ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
Part 811 Landfill Groundwater Inspection Checklist

County: DeWitt LPC#: 0390055036 Region: 4 - Champaign

Location/Site Name: Clinton/Clinton Landfill 3

Date: 7/27/2016 Time: From 9:30 A.M. To 1:00 P.M. Previous GW Inspection Date: 4/21/2014

Inspector: Jeff Turner Weather: Mostly cloudy, light breeze, ~70°F

# of Photos Taken: 3 Samples Taken: Yes # 5 No ☐

Interviewed: Dakota Ladwig and Lindsey Hawksworth Facility Phone #: 217/935-8028

Permitted Owner Mailing Address

Clinton Landfill, Inc.
Attn: Ron Welk
4700 N. Sterling Avenue, POB 9071
Peoria, IL 61612-9071

Permitted Operator Mailing Address

Clinton Landfill, Inc.
Attn: Ron Welk
4700 N. Sterling Avenue, POB 9071
Peoria, IL 61612-9071

Chief Operator Mailing Address

Clinton Landfill 3
Attn: James Decker
4700 N. Sterling Avenue, POB 9071
Peoria, IL 61612

Certified Operator Mailing Address

Clinton Landfill 3
Attn: David Bryant
9550 Heritage Road-C
Clinton, IL 61727

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
SEP 29 2016
REVIEWER JRM

Authorization:

Permit: 2005-070-LF

Most recent mod #: 59

Operational Status:

Operating ☒
Closed—Not Cert. ☐
Closed—Certified ☐ Date:

Section	Description	Viol.
	Illinois Environmental Protection Act Requirements	
12(a)	**Cause, threaten or allow water pollution in Illinois**	☐
12(d)	**Deposit contaminants upon the land so as to create a water pollution hazard**	☐
21(d)	**Conduct any waste-storage, waste-treatment, or waste-disposal operation:**	
(1)	without a permit or in violation of any conditions of a permit (see permit provisions)	☐
(2)	in violation of any regulations or standards adopted by the Board	☐
21(e)	**Dispose, treat, store, or abandon any waste, or transport any waste into the State at/to sites not meeting requirements of Act and regulations**	☐
21(o)	**Conduct a sanitary landfill operation which results in any of the following conditions:**	
(2)	leachate flows entering waters of the State	☐
(3)	leachate flows exiting the landfill confines	☐
(11)	failure to submit reports required by permits or Board regulations	☐

22.17	**Landfill Post-Closure Care**	
(a)	Failure to monitor gas, water, settling	☐
(b)	Failure to take remedial action	☐
	35 Illinois Administrative Code Requirements Subtitle G	
Part 811 Subpart A	**General Standards for All Landfills**	
811.112(e)	**Recordkeeping Requirements for MSWLF Units—groundwater program records**	☐
Part 811 Subpart C	**Putrescible and Chemical Waste Landfills**	
811.316	**Plugging and Sealing of Boreholes**	☐
811.318	**Design, Construction, and Operation of Groundwater Monitoring Systems**	
(a)	Monitor groundwater, maintain wells, and keep records	☐
(b)	Placement of wells	☐
(d)	Monitoring well design, construction, development, and hydraulic testing standards	☐
(e)	Standards for sample collection and analysis	☐
811.319	**Groundwater Monitoring Programs**	
(a)	Detection Monitoring Program	☐
(b)	Assessment Monitoring	☐NA
(c)	Assessment Report	☐NA
(d)	Remedial Action	☐NA
811.320	**Groundwater Quality Standards**	
(a)	Applicable Groundwater Quality Standards (AGQSs)	☐
(d)	Establishment of Background Concentrations	☐
(e)	Statistical Analysis of Groundwater Monitoring Data	☐
811.324	**Corrective Action Measures for MSWLF Units**	☐NA
811.325	**Selection of remedy for MSWLF Units**	☐NA
811.326	**Implementation of the corrective action program at MSWLF Units**	☐NA
Part 813 Subpart E	**Certification and Reports**	
813.502	**Groundwater Reports**	☐
813.503	**Information to be Retained at or near the Waste Disposal Facility**	☐NE
813.504	**Annual Report**	☐NE

