the vegetative cover, monitoring the groundwater and leachate, and operating the groundwater remediation and leachate collection systems.

Groundwater Monitoring: The Facility's RCRA Post-Closure Permit and Municipal Solid Waste Operating Permit collectively impose operation and maintenance and groundwater monitoring requirements on the entire Facility. As part of its post-closure care and operating requirements, embodied in the permits, Waste Management conducts quarterly groundwater monitoring to assess releases from the Facility's waste disposal areas and landfills, and maintains the integrity and protectiveness of the landfill caps. Results of quarterly groundwater monitoring are reported annually.

Leachate Collection and Disposal:

A groundwater/leachate pumping system was installed down gradient of the WDA to collect and treat leachate and contaminated groundwater. Permit condition Part IV Section C of the approved Post-Closure permit specifies requirements for continued operation of the system. Thirty-Four (34) collection points were established over the site. Leachate is removed from leachate recovery wells in the Old Waste Area (OWA) (OW-1 through OW-7) and the Western Disposal Area (WDA) (W-3, W-4, W-8, W-12, W-14, W-15, and W-18), and the Benwood Aquifer recovery well MW-303R. Leachate from Kelly Run is collected and then discharged via sewer connection to the Elizabeth Borough Municipal Authority Wastewater Treatment Facility (EBMA). Kelly Run reports to Forward Township the total amount of leachate discharged to the EBMA on a monthly basis.

Groundwater Sampling History and Data Summary:

The monitoring network associated with the RCRA WDA is specified in the recently renewed PADEP Post Closure Permit issued on March 23, 2018. Data is screened with applicable 25 PA Code Chapter 250 groundwater quality standards. Quarterly samples are collected from the site monitoring wells and analyzed for the parameters identified in the Permit. A summary of the noted parameter exceedances and a discussion of groundwater analysis is presented below as excerpts from PADEP’s 2021 GME Report:

Reference June 1, 2021, Kelly Run Sanitation Groundwater Monitoring Evaluation:

Analyte Exceedance List

Monitoring Well	Landfill	Gradient	Parameter(s) in Exceedance
MW-301R	WDA & MWL	Up	BiCarbonate, Fe, Mn, Sulfate, Alkalinity, TDS, Turbidity
MW-302R2	WDA	Down	BiCarbonate, Fe, Mn, Sulfate, Alkalinity, TDS, Turbidity, Benzene, TOC, SPCond, Pb, As
MW-303R	WDA	Down	
MW-304	WDA & MWL	Down	Fe, Mn
Mw-307-D	WDA	Down	Chloride, SpCond, TOC
MW-310D	WDA & MWL	Down	Chloride, Turbidity, TDS, SpCond, pH
MW-310R	WDA & MWL	Down	Co, Fe, Mn, Bicarbonate, Turbidity
MW-311D	WDA & MWL	Down	Ba, Chloride
MW-312R	WDA & MWL	Down	Chloride, Fe, Mn, BiCarbonate, Alkalinity, SpCond, TDS
PZ-1	WDA	Down	Fe, Mn
PZ-2	WDA	Down	Fe, Mn
PZ-3	WDA	Down	Fe, Mn, SpCond, TOC
MW-201R	WDA & MWL	Up	Co, Sulfate
MW-204	WDA & MWL	Down	Sulfate, Turbidity
MW-211R1	WDA & MWL	Down	Sulfate, Turbidity
MW-P1U	WDA & MWL	Down	Fe, Mn, TDS
MW-P1D1	WDA & MWL	Down	Fe, Mn, Alkalinity, TDS
MW-P1D2	WDA & MWL	Down	Fe, Mn
MW-P2U	WDA & MWL	Up	Co, Be, pH, Sulfate
MW-P2D1	WDA & MWL	Down	Sulfate
MW-P2D2	WDA & MWL	Down	Sulfate

KR-2	WDA & MWL	Down	
FTR-2	WDA & MWL	Up	Fe, Mn
ST-2	WDA & MWL	Down	
ST-3	WDA & MWL	Down	Fe, Mn
ST5	WDA & MWL	Down	Fe, Mn
SP-3	WDA & MWL	Down	Fe, Mn
SP4	WDA & MWL	Down	

According to the June 1, 2021, Kelly Run Sanitation Groundwater Monitoring Evaluation - Analytical Discussion

Benwood Limestone:

