State of New York
County of Broome Government Offices

Department of Public Works-Division of Solid Waste Management
Jason T. Garnar, County Executive · Debra A. Smith, Director

January 25, 2019

Payson Long, P.E.
NYS Dept. of Environmental Conservation
Division of Environmental Remediation, 11th Floor
625 Broadway
Albany, NY 12233

Re: Colesville Landfill, Site No. 704010
Periodic Review Report 2016-2018

Dear Payson,

Enclosed is the 2016-2018 Periodic Review Report for the Colesville Landfill. Attachments include the Certification of Institutional/Engineering Controls, a site map, and the yearly inspection reports with pictures.

Arcadis is finishing up the 2018 annual monitoring report, which will include sampling results data and tables. It primarily focuses on the surface and spring water monitoring since the June/July Monitoring Data Report was previously submitted August 15, 2018. The annual report is referenced in the PRR and I hope to have it to you soon.

The last sampling event for seeps, sediment, and surface water was in December. Due to my clerical error in transmitting the monitoring list to ALS Labs, VOCs and metals were not sampled for surface water points SW-2, SW-3, SW-4, and F-6, but field parameters were included, as well as, all parameters for the seeps and sediment. This error is also noted in the report. I hope this is not a problem as these waters are historically below any levels of concern. They will be sampled again in the Spring on the usual schedule. The 5th quarter well monitoring event is scheduled for the 3rd quarter of 2019.

Respectfully,

Laurie Haskell

Laurie Haskell, Solid Waste Management Specialist

CC: Leslie G. Boulton, P.E., Acting Commissioner of Public Works
Debra A. Smith, Director of Solid Waste Management
Steve Feldman, Arcadis

Enclosure

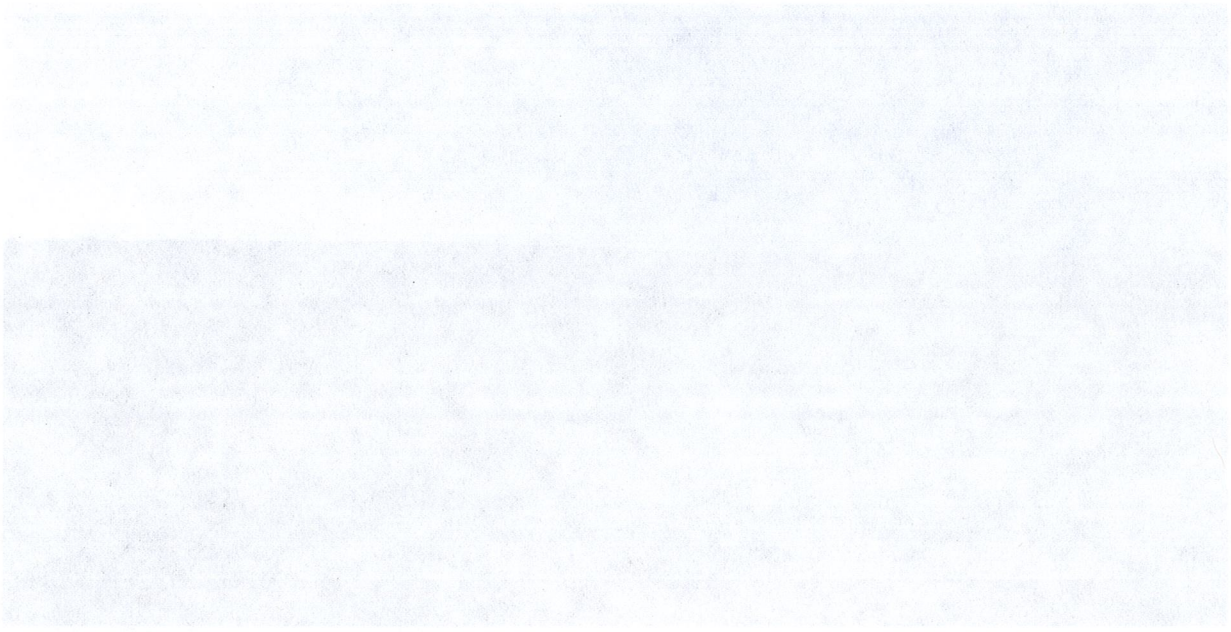
COLESVILLE LANDFILL
SITE NO. 704010
PERIODIC REVIEW REPORT
BROOME COUNTY
DIVISION OF SOLID WASTE MANAGEMENT
January 1, 2016 - December 31, 2018

I. Executive Summary

A. History

The Colesville Landfill (hereinafter referred to as the "Site") is listed as Site No. 704010 and was remediated in accordance with State Assistance Contract (SAC) # C093001, and Order on Consent Index #T010687, which was executed on April 13, 1987. The Site is about 35-acres. The primary pollutants are volatile organic compounds (VOCs) that are limited to the upper aquifer, which is underlain by a confining unit comprised of glaciolacustrine deposits. The landfill parcel has an environmental easement that prohibits the development or use of the property in any way that could interfere with the remedy and it prohibits the installation of drinking water wells. Also included under this institutional control are other adjacent County owned parcels with Tax ID#s 118.02-1-5, 118.04-2-24 and 118.04-2-25. In February 2015, Thomas Scott signed an Environmental Easement that is held by the County for the property directly adjacent and downgradient of the landfill, tax parcel ID #118.04-2-23.