Permit Provisions		
Permit	**Description of Violation** (condition # of permit, page # of permit, and/or page # of approved application)	
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
Other Requirements		
	Description of Violation (examples: IPCB order, court order. Include case/order number and order entry date.)	
		☐
		☐

Informational Notes

1. [Illinois] Environmental Protection Act: 415 ILCS 5/4.
2. Illinois Pollution Control Board: 35 Ill. Adm. Code, Subtitle G.
3. Statutory and regulatory references herein are provided for convenience only and should not be construed as legal conclusions of the Agency or as limiting the Agency's statutory or regulatory powers. Requirements of statutes and regulations cited are in summary format. Full text of requirements can be found in references listed in 1. and 2. above.
4. The provisions of subsection (o) of Section 21 of the [Illinois] Environmental Protection Act shall be enforceable either by administrative citation under Section 31.1 of the Act or by complaint under Section 31 of the Act.
5. This inspection was conducted in accordance with Sections 4(c) and 4(d) of the [Illinois] Environmental Protection Act: 415 ILCS 5/4(c) and (d).
6. Items marked with an "NE" were not evaluated at the time of this inspection.
7. Items marked with an "NA" were not applicable at the time of this inspection.

Illinois Environmental Protection Agency

Bureau of Land — Field Operations Section — Champaign Regional Office

0390055036—DeWitt County
Clinton/Clinton Landfill 3
Groundwater File
Inspection Date: 27 July 2016
Inspector: Jeff Turner

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
SEP 29 2016
REVIEWER JRM

Landfill Groundwater Split-Sampling Inspection

Introduction

I conducted an inspection at this operating landfill. The purpose of the inspection was to split groundwater samples with the facility. I conducted the inspection in accordance with authority granted under sections 4(c) and 4(d) of the Illinois Environmental Protection Act and Standard Condition 4 of the site's permit.

I conducted these activities on 27 July 2016 from 9:30 A.M. to 1:00 P.M. (times approximate). I was assisted by Dustin Burger from my office. During the inspection, I interviewed the following personnel, all with PDC Technical Services: Dakota Ladwig, Staff Geologist; and Lindsey Hawksworth, Staff Geologist. The weather was mostly sunny with temperatures in the 80s and a light breeze. I took three photographs and collected groundwater split samples from four wells. I received analytical results from the Illinois EPA Laboratory on 17 August 2016 and from PDC Laboratories on 29 August 2016.

Site history and description

Clinton Landfill 3 is owned and operated by Clinton Landfill, Inc., a subsidiary of Peoria Disposal Company (PDC). The site comprises approximately 225 acres while the final waste footprint will be approximately 157.451 acres.

Clinton Landfill 3 is subject to 35 Ill. Adm. Code Parts 811–813, as applicable. It is also subject to its permit, 2005-070-LF, issued 2 March 2007 and most recently modified on 28 April 2016 (modification 60, which approved an alternate source demonstration for third quarter 2015 groundwater exceedances and establishment of intrawell AQGS values for select parameters). Modification 9 (8 January 2010) approved the reconfiguration of the facility into a Municipal Solid Waste Unit (MSWU) and a Chemical Waste Unit (CWU), comprising 146.453 acres and 22.495 acres, respectively. Neither unit is permitted to accept RCRA[1] hazardous waste. Additional information on the histo-

[1] "RCRA" refers to the federal Resource Conservation and Recovery Act of 1976, the principal federal law regulating the disposal of solid waste and hazardous waste in the United States. RCRA regulations define whether a waste is "hazardous" or not.

ry and design of this site may be found at (http://www.epa.state.il.us/community-relations/fact-sheets/clinton-3/index.html).

On-site evaluation

Inspection chronology

We arrived on-site on 27 July at approximately 9:30 A.M. and met Ladwig and Hawksworth at the landfill office. We then proceeded to G05M.

