

### **3.12.2 LOCKLAND INCINERATOR**

Facility Name: Lockland Incinerator

A.K.A.: Celotex; Phillip Carey, Diamond International

Location: West terminus of Davis Avenue along the east side of I-75 south

Parcel(s): 64100090017, 641000900011, 64100090003

Lat/Long: 39.219523 -84.456487

Region: Lockland

Owner: Millcreek Sports Park LTD

Operation (yrs): 1930's – 1970's



#### **FACILITY OVERVIEW**

The Landfill is comprised of three parcels separated by the West Fork of the Mill Creek. The northern parcel (064100090017) is 5.28 acres bound on the north and east by residential property, the south by the West Fork of the Mill Creek, and the west by I-75S. The southern parcel (064100090011) is 25.63 acres bound on the west by I-75S and bound on the north, east, and south by the West Fork of the Mill Creek. The third parcel (064100090003) contains the old incinerator is within the 25.63-acre parcel bound on the west by I-75S.

The Northern parcel was owned by the Gardner-Richardson Company and was used to dispose of paper products and waste from manufacturing of paper products.

The landfill portion of the southern parcel was operated by Philip Carey Manufacturing Company and later by Celotex. Asbestos shingles and insulation were the main products produced at the plant. Interviews with former employees indicate that waste materials placed in the landfill included scrap metal, trash, wood, shingles, storage tanks, and scraps from manufactured products. The depth of the fill is between 30 ft. and 50 ft.

The Lockland Incinerator operated from 1936 to the mid 1970's. The incinerator was used to burn residential trash collected by the village of Lockland. According to a 1974 questionnaire completed by the Ohio EPA, the incinerator handled approximately 57 tons a week and generated approximately 1 ton of ash per day. This ash was disposed of in a "pit at landfill". The landfill referenced is most likely Lockland's landfill off Shepherd Lane. The incinerator closed when new stricter air regulations went into effect. According to a Phase I Environmental Site Assessment of the property, completed by Petro Environmental Technologies, dated December 9, 1994, the residual ash was disposed of off the property.

**FIGURE 3.12.2-A (1962)**



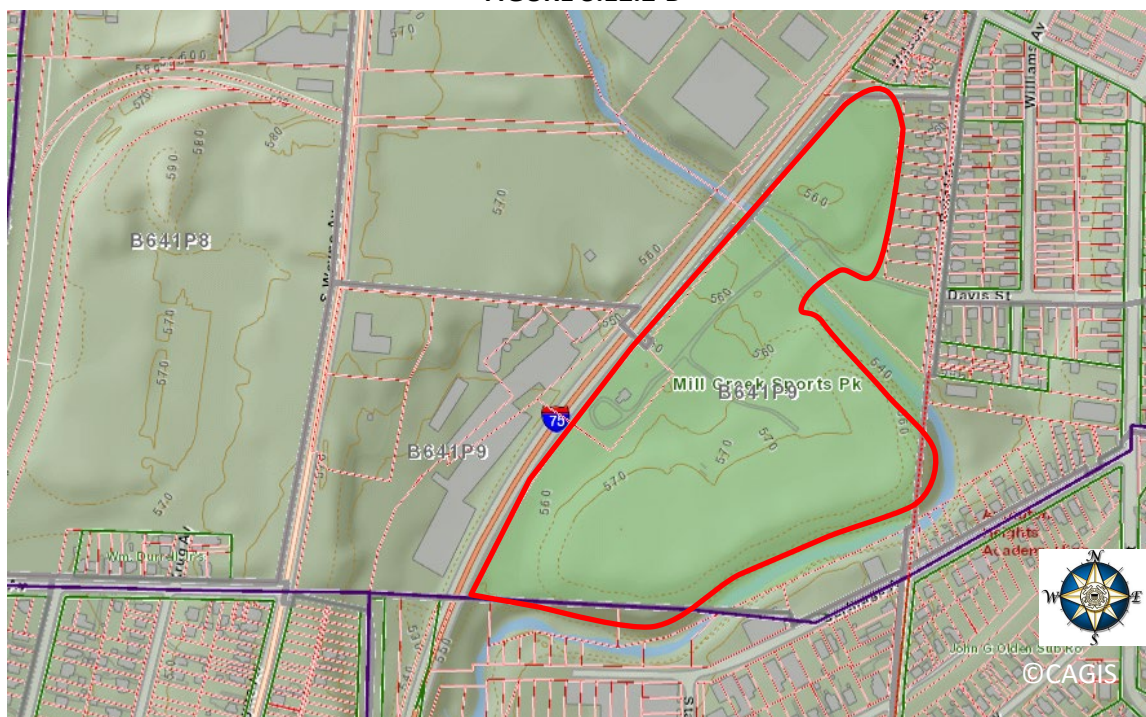
Handex of Ohio completed a preliminary site assessment on the south parcel from April 17 – April 25, 1995. Three soil borings were completed. Cinders, shingles, white fibrous material, and other fill materials were encountered. Three monitoring wells were also installed. Metals in soils and groundwater were found at relatively high concentrations. Low levels of VOC's, SVOC's, and asbestos were also found in the soil samples.