Remedial activities to date include placing a geomembrane cover system on the landfill (1995), installing subsurface passive treatment systems for springs SP-5 (2003) and SP-4 (2004), and installation and startup in September 2002 of an in-situ reactive zone (IRZ) consisting of 17 molasses injection wells with an automated system and 3 downgradient groundwater extraction wells with air stripper. These remedies were approved for implementation by the USEPA



through issuance of Explanation of Significant Differences (ESD) issued in 2000, 2004 and 2010. In October 2012, the injection and pumping well systems were shut down as part of the IRZ Discontinuation Pilot Test. In October 2016, an ESD was issued that required soil gas sampling, if structures are built on the Site or if nearby vacant houses are occupied, to determine if a vapor intrusion pathway could potentially be of concern.

Passive treatment systems currently operating are the carbon filtration of the seep at SP-5 and the subsurface stone trenches upgradient of SP-4.

A Remedial System Optimization Report was submitted to the NYSDEC in March 2017 which concluded that site conditions were protective of human health and the environment without remediation of groundwater via injections and recovery wells (Arcadis 2017). Based on the findings in this report, the NYSDEC issued a change in classification for the Colesville Landfill in the Registry of Inactive Hazardous Waste Disposal Sites. In a letter from the NYSDEC dated September 27, 2017, Broome County was notified of a classification change from 2 to 4 based on the rationale that remedial actions have successfully achieved remedial action objectives and residual contamination is being managed under a Site Management Plan (SMP) that includes environmental monitoring.

B. Effectiveness

Ten years of active site remediation significantly reduced the level of contamination. The 5-year review report issued by the EPA in May of 2015 found that "the remedy protects human health and the environment in the short term because unacceptable exposure to contaminated media has been interrupted by the implementation of the remedial actions and institutional controls are in place."

The last 5th quarter sampling event occurred in June 2018. A letter report with tables and graphs was prepared by Arcadis and submitted to NYSDEC on August 15, 2018. Total VOC concentrations in the mid-plume area (GMMW wells) range from approximately 63 micrograms per liter (µg/L) to 230 µg/L and decline significantly in the downgradient direction with total VOC concentrations ranging from non-detect to 73 µg/L. Overall, the degradation trend figures showed that at key locations within the groundwater plume there has been a significant decrease in VOC mass since initiation of IRZ injections, and the VOC mass continues to be either decreasing or stable since IRZ discontinuation.

Remedial progress during the last three years resulting from biodegradation of VOCs is evident, as shown by the change in TVOC concentrations in key wells from September 2014 to June 2018 in the Table below.

Total VOCs (µg/L)			
Well	Location	9/8/2014	6/14/2018
GMMW-2	Mid plume	100	70
GMMW-5	Mid plume	67	85
GMMW-6	mid plume	320	210
GMMW-7	Landfill perimeter	130	63
PW-7	Landfill perimeter	630	63
W-18	Plume boundary	57	22

GMPW-4	Downgradient former recovery well	150	83

To achieve Site closure the groundwater must be restored to drinking water standards. Based on years of remediation at this and multiple other documented Superfund sites, it could take decades to reach this goal. Very often once a site has reached a plateau of contamination in the 50 -100 parts per billion range, active remediation becomes less effective. Natural biodegradation of contaminants is occurring at the Site and such processes are expected to continue to degrade the plume and restore groundwater to applicable standards in a similar time frame as, and at less cost than, active remediation.

C. Compliance

There are no areas of non-compliance. The SMP is being fully implemented.

D. Recommendations

Recommended changes to the SMP include:

- Incorporation of the recommendations of IRZ report to the SMP text
- Update of the O&M section to include landfill cap maintenance
- Revision of the inspection checklist (Appendix N) to include the treatment building
- Revise the monitoring schedule to include semiannual monitoring of surface water and SP-5; and include MNA parameters
- Add the residential testing to the monitoring section as 5th quarter testing.
- Add site reclassification from 2 to 4.
- Update monitoring table to revised formatting in PRR 2018
- Remove groundwater treatment plant O&M

Site management is to be ongoing.

II. Site Overview

Attached is a Site Plan figure. The Site location, boundaries, and plume description are documented in the SMP. The plume has not changed significantly in size or location during this reporting period; however, the concentrations at monitoring wells have generally declined or remained stable.

The main features of the Site's current remediation include:

- A geomembrane capping system
- Fenced perimeter
- Institutional controls to restrict site development and the use of groundwater
- Passive mitigation systems at the SP-4 and SP-5 springs

Active remediation systems previously implemented at the Site include:

- A Pump and Treat system for 3-downgradient wells, and

- An Automated Reagent Injection system that includes seventeen carbon source (molasses or mol-whey solution) injection wells.

III. Evaluation of Remedy Performance, Effectiveness and Protectiveness

Remedy performance has been well documented by Arcadis in the following reports, which include tables, graphs and charts:

- In-Situ Reactive Zone Discontinuation Pilot Test Report (September 2015);
- Remedial System Optimization Report (March 2017);
- 2016 Annual Monitoring Report (April 2017);
- Revised 2017 Annual Monitoring Report (July 2018);
- June/July Monitoring Data Report (August 2018); and,
- 2018 Annual Monitoring Report (January 2019).

Information in these documents summarize monitoring results since 2012 and conclude that:

- The concentrations of VOCs decreased or remained stable when compared with historical data.
- Enhanced and/or natural biodegradation mechanisms continue to degrade chlorinated VOCs within the discontinuation pilot test area despite the discontinuation of carbon injections as evidenced by stable VOC concentrations and elevated ethene and/or ethane.
- The concentration of methane decreased but remained elevated when compared to baseline conditions within the mid-plume area monitoring wells. In addition, the presence of elevated concentrations of degradation end products (ethene and ethane) corroborate that enhanced biodegradation continues to occur since discontinuation of injections.
- The concentration of TOC generally decreased to the approximate levels observed during baseline conditions. Some locations remained slightly elevated, which likely represents the endogenous decay of the previously enhanced microbial population.
- There have not been any discernable changes in the appearance of the springs, except for an increase in willows and grasses in the area of SP-3.
- VOCs and metals concentrations in surface water remain low to non-detect and consistent with historical data, despite the presence of VOCs and metals in some spring waters at concentrations above NYSDEC WQS.
- The sediment results for SP-3-SED indicate that impacts are mostly limited to the surface and that limited excavation of the surficial sediment is a viable interim measure.