The goal for the event was to split samples on one upgradient well and three downgradient wells. The selected upgradient, G05M, stands near the eventual northeast corner of the landfill. Currently this area is remote from filling activities and is occupied by woods and farmland. G05M itself stands in a cornfield a short distance from a township road. After purging was complete on G05M, I split samples with Hawksworth. I also collected a complete field duplicate at this well.

We then moved on to the G09 well cluster. It stands near the southwest corner of Cell 1A of the MSWU and includes wells G09R and G09D. I split with Hawksworth on G09D.

A short distance south of the G09 cluster and midway along the west side of MSWU Cell 3A stands the G16 cluster, including G16M, G16D, and G16R. Here I split samples with Hawksworth on well G16M.

The last well sampled was G39M, which stands in a cluster also including G39D and G39R. These wells are located just northwest of the northwest corner of CWU Cell 1A.

Upon the completion of sampling at G39M, Burger and I departed the site and delivered the samples to the Illinois EPA Laboratory in Springfield.

Sampling oversight

One goal of the inspection was to observe PDC's samplers to verify that their technique conformed to recommended practices and the site's approved sampling and analysis plan (SAP). The activities that I observed appeared to be in accordance with the approved plan.

Groundwater samples collected

Wells sampled

Samples of groundwater were collected from four monitoring wells during the sampling event. With a project requirement of splitting on one upgradient well and three downgradient wells and having no other particular reason to choose one well over another, I relied on Charles Hostetler, PDC's

groundwater sampling program manager, to select wells based on ability to provide sufficient water for a split sample. These wells included G05M, an upgradient well; G09D and G16M, adjacent to the MSWU; and G39M, adjacent to the CWU.

Sampling procedure

The samples were collected using the dedicated bladder pumps installed in the wells, operated in accordance with the facility's approved Sampling and Analysis Plan. My split procedure was in general accordance with Illinois EPA Bureau of Land sampling standard operating procedures (SOPs). Because split samples from wells with dedicated pumps serve primarily as a comparison of the laboratories that analyze the samples, Hawksworth and I alternated bottles as we filled our sample bottle sets to minimize variability caused by fluctuations in water chemistry during the course of pumping at each well. We set our bottles on a stable surface and Hawksworth moved the pump discharge line between them, alternating by output cycle. For the field duplicate at G05M, which I designated G90M, for each parameter the pump output was alternated among one facility bottle and two Illinois EPA bottles.

For sample aliquots for dissolved parameter analyses, a 0.45 μ disposable in-line filter cartridge was attached to the pump discharge tube after completion of the totals parameters aliquot. Several cycles' worth of water were discharged through the filter to flush and saturate it prior to dissolved aliquot collection.

Bottles filled

For each sample, I filled the following bottles: one 250 mL polyethylene bottle with polypropylene cap, pulp and Saran cap liner, and HNO_3 preservative (for dissolved metals analysis); one 250 mL polyethylene bottle with polypropylene cap, pulp and Saran cap liner, and H_2SO_4 preservative (for dissolved ammonia and dissolved nitrate/nitrite analysis); one 250 mL polyethylene bottle with polypropylene cap, pulp and Saran cap liner, and NaOH preservative (for total cyanide analysis); one one-liter polyethylene bottle with polypropylene cap, pulp and Saran cap liner (for dissolved sulfate and dissolved chloride analysis); and one one-liter polyethylene bottle with polypropylene cap, pulp and Saran cap liner (for total dissolved solids analysis, pH, and specific conductance).

As mentioned previously, for quality control purposes I filled one complete additional sample set at G05M as a field duplicate sample. I designated the field duplicate "G90M" to conceal its nature as a field duplicate from the laboratory to avoid any potential bias.