SRW Environmental Services completed a Phase I Property Assessment to meet the requirements of OEPA's Voluntary Action Program (VAP) in 2001. This assessment indicated that a Phase II Property assessment was necessary in order to issue a No Further Action letter for the property. A total of 13 monitoring wells were installed for the Phase II. These wells were spread out over the entire property and locations can be found on Figure 3 of the Phase II report dated 6/4/2001. Four waste material samples were submitted for asbestos analysis. The samples revealed the presence of asbestos fibers ranging from less than 1% to 20%. The report also noted *"waste material in the northern parcel was predominantly soil, sand, metal, glass, plastic, clothing, and ash whereas waste material in the southern parcel was primarily a homogenous mass of asphaltic shingles"*.



Weekly gas monitoring was performed from February 5 – March 26, 2001 at the monitoring wells. All wells consistently contained 1 – 2% methane except one (MW-4A) which typically contained 61 – 73%. The report notes that MW-4A is located in waste and is *"approximately 230 ft. from the closest property boundary"*.

**FIGURE 3.12.2-B**



On April 8, 2005, HzW Environmental Consultants, on behalf of ODOT, submitted Rule 13 Authorization request to OEPA in order to complete bridge replacement work. The document indicates that "the original bridge was constructed over an area of waste placement and therefore waste materials may be disturbed as part of bridge replacement activities". The authorization was granted with an expiration date of April 27, 2008, if no activities had been initiated. The OEPA received a letter dated February 8, 2008, requesting an extension. The request was made due to a reduction in funding which delayed the project. This extension was approved and work was completed in 2009. During work waste was encountered including waste that contained asbestos.

On March 11, 2008, the OEPA received a rule 13 authorization request from Transystems Corporation, on behalf of ODOT to perform three soil borings at the site as part of the I-75 widening project. This request was approved on March 17, 2008.

On May 13, 2009, during a visit by the Health District and OEPA, open dumping was observed on the property. NOV's were sent to the property owner and to an address found in the waste. During a September 9, 2009, follow up inspection the waste had been removed and the site secured.

During a December 19, 2017, inspection of the facility it was noted that some land clearing activities had occurred at the site. This clearing of vegetation resulted in some areas of cover soil being disturbed. Although it appeared the intent of activities completed was not to disturb the cover soils, it may have been done in preparation for additional activities. A letter dated January 8, 2018, was issued to the property owner explaining general requirements of OAC 3745-27-13 and referring them to Ohio EPA to obtain proper approvals if further activities were planned.

In a July 29, 2019, correspondence OEPA approved a rule 13 authorization for the property. The authorized actions were stockpiling of soils, clearing, and grubbing, and restoring the landfill cap. According to the request,

these activities are to “prepare the site for future development”. The request indicates that once clearing and grubbing activities are completed the cap will be assessed. Where an existing cap is present it will be repaired and where no existing cap is found they will complete “capping with no less than two feet of compacted soil”. A notice of violation was issued to the property owner in April 2020 for failure to complete the authorized activities in accordance with the request. Specifically, the owner failed to obtain or implement various requirements related to air emissions, surface water controls, and exposed waste. Several of the violations have been resolved and the facility continues to work with the Ohio EPA to return to compliance. In November of 2020, the facility submitted and obtained approval for two additional requests relating to continued activities at the site. One request was related to determining the cap thickness and the other detailed grubbing and clearing activities as well as changes to the soil cover requirements. A certification report documenting the cap thickness was submitted in January 2021. The authorized activities are ongoing at the property.