Also of note is the decreasing trend of VOCs in the three springs along the North Stream during this reporting period. The average total VOCs in SP-4 went from 36 µg/L in 2016 to 10 µg/L in 2018. The average total VOCs at SP-3 was 70 µg/L in 2016 and 22 µg/L in 2018. Of the 8 VOCs detected at SP-3 in December 2018, the highest concentration was 1,1-Dichloroethane (1,1-DCA) at 9.6 µg/L. VOCs were not detected in SP-2 in December 2018.

In December of 2018, the sediment sample obtained at SP-3 for metals analysis had a solids content of 74.2 percent, which allowed for more reliable results that in the past when samples had a high moisture content. When the moisture content is very high, metals are likely in the sediment pore water and when the sample results are normalized to a dry weight basis by the laboratory the result is very high concentrations of metals in the sediment. Metals in the SP-3 sediment were all below the Class A screening values. Broome County inadvertently included VOC testing of the sediment for this event. There were no VOCs detected other than acetone (10 µg/L), which is not a chemical of concern on site and may be a false positive artifact.

IV. IC/EC Plan Compliance

A. IC/EC Requirements and Compliance

The landfill cap and perimeter fence were inspected on November 10, 2016, October 4, 2017 and May 17, 2018 by Laurie Haskell, Broome County Solid Waste Mgmt. Specialist and other county staff. The cap system was found to be well maintained and functioning as intended. Check list forms and pictures are attached.

Also during these inspections, the landfill and adjacent properties with environmental easements were observed for any prohibited activity such as residential or groundwater use. There was no such activity.

B. IC/EC Certification

Overall, the institutional and engineering controls are working as intended and in compliance with the SMP. Certification forms are attached.

V. Monitoring Plan Compliance

A. Components of the Monitoring Plan

Below is Table 2 from the SMP, revised in May 2017, that lists the monitoring requirements for the Site. The Table shown below has had further clarifications that will be included in the SMP when that document is revised again. NYSDEC had requested that the surface water be sampled semi-annually at the same time as the springs, so the Table was also modified to reflect those changes. The NYSDOH and NYSDEC concurred with a reduction of residential well monitoring, from quarterly to a 5th quarter basis.

In addition, NYSDEC requested the analysis of per- and polyfluoroalkyl substances (PFASs) for a subset of 7 monitoring wells sampled on March 29, 2017. In accordance with NYSDEC requirements, PFASs were analyzed via EPA Method 537 for the six (6) substances originally monitored as part of EPA's UCMR3 (third Unregulated Contaminant Monitoring Rule). The same subset of wells was also sampled for 1,4-dioxane. This special sampling is not expected to be repeated as the results were below threshold parameters.

Monitoring/Inspection Schedule

Sample ID	VOCs Method 8260C	Dissolved & total iron	Water Level	Dissolved gases	NO_3, SO_4	TOC	Field Parameters	Frequency
GMMW-2	L	L	F	L	L	L	F	5th quarter
GMMW-5	L	L	F	L	L	L	F	5th quarter
GMMW-6	L	L	F	L	L	L	F	5th quarter
GMMW-7	L	L	F	L	L	L	F	5th quarter
PW-4	L	L	F	L	L	L	F	5th quarter
PW-3	L	L	F	L	L	L	F	5th quarter
PW-5	L		F				F	5th quarter
W-7	L		F				F	5th quarter
W-16S	L	L	F	L	L	L	F	5th quarter
W-18	L	L	F	L	L	L	F	5th quarter
PW-7	L	L	F	L	L	L	F	5th quarter
W-17S	L		F				F	5th quarter
W-20S	L		F				F	5th quarter
GMPW-4	L	L	F	L	L	L	F	5th quarter
Spring/Surface Water Monitoring								
Sample ID	VOCs	Metals						Frequency
SP-2	L	L					F, (w/o ORP)	semi-annual
SP-3	L	L					F, (w/o ORP)	semi-annual
SP-4	L	L					F, (w/o ORP)	semi-annual
SP-5 influent	L	L					F, (w/o ORP)	semi-annual
SP-5 effluent	L	L					F, (w/o ORP)	semi-annual
All springs visual/photo monitoring								
F-6	L	L					F, (+ DO)	semi-annual
SW-2	L	L					F, (+ DO)	semi-annual
SW-3	L	L					F, (+ DO)	semi-annual
SW-4	L	L					F, (+ DO)	semi-annual
Sediment Sampling		*Metals 6010C*			% solids			
SP-3-Sed		L			L			semi-annual
Cover System Monitoring								annually

Notes:
L = Laboratory Analysis

NO_3 = Nitrate
SO_4 = Sulfate
TOC = Total Organic Carbon
Field Parameters = ORP, Temperature, pH, Conductivity, Turbidity
ORP = Oxidation Reduction Potential
Dissolved gases = Methane/Ethene/Ethane, Method RSK 175

	MRL (ug/L)	MDL (ug/L)
Methane	1	0.5
Ethane	1	0.162
Ethene	1	0.138

Residential testing is now on a 5th quarter basis for:

- Marcy
- Gaines
- Lee Spring

B. Summary of Monitoring Completed

All monitoring was done in compliance with the SMP, except for the 4th quarter surface water sampling event. See Section D below for more information. The results are reported under separate cover in the documents listed in Part III above.