Sample handling, custody procedures, and final disposition

Prior to the sampling event, I applied computer-generated self-adhesive labels to each bottle and secured them with transparent packing tape. The labels stated the name of the site, my name, the analytes, the sampling date, and the well name. I added a "T" and a "D" to the well names (and duplicate identifier G90M) to denote "total" and "dissolved," respectively.

For each sample, I placed the glass phenol bottles into bubble pouches to protect them from breakage. I then placed the pouched glass bottles and the plastic bottles together into a food grade plastic

bag. The Illinois EPA Laboratory prefers to track total and dissolved aliquots from the same sampling point as independent samples, so I bagged them separately from each other.

After placing bottles into bags, I tied the top of the bag in a knot, taped the knot down with packing tape, and sealed it with evidence tape. I wrote my initials, the date, and the time on the evidence tape with a china marker. I photographed each sealed sample near the well from which it had been collected. I placed the sealed samples into coolers containing bottles of water ice.

I documented the samples on the DLPC/FOS Chain of Custody Document (COCD; see attached copy) and obtained Hostetler's signature on the "receipt for samples" section of the form. The "Receipt for Samples" is simply an attestation from a facility representative that the samples came from the referenced facility, and in this case that they were split samples. At the Laboratory, I relinquished the samples to Daniel James at 2:27 P.M. The laboratory later emailed me a scan of the COCD with laboratory numbers assigned.

Parameters requested

Parameters were chosen to approximate the facility's routine third quarter analyte list and included total recoverable phenols, total cyanide, total dissolved solids, dissolved inorganic parameters (metals, ammonia, nitrate/nitrite,[2] sulfate, and chloride), pH, and specific conductance. For the most part, parameters will be run by SW-846 methods. For some parameters, the Laboratory may use equivalent non-SW-846 methods.

Review of split sample results

I entered Illinois EPA and PDC data into an Excel spreadsheet for presentation and comparison. The results are discussed below.

Illinois EPA results

Inorganics

As seen in the attached spreadsheet, many of the permit-required inorganic constituents were not detected above their laboratory reporting limits.

I compared results from the G05M/G90M primary/duplicate sample set where given constituents were detected above reporting limits in both samples. For each pair of results, I compared the two numbers to each other using relative percent difference (RPD) thusly,

$$RPD = \left| \frac{x_1 - x_2}{(x_1 + x_2)/2} \right| \times 100$$

[2] Clinton Landfill's permit actually specifies nitrate, but the Illinois EPA laboratory currently runs nitrate/nitrite. The result is the total amount of nitrate and nitrite.

where x_1 and x_2 are the two values to be compared. Stated in words, RPD is the *difference* between two numbers divided by their *average*. RPD is often used to compare the closeness of two values that should be the same (e.g., split sample results).

The primary and duplicate samples compared quite well—the average RPD was 2.06%. Most of the individual RPDs were less than 2%, with only one (arsenic) appreciably greater at 7.12%. In accordance with the Bureau of Land Standard Operating Procedure for Quality Control Samples, RPDs less than 20% are acceptable without further interpretation. Beyond that, the very low RPDs demonstrate that overall, the Illinois EPA's sampling and analysis efforts introduced little to no bias into the final results, and that the data are usable for the purposes of the sampling event.

Qualified results

The Illinois EPA Laboratory qualified (indicated results may not be completely accurate) for two constituents. The Laboratory qualified pH results for all samples being beyond the holding time of two hours (it was more than two hours between collection of the final sample and the laboratory's first measurement of pH from this set of samples). However, the pH results still compared well to Clinton Landfill's field-measured pH values, so the holding time excursion did not appear to significantly impact the pH data.

The Laboratory qualified the cyanide results from G05M. The reason given for the qualification was "The reported value failed to meet the established quality control criteria for either precision or accuracy possibly due to matrix effects." In other words, something about the sample caused the analysis not to meet quality control for those two constituents. As the result was less than the reporting limit, as it was in all other Illinois EPA samples from this event, and cyanide has been rarely detected in any groundwater samples I've ever collected, I am reasonably confident that the true result would have been less than the reporting limit.