The monitoring wells of the Benwood Limestone have a multiple of parameters exceeding the Statewide Health Standards (SWHS). In 11 of the 12 quarters, benzene has been detected in MW-302R2; ranging from 28.2µg/L in the First Quarter of 2018 and trending downward to 5.1µg/ L in the Third Quarter of 2020, and non-detect in the Fourth Quarter 2020. Arsenic and lead have been detected in MW-302R above the SWHS in various quarters, also showing signs of historic impact of hydrocarbons (specifically old, leaded gasoline wastes). Iron and manganese exceed the Secondary SWHS for a majority of the monitoring period, in all of the Benwood Limestone wells; constituents do not appear to demonstrate an increasing or decreasing trend. Chloride is present above the SWHS in wells MW-302R2, MW-307, MW-310D, MW-311D, and MW-312R. All five wells are demonstrating an increasing trend. Sulfate exceeds the SWHS for a majority of the monitoring period, in all of the Benwood Limestone wells with the exception of MW-302R2 (below the SWSH for all 12 quarters); none of the constituents demonstrate an increasing or decreasing trend. Total Organic Carbon, with exceedances in all wells except MW-304, is showing either a flat or an increasing trend over the twelve quarters from 2018 to 2020. Total Organic Carbon is a screening parameter for elevated hydrocarbon. This in combination with the benzene exceedances may be an indication of hydrocarbon impacts.

Specific Conductance is generally elevated among the Benwood Limestone wells. Monitoring wells MW-302R2, MW-307, MW-310D, MW-311D, and MW-312R demonstrate conductivity well in excess of the recommended threshold of 2,030 µmhos, ranging from 3,020 µmhos to 7,890 µmhos. Total Dissolved Solids are elevated above the recommended drinking water threshold of 650 mg/L in all of the Benwood Limestone wells except for MW-304 which had excessive levels in early 2018 and is trending downward since. TDS in combination with Turbidity in wells may be an indication of impacts or issues with sample collection methods. MW-310D has a much higher pH than any other on the site, generally above 12. Establishing a trend has been difficult as this well is only sampled annually. The monitoring wells of the Benwood Limestone are still showing signs of the previous impacts noted in the historical assessments. It is reported by Waste Management that MW-303R (recovery well) is removing impacted water from the aquifer.

Pittsburgh Coal:

Monitoring wells of the Pittsburgh Coal are mostly confined to the eastern portion of the site. These wells show a definite mine impact. Iron, manganese, and sulfate are present, and in

excess of the secondary drinking water standards. The two upgradient locations, MW-201R and MW-P2U have exceedances of Cobalt, and additionally, MW-P2U has periodic exceedances of Beryllium. PADEP has recommended that Waste Management investigate these metals further. MWP2U also has the lowest pH of the well on the site, usually 3.5 to 4.5, which is not uncommon for a mine impacted well. However, this is reportedly an isolated trend, and should be investigated by KRS.

The following conclusions were drawn in PADEP's 2021 Groundwater Monitoring Evaluation:

- The Benwood Limestone is still showing signs of historic impact and should continue to be monitored. Pump and treat should be examined as to its effectiveness.
- MW-302R2 shows signs of impact from a multitude of constituents.
- MW-303R is reported to be collecting impacted groundwater and conveying it to treatment.
- The downward trend of benzene in MW-302R is promising, but should continue to be evaluated for a rebound.
- The presence of heavy metals should be evaluated in the upgradient wells MW-201 and MWP2U.
- The monitored natural attenuation of OWL and WDA is not advancing the remediation as rapidly as originally proposed. Additional efforts may be necessary. An updated analysis of the pumping system, corrective action requirements for the Benwood Limestone zone and a thorough determination if statically significant changes have taken place was recommended.

Waste Management issued a response to the concerns/recommendations presented in PADEP's 2021 Groundwater Monitoring Evaluation letter and has documented responses and/or corrective measures taken in a December 17, 2021 letter to PADEP.

Waste Management's most recent report of groundwater monitoring for the 2nd quarter of 2022 concluded the following:

- Continued landfilling activities do not appear to be altering the groundwater conditions.
- The groundwater monitoring network is capable of monitoring the Benwood and Pittsburgh Coal Hydrostratigraphic units.
- The frequency of sampling and the constituents analyzed are appropriate for determining if a release has occurred.

Financial Assurance: Financial assurance is required for this Facility. A financial assurance evaluation, which includes a review of site operation and maintenance costs, is completed annually by Waste Management.

Reporting Requirements/Compliance: All reporting requirements of the DEP Permits have been met. CCSWA submits annual Water Quality Monitoring Plan reports the last of which was received in June 2022.

Mapping: The EPA facility website map is accurate and includes the 408-acre Kelly Run Sanitation property. A downloadable geospatial PDF map is available on EPA’s corrective action facility webpage under the “Reports, Documents and Photographs” section, found at: https://www.epa.gov/sites/default/files/2016-03/documents/geospatialpdf_kellyrun_0.pdf

Conclusions and Recommendations: No EC/IC deficiencies were identified. As seen in picture 4, some monitoring well locations were not clearly marked, were difficult to access due to overgrown vegetation, or had missing signs. Overall, the facility appeared to be well maintained, with landfill cover in good condition. EPA has determined that the remedy institutional and engineering controls have been fully implemented.