The monitoring report for the last 5th quarter groundwater sampling event of June 2018 was prepared and submitted by Arcadis on August 15, 2018. This report included a summary of results and tables of all data since 2012 for groundwater monitoring wells and SP-3 sediment. The next 5th quarter monitoring event will be conducted during the 3rd quarter of 2019 and reported in the next PRR.

The data from sampling events are regularly uploaded to the Department's EQuIS™ database.

Additional monitoring is conducted on an as-needed basis when requested by the DEC. As requested by the DEC during 2017, per- and polyfluoroalkyl substances (PFASs) were analyzed via EPA Method 537 for the six (6) substances originally monitored as part of EPA's UCMR3 (third Unregulated Contaminant Monitoring Rule). The same subset of wells was also sampled for 1,4-dioxane. The concentration of 1,4-dioxane ranged from below the limits of detection to 1.9 µg/L. EPA has established a lifetime health advisory of 0.2 mg/L for 1,4-dioxane in drinking water (EPA 2012). The analytical results for the sampling of PFASs ranged from below the limits of detection to 9.8 ng/L, and total PFASs were well below the USEPA health advisory levels of 70 ng/L (parts per trillion [ppt]).

C. Comparisons with Remedial Objectives

Based on data collected from PW-7 during the 2011 to 2014 timeframe, elevated VOC concentrations were noted by EPA in their Five-Year Review Report issued in May 2015. At

their recommendation, further testing of that well was conducted. Although total VOC concentrations in PW-7 showed a relative increase from 2016 to 2017, there has been a significant decline in TVOC concentrations observed since 2014; the last observed value was 63 µg/L in 2018 versus 440-630 µg/L in 2014.

Further downgradient from the landfill perimeter in the mid-plume area (i.e., GMMW-5, GMMW-6, and GMMW-2), concentrations of chlorinated ethenes have significantly decreased, with DCA and CA being the primary VOCs present in groundwater.

In downgradient monitoring wells near East Windsor Road (i.e., PW-4, PW-3 and W-16S), TVOC concentrations range from below the limits of detection to 33 µg/L. In GMPW-4, which is a former recovery well, TVOC concentrations have decreased over time to 73 µg/L.

Concentrations of TVOCs south of East Windsor Road (i.e., W-18 and W-20S) were below the limits of detection in W-20S and have generally been steadily decreasing in W-18 to a value of 22 µg/L in 2018. Note: W-18 is located on a property with institutional controls.

Groundwater cleanup goals specified in ROD compared to most recent results

Compound	ARAR Range (µg/L)	Max Conc. 2018 (µg/L)	Well ID	Number of wells over max. limit out of 14 sampled
Benzene	ND-5	4.3 J	GMMW-6	0
Chlorobenzene	5.0-20.0	24	W-16S	1
Chloroethane	5	190	GMMW-6	6
1,1-Dichloroethane	5.0-50.0	26	GMMW-2	0
1,1-Dichloroethene	0.07-7.0	ND	All samples	0
Trans-1,2-dichloroethene	5.0-50	0.88 J	GMMW-6	0
1,2 Dichloroethane	0.8-5	0.84 J	GMMW-6	0
1,2-Dichloropropane	5.0-50.0	0.45 J	GMPW-4	0
Ethylbenzene	5.0-50.0	ND	All samples	0
Toluene	5.0-50.0	ND	All samples	0
1,1,1-Trichloroethane	5.0-200.0	ND	All samples	0
Tetrachloroethene	0.7-5.0	ND	All samples	0
Trichloroethene	3.0-10.0	25	GMPW-4	1
Total Xylene	5.0-50.0	0.55 J	GMMW-6	0
Vinyl Chloride	0.3-5.0	5.9	GMMW-7	1

D. Monitoring Deficiencies

The seeps were tested for VOCs, metals, and field parameters, but VOCs and metals were inadvertently dropped from the parameters list for the surface waters (stream). Those parameters

are typically found at trace to non-detectable levels, so when the error was discovered in January of 2019 it was decided to just resume normal sampling in the 2nd quarter, 2019.

E. Conclusions and Recommendations

The monitoring program is well designed to provide the data necessary for overall site evaluation. The current monitoring results and evaluations demonstrate the overall effectiveness of the Site remediation processes.

Recommendations include conducting plume monitoring for residual VOCs via groundwater/surface water/spring water monitoring according to the SMP, which was revised in 2017 to include sampling of additional biodegradation parameters in the downgradient monitoring wells. Also, the County will continue to inspect springs and monitor and remove surficial spring sediment.

VI. O&M Plan Compliance

A. Components of O&M Plan

The Operation and Maintenance portion of the SMP, contained in Section 4, primarily covers O&M aspect for the Automated Reagent Injection System and the Groundwater Pump and Treat System should either of those be placed in operation. Since these are currently not operating they will not be addressed in this PRR. Other maintenance items included in Section 4 are:

- Operational performance monitoring of the SP-5 spring remedy is conducted on a semiannual basis and includes routine visual inspection, recording system field parameters, and maintenance on system equipment (as necessary, such as clearing deposited material from the discharge pipe, carbon media change-out).
- During semi-annual maintenance events the springs along the North Stream will be checked for iron oxide staining on the ground and in the shore line sediments. If present, the top layer of soil/sediment will be collected and taken to the Broome County Landfill for disposal.
- Landfill cap and fencing maintenance

B. Summary of O&M Completed During Reporting Period

- The landfill cap was mowed at least annually.
- Trees were removed from the perimeter fence of the landfill as needed and the fence was straightened.
- The surface sediment was removed in the areas of SP-3 and SP-4 at least annually and as needed. During the November 10, 2016 event sediment at SP-3 was removed to rock and a bucket of upstream sand was collected and placed there to facilitate future scrapings.
- SP-3 formed a channel along the streambank that was sampled at its midpoint in March and towards the end of the channel in December 2016. This extra sampling along the

channel was done to evaluate the extent of necessary sediment removal. Subsequently, the seep was redirected to its original shorter distance.