Clinton Landfill results

PDC also collected and analyzed field duplicates at six wells. While I did not calculate RPDs for their results (none of the duplicates were at wells I was splitting on), a spot check indicated that their results appeared to be quite close, indicating their sampling and analysis efforts introduced little to no bias into their data.

Comparison of Clinton Landfill results to Illinois EPA results

Inorganics

I calculated RPDs for each Clinton Landfill result and corresponding Illinois EPA result (or to the Illinois EPA average result for G05M and its field duplicate G90M). There were certain result pairs for which I could not generate an RPD. For any constituent where either or both laboratories reported a result less than the reporting limit, no RPD could be calculated and no meaningful comparison could be made—the true values are not known.

To determine if one laboratory tended to report higher values, I used the raw RPD instead of taking the absolute value. For consistency, I always subtracted the CLI result from the Illinois EPA result. Wherever CLI reported a greater value that the Illinois EPA did, the resultant RPD was negative. This "negative" has no connotation or meaning other than that the facility reported a higher result.

Of thirty-two total RPDs calculated, nineteen were positive, eleven were negative, and two were zero. However, the average RPD overall was 0.06%. Thus, while the Illinois EPA laboratory reported a higher result more often, the overall difference between the two data sets was very low.

To estimate the comparability of the two data sets in another way, I looked at the magnitude of the RPDs. Of thirty-two RPDs, eighteen were 10% or less, and twenty-five were 20% or less.

When even field duplicates run by the same laboratory do not result in identical analytical results, the use of different laboratories obviously may yield greater analytical variation. The Illinois EPA Laboratory has stated that analytical variation between two laboratories running split samples can easily be twenty-five percent, even when both laboratories are using approved methodology. Seven RPDs from this split event were somewhat higher than twenty-five percent. The average of these higher RPDs was -1.08%, indicating that PDC Laboratories tended to report slightly higher values on average in these instances.

Considering all the foregoing, the PDC Laboratories data set should be viewed as acceptable.

Observed exceedances

There were five observed increases over permitted AGQS/MAPCs that appeared in both PDC Laboratories data and the Illinois EPA data from the split. Additionally, one exceedance (cyanide in G16M) was noted in PDC Laboratories data that did not exceed in the Illinois EPA sample from that well. In no instances were there observed increases in Illinois EPA data that were not also evident in PDC data.

Per its permit, Clinton Landfill is now required to formally notify the Illinois EPA of these observed increases within ten days and conduct confirmation sampling within ninety days of the initial event (i.e., within ninety days of 27 July). Should the confirmation sampling event confirm any of the observed increases, Clinton Landfill must submit a permit application to either propose assessment monitoring or to present an alternate explanation (other than a contaminant release from the facility) for the increases.