In January 2021 a request was submitted on behalf of ODOT to perform soil borings along the western boundary of the former landfill to determine the feasibility of rerouting the northbound lanes of I-75 through this area of the facility.

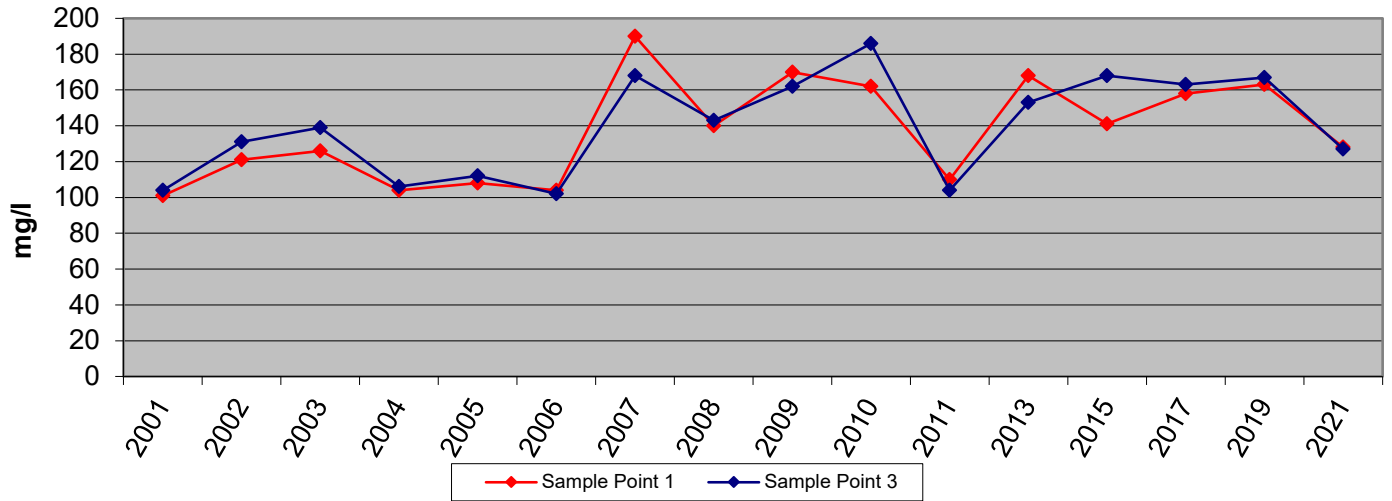
### SAMPLING RESULTS

The West Fork of the Mill Creek flows around the Lockland (Incinerator) Landfill on the north, east and south. Historically, three sites were sampled in the West Fork of the Mill Creek above (S-1), next to (S-2), and below (S-3) the Lockland (Incinerator) landfill. Given the steady findings of S-2 and that both upstream and downstream samples are collected around Lockland (Incinerator) Landfill, sample site S-2 was removed from the sampling protocol in 2008. Samples around Lockland Incinerator Landfill were collected on October 13, 2021. The samples were collected during average flow as the area had received approximately 1.5 inches of rain during the previous 14 days none of which occurred over the 5 days prior to sampling. The upstream sample location (S-1) is a low flow, shallow, rocky riffle area. The downstream sample location (S-3) has a gravel/sandy bottom with even lower flow. The referenced locations are shown on Figure 3.12.2-C.