- During the 2018 June/July events, samples were taken prior to and then following the cleanup to evaluate the effectiveness of the scraping.
- Deposited material was cleaned out of the SP-5 drainage pipe during monitoring.

C. Evaluation of Remedial Systems

Maintenance required for next year:

- Mow landfill cap
- Snake and clean SP-5 drainage pipe and remove deposited material at the outfall
- Remove surface sediment by SP-3

D. O&M Deficiencies

There were no deficiencies in O&M during this period.

E. Conclusions and Recommendations for Improvements

O&M activities were successfully completed on the Site and in compliance with the SMP. There is no known need for improvements at this time.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP

a. IC/EC – institutional and engineering controls are in place and functioning as intended and in full compliance with the SMP
b. Monitoring – is being performed in general compliance with the SMP, meeting the requirements of the Plan. The SMP will be officially revised to include the additional monitoring requirements proposed in 2017.
c. O&M – operational and maintenance activities were performed in compliance with the SMP.
d. Recordkeeping – is in compliance with the SMP.

B. Performance and Effectiveness of the Remedy

The landfill cap is preventing infiltration of water into the waste, thereby limiting the infiltration of contaminants to the ground water. The fence is intact and the property is secured. Institutional controls prohibit the use of groundwater for human use or consumption.

Some seeps continue to contain low levels of VOCs. SP-4 had a decreasing trend during this period from 41 µg/L TVOCs in 2016 to 10 µg/L in 2018. SP-3 exhibited a range of variability and fluctuated from 100 µg/L to 11 µg/L, with the last results being 22 µg/L TVOCs. Iron and manganese remain at high levels in these two springs and will be closely examined in future monitoring. This is inferred to be indicative of continued reducing conditions in the plume.

Ongoing sampling of the North Stream shows that the presence of VOCs in the stream water is essentially nondetectable (i.e., generally below reportable limits).

Remediation of contaminants in groundwater via natural biodegradation is occurring and is being evaluated on an ongoing basis. There have been no observed negative impacts from the discontinuation of the active treatment systems.

C. Future PRR Submittals

Future PRR reports will be submitted on an annual basis unless otherwise directed by the NYSDEC.

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7)**:**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **704010**

Site Name Colesville Landfill

Site Address: ~~East River Road~~ 1538 EAST WINDSOR Rd 13813 Zip Code: ~~13787~~

City/Town: Colesville

County: Broome

Site Acreage: 35.000

Reporting Period: December 31, 2015 to December 31, 2018

	YES	NO
1. Is the information above correct?	☐	☒
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 704010 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
01000048S100X0000000	BROOME COUNTY DPW	Soil Management Plan Ground Water Use Restriction Landuse Restriction Monitoring Plan O&M Plan IC/EC Plan Site Management Plan

ICs for the site include a groundwater use and land use restriction and adherence to a site management plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
01000048S100X0000000	Cover System Fencing/Access Control

ECs for the site include Cap/Cover system and Fence/ access control

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 704010

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Leslie G. Boulton at P.O. Box 1766 Binghamton, NY 13902.
print name print business address

am certifying as Owner Representative of Broome County DPW (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Leslie G. Boulton 01-14-19
Signature of Owner, Remedial Party, or Designated Representative Rendering Certification — Date

IC/EC CERTIFICATIONS

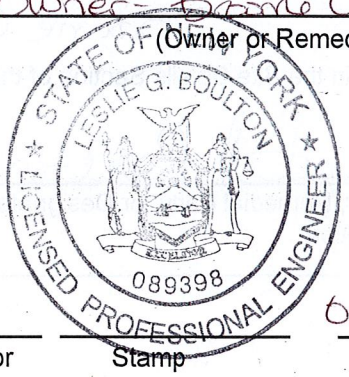
Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Leslie G. Boulton at P.O. Box 1766, Binghamton, NY, 13902
print name print business address