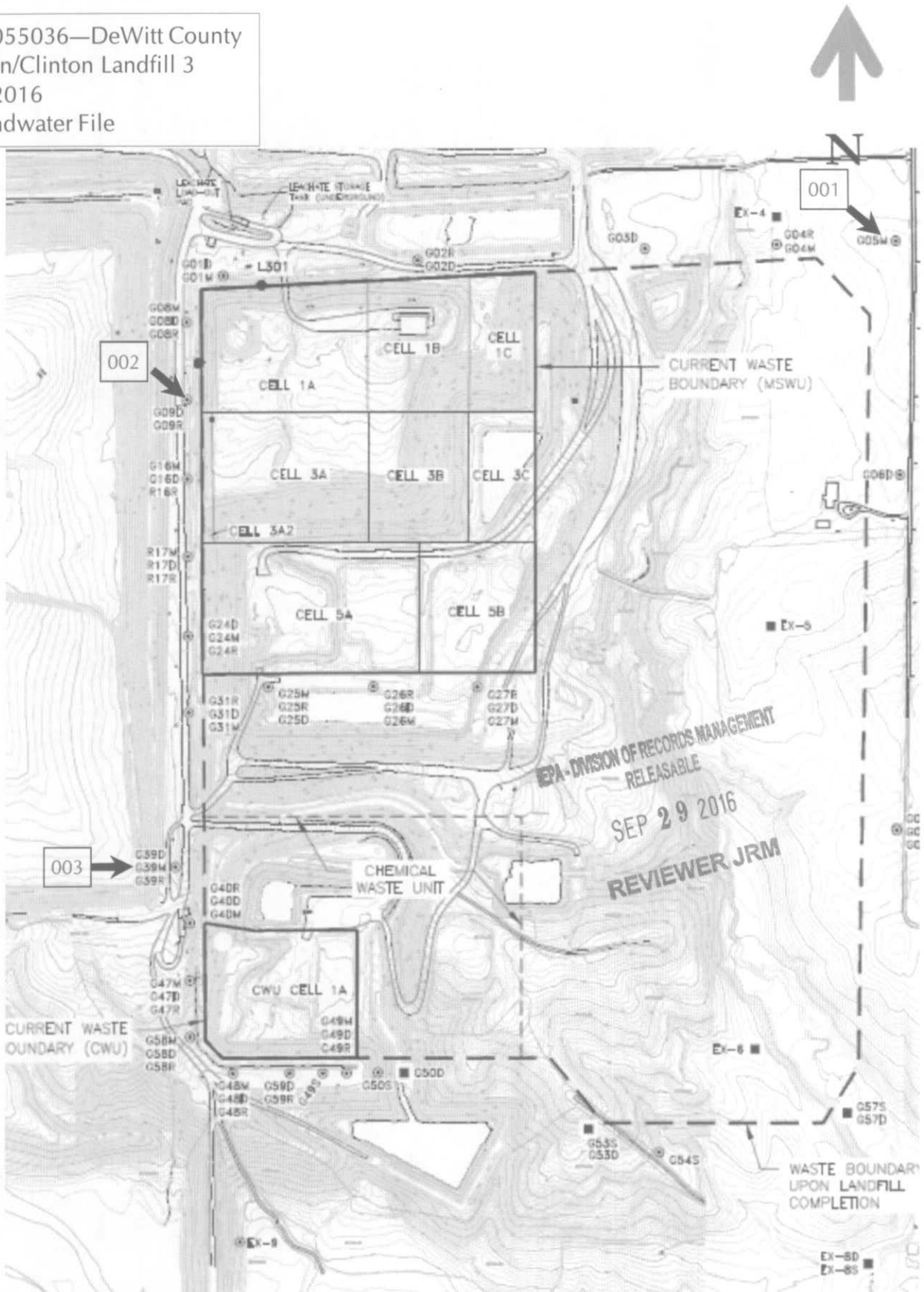
Summary of apparent violations

No apparent violations are cited as a result of this inspection.

Attachments

1. Facility diagram
2. Inspection photos
3. Chain of Custody
4. Sampling and Analysis/Health and Safety Plan
5. Comparison spreadsheet
6. Illinois EPA Laboratory results
7. PDC Laboratories results