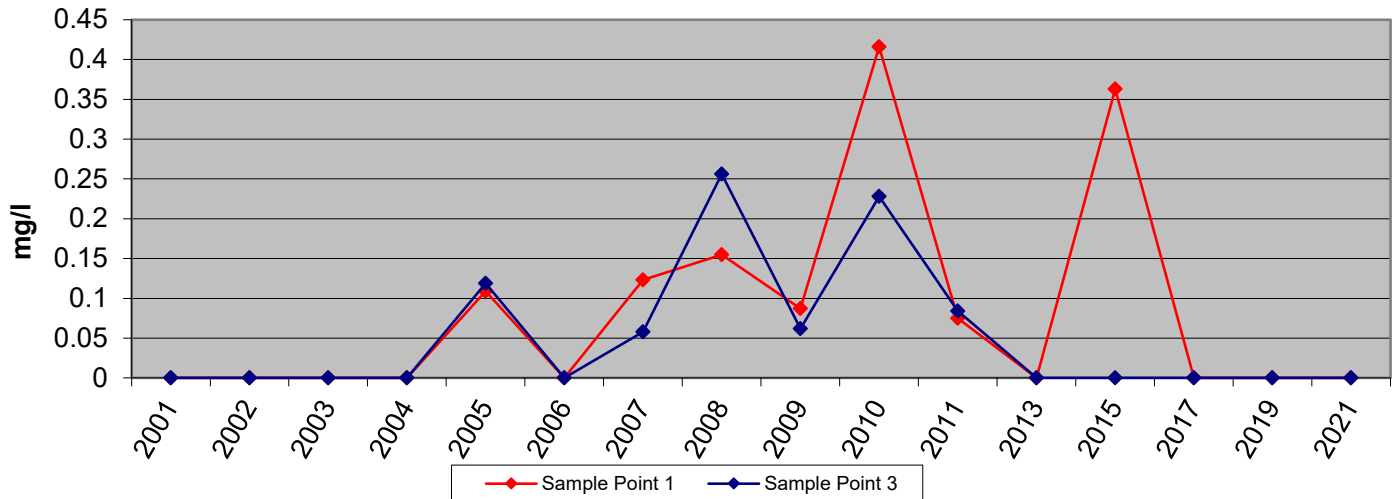
During 2010 sampling, chloride, sodium, sulfate, TDS, ammonia, conductivity, and barium all exhibited highest levels since sampling began for both upstream and downstream samples. Results thereafter (2011, 2013, 2015, and 2017) showed the above-mentioned parameters returning to levels within the normal range for the site. During 2019 sampling many of these same parameters elevated near the concentrations seen in 2010 (Appendix A). However, unlike 2010 results, the 2019 results showed a clear trend of higher concentrations upstream from the landfill and lower concentrations downstream. Concentrations observed during 2021 sampling have once again trended down to levels historically observed at both sampling locations. Specific parameters are discussed below.

Alkalinity had a concentration of 128 mg/L at sample point 1 and 127 mg/L at sample point 3. These concentrations are the lowest concentrations observed at each point since 2011. Ammonia has been below the detection limit at both sampling locations for the last three sampling events. Chloride concentrations at sample points 1 and 3 were 45.3 mg/L and 43.9 mg/L respectively which is well below the SMCL of 250 mg/L. During 2019 sampling sulfate concentrations at both sampling locations, although well below the SMCL of 250 mg/L, were at historical highs. Both locations trended down during 2021 sampling with an upstream sulfate concentration of 21.7 mg/L and a downstream concentration of 19.8 mg/L. Iron exceeded the SMCL of 0.3 mg/L at sample point 1 with a concentration of 0.402 mg/L. Prior to 2021 Iron had not exceeded the SMCL at sample point 1 since 2015 and sample point 3 has been below the SMCL since 2011. In 2017 manganese concentrations were below the SMCL (0.05 mg/L) at both sampling locations for the first time since sampling for that parameter began in 2010. Since then, sample point 1 has exceeded the SMCL in both 2019 and 2021 (0.0981 mg/L and 1.133 mg/L) while sample point 3 has remained below the SMCL for both years. All other compounds remained below their respective MCL, secondary MCL, or action level. Surface water chemical data is illustrated for Lockland Incinerator Landfill in the graphs on the subsequent pages.