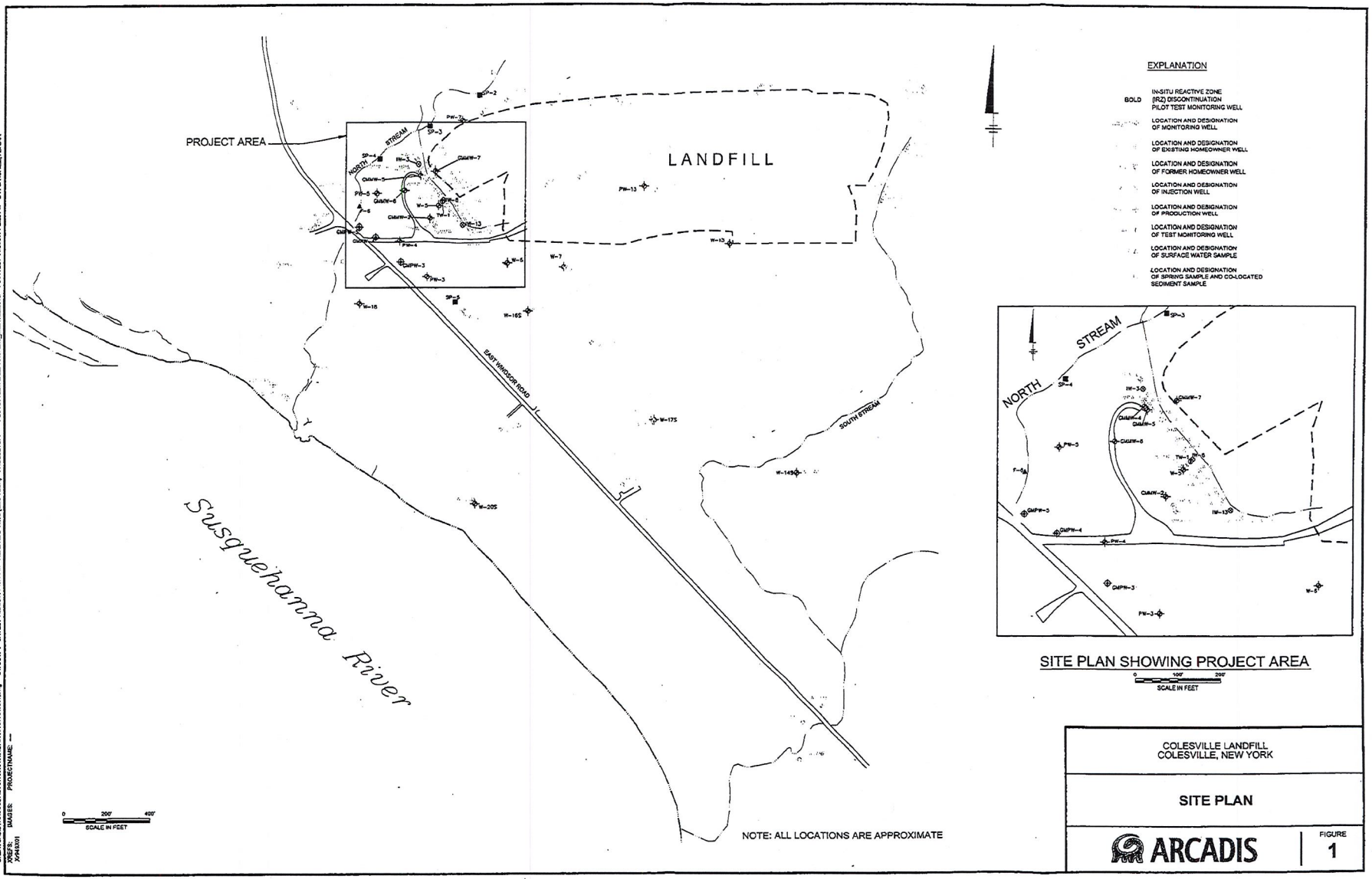
am certifying as a Professional Engineer for the Owner - Broome County DPW.
(Owner or Remedial Party)



Leslie G. Boulton — Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

01-14-19 — Date



SITE PLAN SHOWING PROJECT AREA

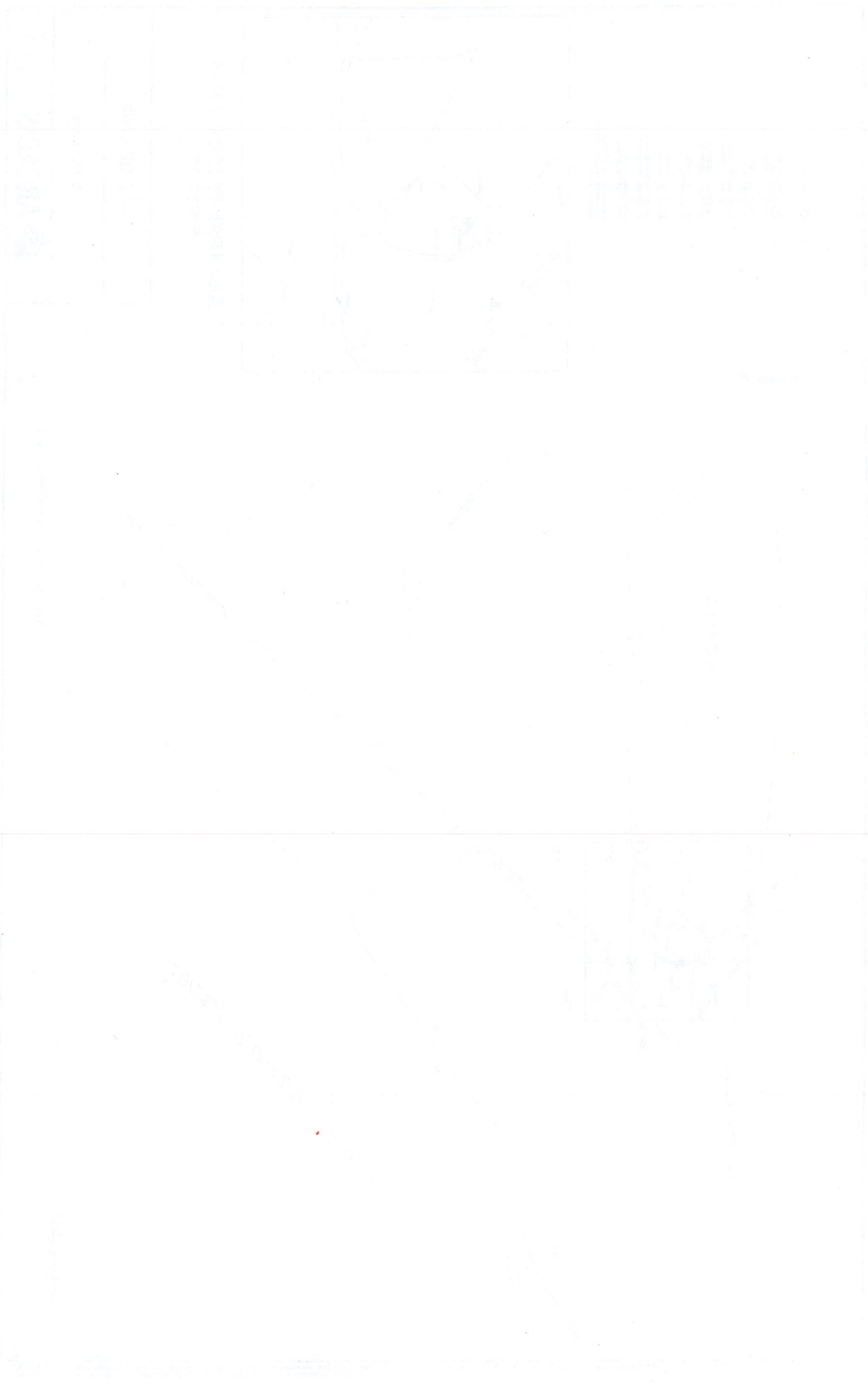
COLESVILLE LANDFILL
COLESVILLE, NEW YORK