0390055036—DeWitt County
Clinton/Clinton Landfill 3
7/27/2016
Groundwater File



Key: ← Photographs (# = exp. #)
Locations/directions approximate

DIGITAL PHOTOGRAPHS

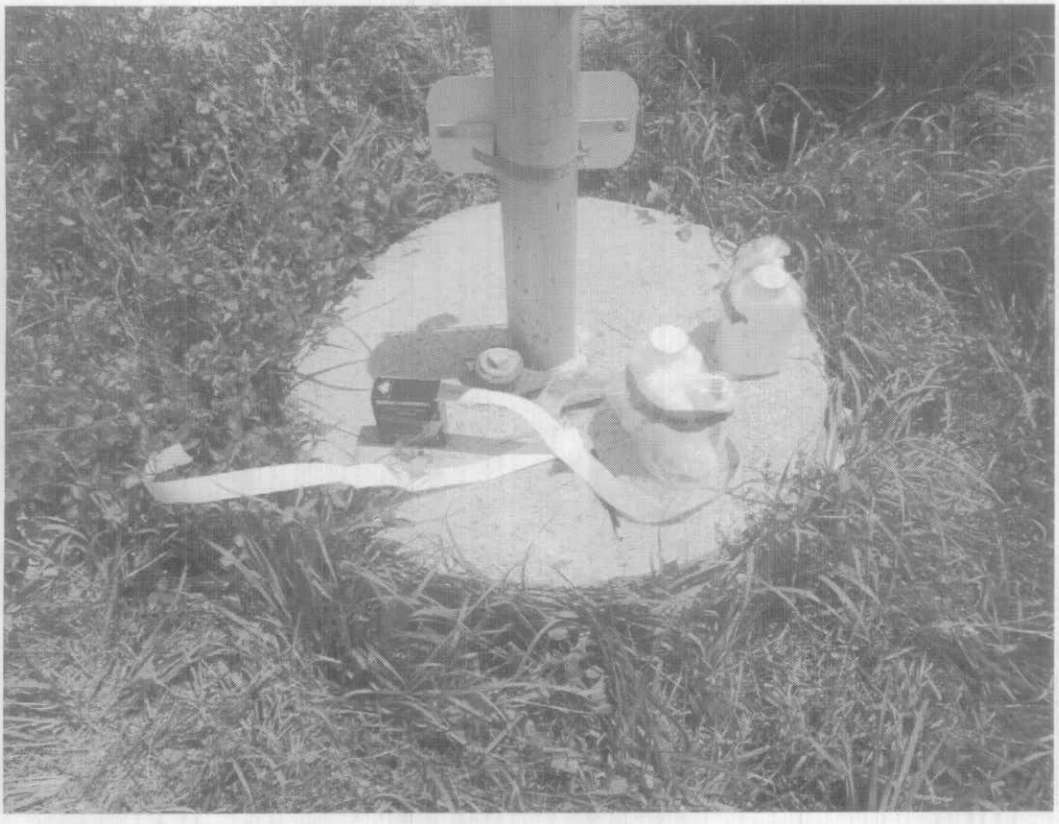
File Names: 0390055036 ~ 07272016-[Exp. #].jpg

Date: 7/27/2016
Time: 10:34 A.M.
Direction: Southeast
Photo by: Jeff Turner
Exposure #: 001
Comments: Well G05M and samples

Date: 7/27/2016
Time: 11:29 A.M.
Direction: Southeast
Photo by: Jeff Turner
Exposure #: 002
Comments: Well G09D and samples

DIGITAL PHOTOGRAPHS

File Names: 0390055036 ~ 07272016-[Exp. #].jpg



Date: 7/27/2016
Time: 12:59 P.M.
Direction: East
Photo by: Jeff Turner
Exposure #: 003
Comments: Well G39M and samples

Illinois Environmental Protection Agency

Sampling and Analysis Plan (SAP) and Health and Safety Plan (HASP)

for

0390055036—DeWitt County

Clinton/Clinton Landfill 3

Groundwater File

30 March 2016

Prepared by:

Jeff Turner
Illinois Environmental Protection Agency
Bureau of Land
Field Operations Section
Champaign Regional Office
2125 South First Street
Champaign, Illinois 61820

Glossary

BOL	Bureau of Land
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Chain of Custody
COCD	Chain of Custody Document
DLPC	Division of Land Pollution Control
DRM	Division of Remediation Management
FID	Flame Ionization Detector
FOS	Field Operations Section
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
Illinois EPA	Illinois Environmental Protection Agency
MSDS	Material Safety Data Sheet
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety & Health Administration
OSE	Office of Site Evaluation
PID	Photo Ionization Detector
PPE	Personal Protective Equipment
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling Analysis Plan
SCBA	Self Contained Breathing Apparatus
SOP	Standard Operating Procedure
TVA	Toxic Vapor Analyzer
UIC	Underground Injection Control

1. Introduction

This Sampling Analysis Plan (SAP) and Health and Safety Plan (HASP) document has been prepared by the Illinois Environmental Protection Agency (Illinois EPA) as a project planning document for the implementation of a series of groundwater sampling events at Clinton Landfill 3. It is anticipated that groundwater samples will be split with the facility every third quarter, beginning in second quarter 2016, over the course of a three-year period of enhanced oversight of operating landfills overlying the Mahomet Aquifer in central Illinois.