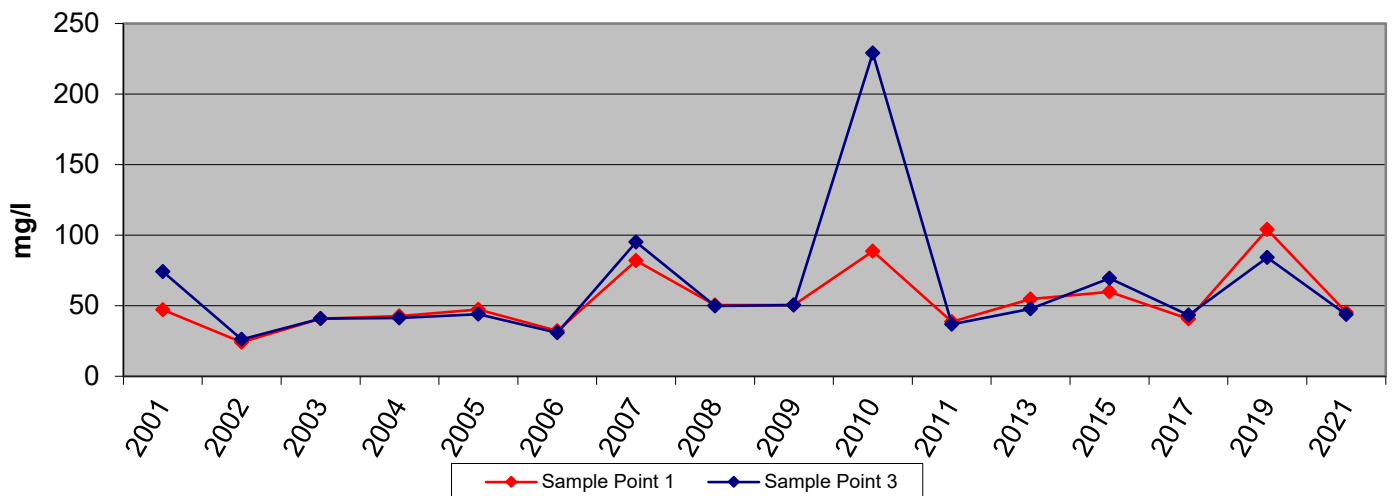
**Lockland Incinerator Alkalinity**



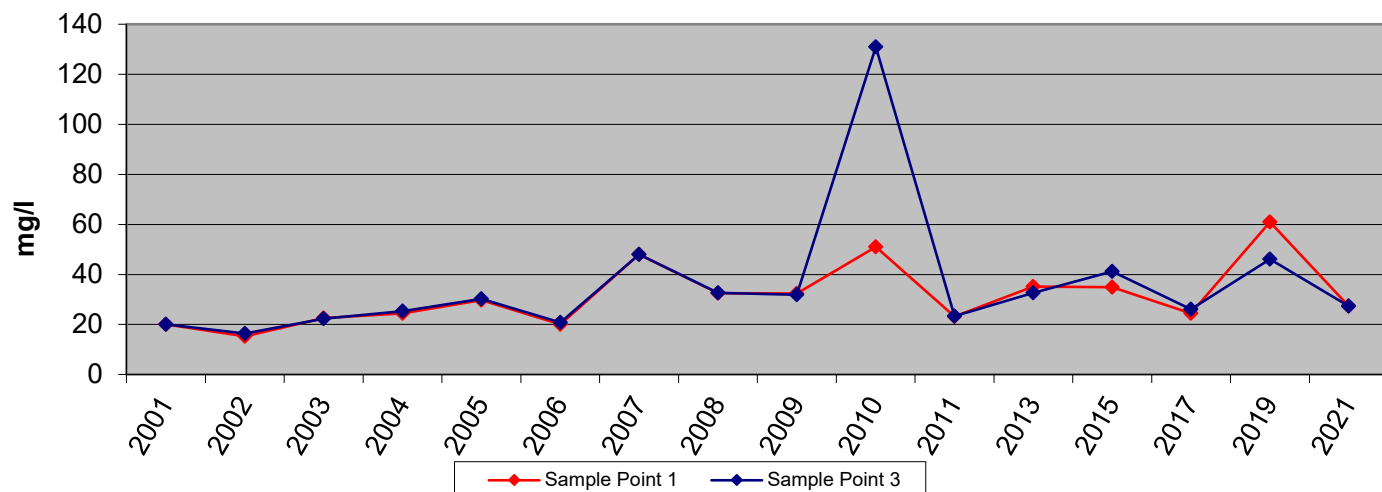
**Lockland Incinerator Ammonia**



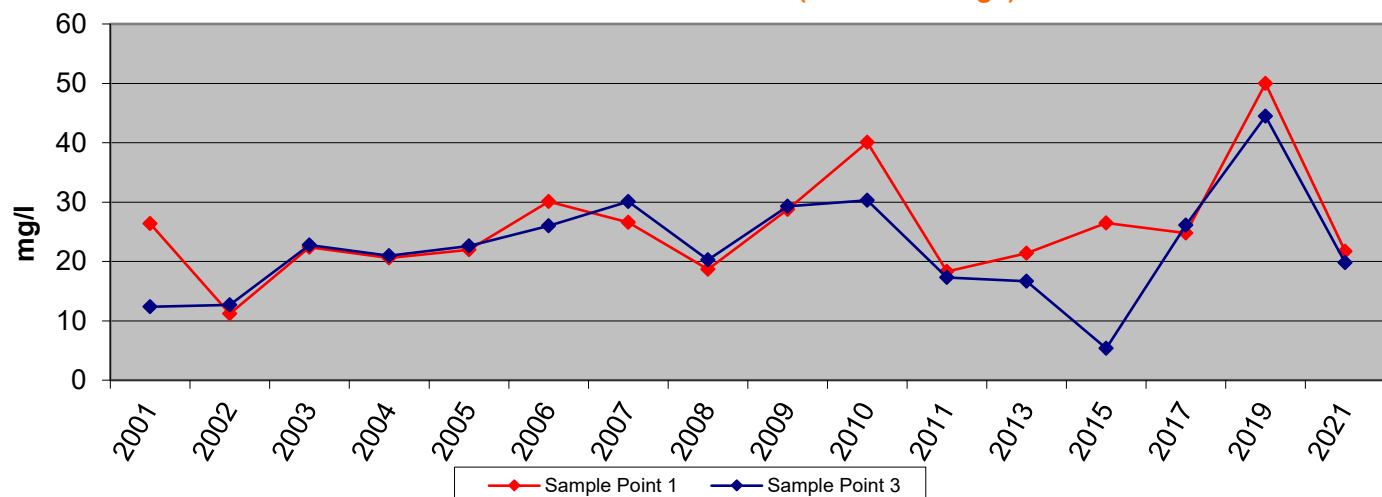