SITE PLAN

ARCADIS

FIGURE 1

FROM: INSITU REACTIVE ZONE DISCONTINUATION PILOT TEST REPORT 2015



Colesville Inspection Checklist

Date: 11/10/2016 **Time:** 9:30

Inspected by: Laurie Haskell

Engineering Controls

No.	Landfill Property and Cap:	Yes	No
1	Is the access road stable and free of erosion?	x	
2	Are the culverts and drainage ditches free from sediment and debris?	x	
3	Any visible debris, litter, and/or waste on the site?		x
4	Are the gates and fences in good condition, operational and with locks?	x	
5	Is the vegetation providing adequate protection from erosion?	x	
6	Are there any woody plants growing on the cap?		x
7	Was the cap vegetation mowed this year?	x	
8	Is there any settlement, ponding, or animal burrows?		x
9	Are the gas venting pipes in good condition?	x	
10	Is the SP-5 remedy functioning as intended?	x	
11	Is the SP-4 remedy intact (no stream bed erosion)?	x	
12	Was the SP-3 iron-stained area cleaned this year?	x	
13	Is the rip rap armored bank above Sp-3 stable and free of erosion?	x	
14	Is the treatment building secure and in good condition?	x	
15	Locks on wells?	x	

Institutional Controls

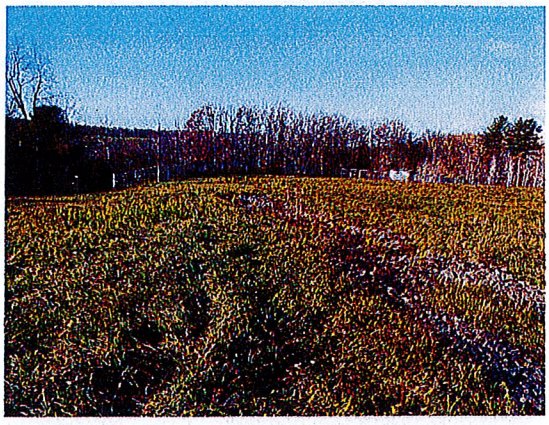
	Yes	No
Are there any new or inhabited buildings on any easement properties? (includes County and Tom Scott properties)		x

If problems are noted, describe them below and attach a picture and location sketch

There is a tree down on the north fence that caused some slight bending of the fence. It will be removed and fixed.