Files Reviewed:

1. EPA RCRA Post Closure Permit, Kelly Run Sanitation, Inc. (including PADEP’s RCRA Post Closure and Municipal Solid Waste Operating Permits), 11/23/2011
2. EPA Statement of Basis, Kelly Run Sanitation, Inc., 11/23/2011
3. EPA Final Decision Response to Comments, Kelly Run Sanitation, Inc., 1/24/2012
4. PADEP Groundwater Monitoring Evaluation, 6/1/2021
5. Waste Management Second 2022 Quarter Groundwater Monitoring Report, 8/2022
6. Waste Management’ PADEP Surety Bond (Financial Assurance Document), 5/1/2018

Attachments:

Figure 1: Aerial Map of Kelly Run Sanitation Facility

Picture 1: From top of Western Disposal Area cap facing south

Picture 2: Leachate Collection point OW-1

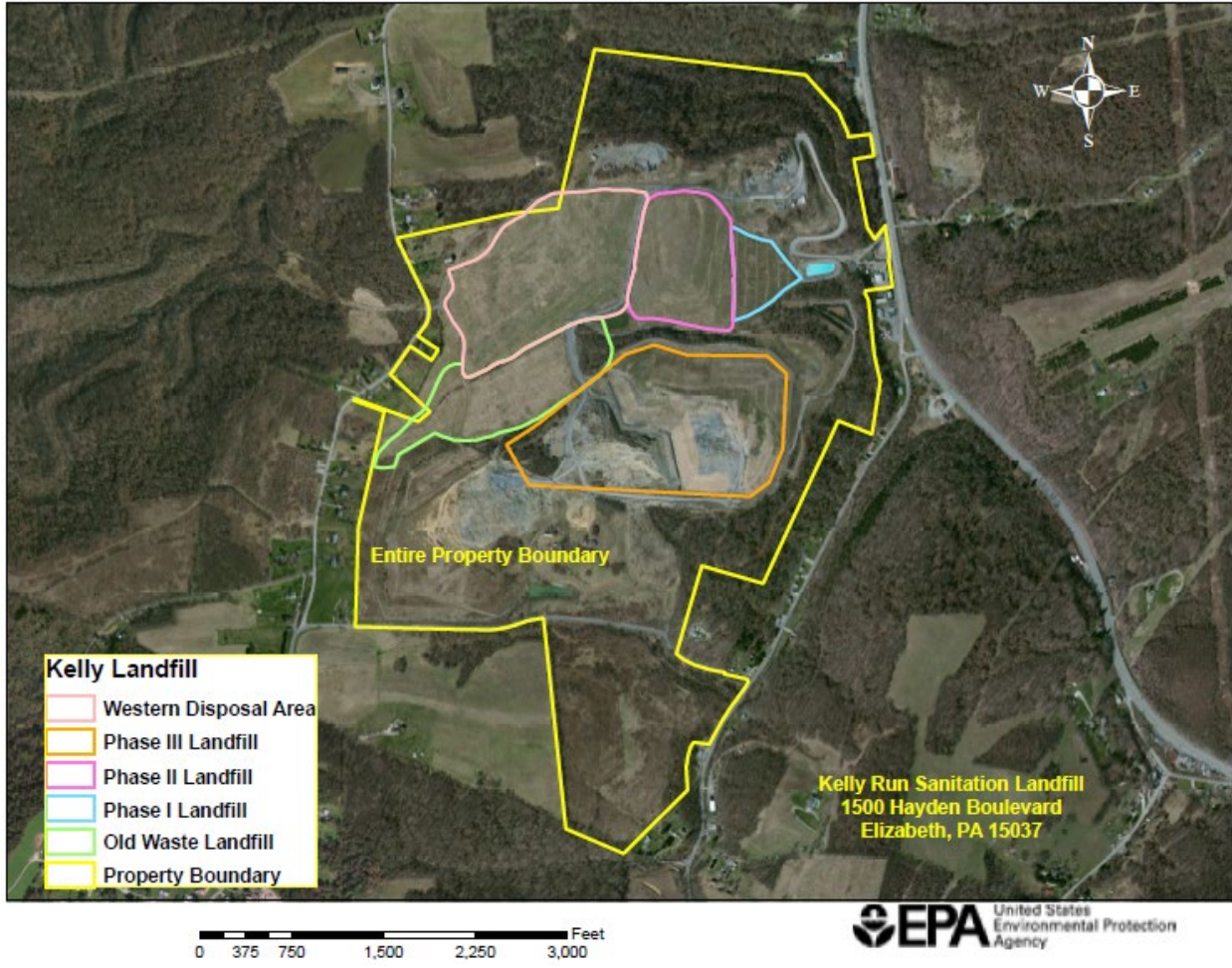
Picture 3: Leachate Collection Point OW-3