**Lockland Incinerator Chloride (SMCL: 250 mg/l)**



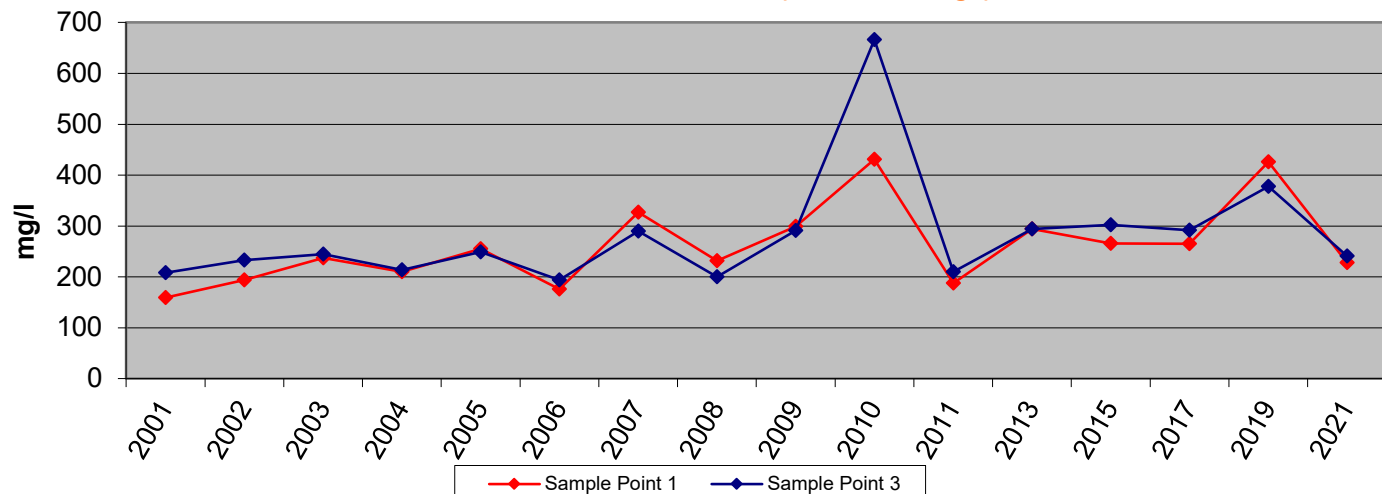
**Lockland Incinerator Sodium (SMCL: 250 mg/l)**