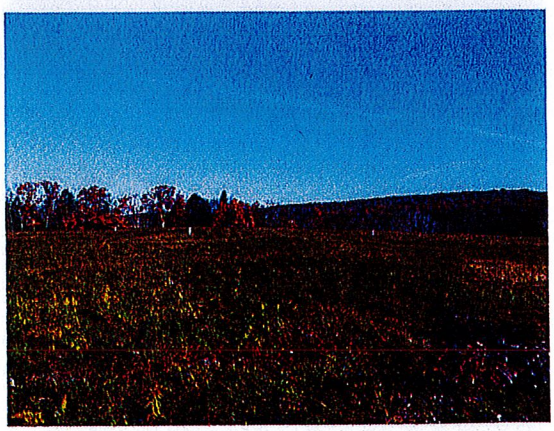
Colesville Annual Inspection 2016

Pictures



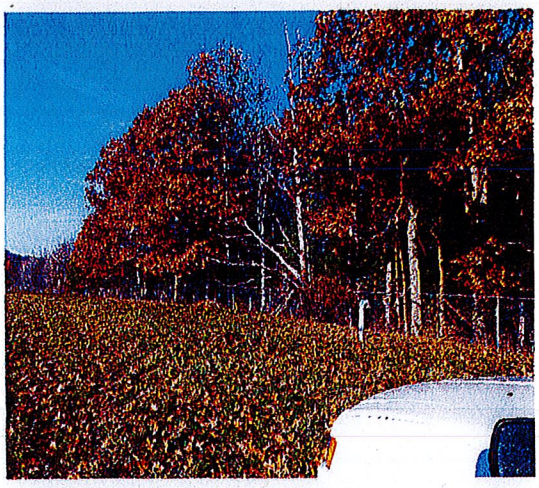
Front gate

Settlement ditch outflow



Looking northeast

Looking west



Tree on north fence

Settlement ditch looking east

Colesville Inspection Checklist

Date: 10/4/17 **Time:** 1:30 pm

Inspected by: Laurie Haskell

Engineering Controls

No.	Landfill Property and Cap:	Yes	No
1	Is the access road stable and free of erosion?	✓	
2	Are the culverts and drainage ditches free from sediment and debris?	✓	
3	Any visible debris, litter, and/or waste on the site?		✓
4	Are the gates and fences in good condition, operational and with locks?	✓	
5	Is the vegetation providing adequate protection from erosion?	✓	
6	Are there any woody plants growing on the cap?		✓
7	Was the cap vegetation mowed this year?	✓	
8	Is there any settlement, ponding, or animal burrows?		✓
9	Are the gas venting pipes in good condition?	✓	
10	Is the SP-5 remedy functioning as intended?	✓	
11	Is the SP-4 remedy intact (no stream bed erosion)?	✓	
12	Was the SP-3 iron-stained area cleaned this year?	✓	
13	Is the rip rap armored bank above Sp-3 stable and free of erosion?	✓	
14	Is the treatment building secure and in good condition?	✓	

Institutional Controls

Yes	No
	✓

Are there any new or inhabited buildings on any easement properties? (includes County and Tom Scott properties)

If problems are noted, describe them below and attach a picture and location sketch

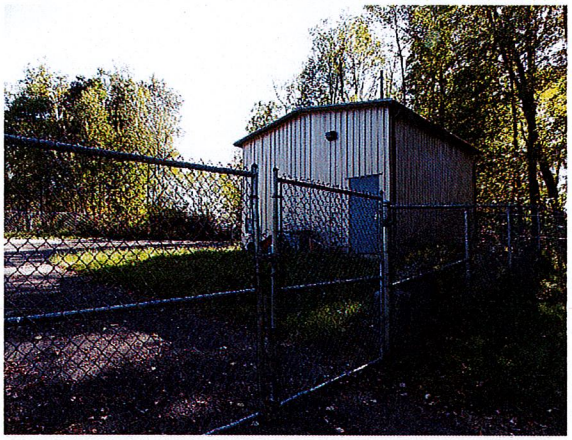
Colesville Landfill

2017 Inspection Pictures

Front gate

Back gate

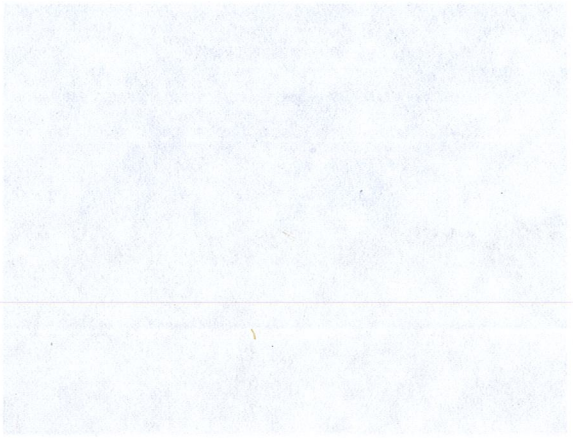
Landfill looking east

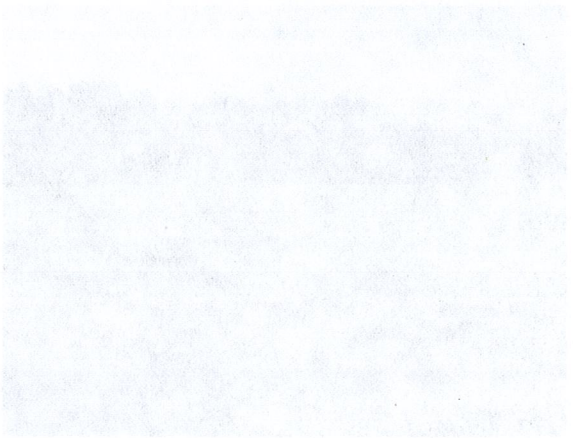


Treatment building

Settlement drainage looking south

SP-5 treatment area





Colesville Inspection Checklist

Date: 5/17/2018 **Time:** 11:00 AM

Inspected by: Laurie Haskell, Rich Hand, Deb Smith

Engineering Controls

No.	Landfill Property and Cap:	Yes	No
1	Is the access road stable and free of erosion?	✓	
2	Are the culverts and drainage ditches free from sediment and debris?	✓	
3	Any visible debris, litter, and/or waste on the site?		✓
4	Are the gates and fences in good condition, operational and with locks?		✓
5	Is the vegetation providing adequate protection from erosion?	✓	
6	Are there any woody plants growing on the cap?		✓
7	Was the cap vegetation mowed this year?	✓	
8	Is there any settlement, ponding, or animal burrows?		✓
9	Are the gas venting pipes in good condition?	✓	
10	Is the SP-5 remedy functioning as intended?	✓	
11	Is the SP-4 remedy intact (no stream bed erosion)?	✓	
12	Was the SP-3 iron-stained area cleaned this year? 7/20/2018	✓	
13	Is the rip rap armored bank above Sp-3 stable and free of erosion?	✓	
14	Is the treatment building secure and in good condition?	✓	

Institutional Controls

	Yes	No
Are there any new or inhabited buildings on any easement properties? (includes County and Tom Scott properties)		✓

If problems are noted, describe them below and attach a picture and location sketch

A tree was down on the south fence. It was removed and the fence was repaired during the annual mowing event during the first week of June.

Colesville Landfill

2018 Pictures

SP-4 Date: 5/17/2018

SW-4 Date: 12/6/2018

Downchute after storm inspection Date: 9/21/2018

SP-3 before cleanup Date: 7/20/2018

SP-3 after cleanup Date: 7/20/2018

SW-3 Date: 12/6/2018