Picture 4: Monitoring Well - MW 204 – ID marking/signage missing

Picture 5: Top of Old Waste Disposal Area Facing West

Picture 6: Facility Berm Facing Southwest

Figure 1: Aerial Map of Kelly Run Sanitation Facility Property



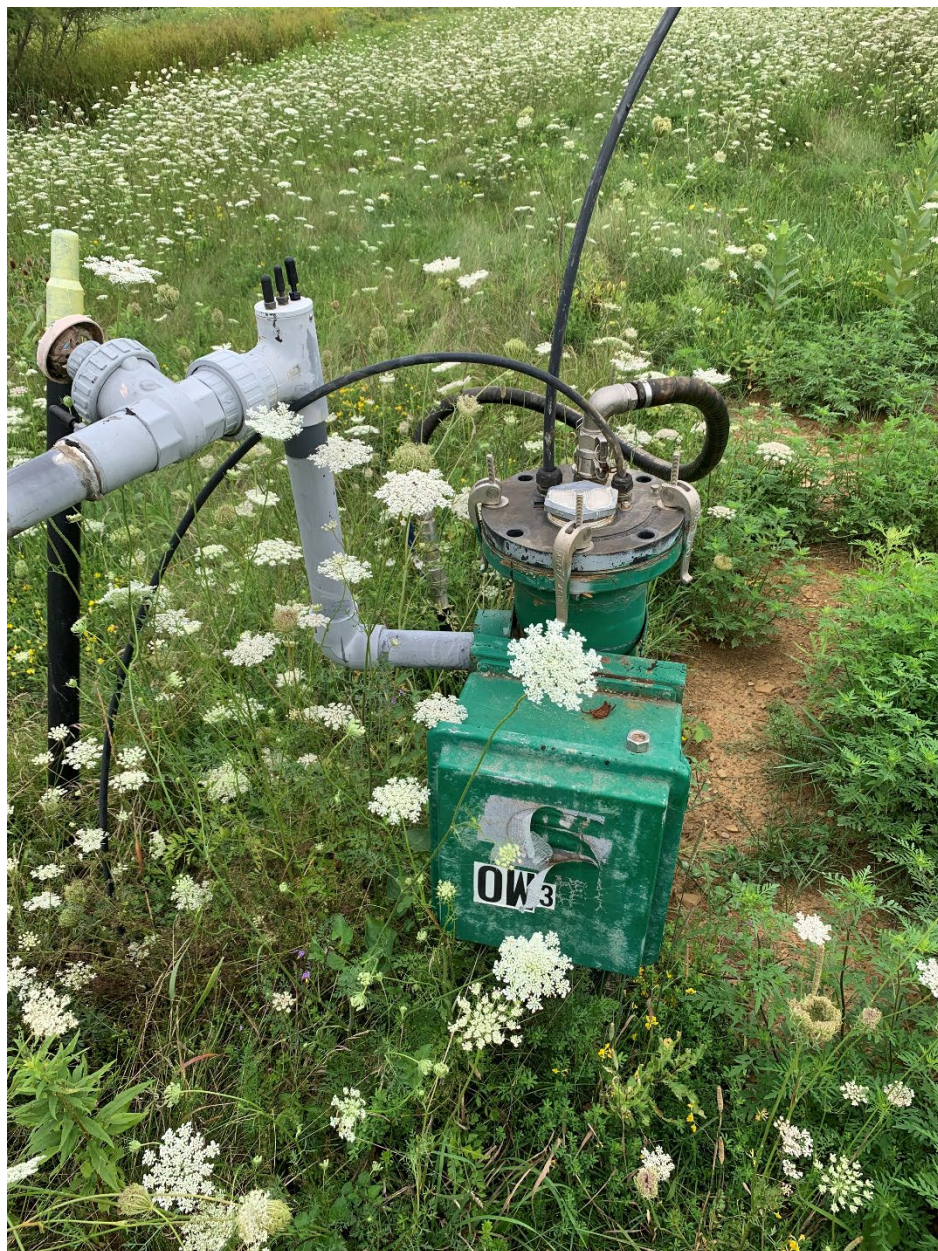
Picture 1: From top of Western Disposal Area cap facing south



Picture 2: Leachate Collection point OW-1



Picture 3: OW-3 Leachate Collection Point



Picture 4: MW 204 – ID marking/signage missing



Picture 5: Top of Old Waste Disposal Area Facing West



Picture 6: Facility Berm Facing Southwest