**Lockland Incinerator Sulfate (SMCL: 250 mg/l)**



**Lockland Incinerator TDS (SMCL: 500 mg/l)**





Gas monitoring was conducted at the Lockland (Incinerator) Landfill on December 28, 2021. The sampling locations are shown on Figure 3.12.2-C and results are provided in Table 3.12.2-B. During 2021 monitoring there were 3 detections of methane ranging in concentration from 2 to 44% LEL. Due to the detection of methane at >25% LEL, additional puchbar locations were monitored to the east of sample # 4 until concentrations of <25% LEL were observed. During 2020 monitoring there were 3 detections of methane. The concentrations encountered ranged from 3 to 5% LEL. During 2019 monitoring there were no detections of methane. During the 2018 monitoring, methane was detected at each sample point excluding sample location 5. Methane concentrations ranged from 2-20% LEL. During 2017 monitoring, methane was detected at very low concentrations (2-5% LEL) in 7 of the 8 sample points. Methane was detected at sample point 2 at a concentration of 0.2 % methane (4% LEL) during 2016 monitoring. Methane was detected in 2016, 2010, 2007, and 2006 in low levels (between 2% and 5% LEL) at sample locations 1-3. This area was not monitored in 2001 and 2002 because a study was performed in 2001 by a consulting firm. The final report was provided in 2002 and is discussed above.

During March 2010 monitoring a concentration of 211 ppm of carbon monoxide (CO) was detected at sample point 3. During the ten monitoring events from 2010-2020 CO has been detected in several locations with concentrations ranging from 3 to 92 ppm. During 2021 monitoring CO was detected in six sample locations with the highest reading being 152 ppm at sample point 4. According to landfill fire experts, CO levels over 1000 ppm with lab confirmation indicate a subsurface fire. CO levels between 100 – 1000 ppm are suspicious. Since 2010 and 2021 sampling resulted in a level of 211 ppm and 152 ppm respectively HCPH will continue to closely monitor this area. OSHA's eight-hour time weighted average (TWA) for carbon monoxide is 50 ppm. The immediate danger to life and health (IDLH) level for carbon monoxide is 1200 ppm. This is an open area, so one would not expect carbon monoxide levels to reach the IDLH level. *(Sampling data for this landfill is in the files at Hamilton County Public Health)*

**Table 3.12.2-B (12/28/2021)**

Sample Number	Time	Hydrogen Sulfide (ppm)	Carbon Monoxide (ppm)	LEL (%)	Methane (%)	Oxygen (%)
1	11:08 AM	0	0	0	0	20.6
2	11:10 AM	0	2	0	0	20.3
3	11:12 AM	0	6	3	0.15	19.9
4	11:14 AM	0	152	44	2.2	19.2
5	11:20 AM	0	0	0	0	20.9
6	11:22 AM	0	1	0	0	19.8
7	11:24 AM	0	28	2	0.1	19.6
8	11:26 AM	0	9	0	0	20.1

**Additional sampling points required due to detections of Methane**

- # (b) indicates a follow up location taken approximately 10 ft. from the initial location in the direction away from the landfill
- # (c) indicates a follow up location taken approximately 10 - 15 ft. from # (b) further in the direction away from the landfill

4b	11:16 AM	0	32	31	1.55	19.2
4c	11:18 AM	0	11	2	0.1	19.5

## SITE INSPECTIONS

The site was inspected by HCPH on December 28, 2021. The inspector noted that clearing of vegetation and earthwork activities related to the most recent Rule 513 approvals are ongoing at the property. Both the northern and southern parcels had been mostly cleared of vegetation. Some soil had been stockpiled on the northern parcel.



## SITE PRESENT DAY

Construction activities related to the rule 513 authorizations are currently ongoing at the property. The old incinerator building is still present on the southern parcel.

Northern Parcel



Northern Parcel Viewed From Southern Parcel



Southern Parcel



Southern Parcel





**Figure 3.12.2-C**  
**Lockland Incinerator**  
**Closed Landfill**

- ◆ = Surface Water Sampling Location
- = Approximate Limits of Waste
- ▲ = Gas Monitoring Location