A SAP is required by the Illinois EPA Quality Management Plan, the RCRA/UIC Quality Program Plan, and the BOL General Sampling SOP. The HASP presents the methods used to conduct the field investigation, document the field activities, analyze the samples, and ensure the health and safety of the sampling team during sampling activities. Section 1 discusses the background and goals of the project. Section 2 discusses field methods for sample collection. Section 3 describes documentation requirements and Section 4 describes the reporting requirements for the projects. The HASP is contained in Section 5 and discusses the health and safety measures that will be followed by sampling team members in the field. The HASP gives site-specific health and safety information, such as site hazards, type of air monitoring to be performed, protective equipment to be worn, local emergency numbers and maps to nearest emergency facilities.

1.1 Site Description

Clinton Landfill, Inc. is owned by Peoria Disposal Company (PDC)/Area Disposal. The complex of three landfills lies just east of US Route 51 south of Clinton. The first landfill, listed in the Bureau of Land Site Inventory System as Clinton Landfill Inc (site #0398080005) but informally referred to as Clinton Landfill #1, began accepting waste in the mid-1970s and was certified closed in 1990. It remains in an extended post-closure care period, conducting corrective action for groundwater exceedances. Clinton Landfill #2 (site #0398080007), located immediately east of Clinton #1, began in 1990 and ceased accepting waste in mid-2010. Its closure certification application was approved by the Permit Section on 22 May 2013; its minimum 30-year post closure care period began 12 May 2011 and will therefore last until at least 12 May 2041.

Clinton Landfill 3 lies directly east of Clinton Landfill 2. The majority of Clinton Landfill 3 lies within the southwest quarter of Section 11, and the North one-half of the Northwest quarter of Section 14, Township 19 North, Range 2 East of the 3rd Principal Meridian, DeWitt County, Illinois. The property comprises approximately 225 acres of what was formerly primarily crop land and timber land. A 5-acre residential parcel (owned by CLI) exists in the eastern portion of the site. Land use in the region is predominately agricultural, (i.e., row crops and livestock) with some rural single family dwellings scattered throughout the area.

The subject of this sampling event, Clinton Landfill 3, is the currently active facility in the Clinton Landfill complex. Its development was approved by Permit 2005-070-LF on 2 March 2007. The total footprint for waste will be approximately 157.451 acres, according to the permit.

Permit Modification 9, issued on 8 January 2010, reconfigured the facility into two units, a Municipal

Solid Waste Unit (MSWU) of 146.453 acres and a Chemical Waste Unit (CWU) of 22.495 acres in the southwest corner of the overall landfill footprint. Neither the MSWU nor the CWU is permitted to accept RCRA hazardous waste.

Part of the MSWU will overlie the CWU. A separation berm will separate the two units horizontally and a separation layer will separate them vertically. The overlying portion of the MSWU is to be emplaced after the CWU is filled to capacity and the separation layer has been constructed. Although the MSWU and CWU are permitted for different types of waste, they are part of the same landfill, have the same groundwater monitoring network, will eventually have to be certified closed as one landfill, and will have the same post-closure care period.

Clinton Landfill 3 is subject to 35 Ill. Adm. Code Parts 811–813, as applicable. It is also subject to its permit, 2005-070-LF, first issued on 2 March 2007 and modified frequently to authorize the ongoing development of the facility, among other reasons.

The MSWU is permitted for municipal solid waste and non-hazardous special waste. It first accepted waste in July 2009, according to Dustin Burger's inspection report of 4 August 2009.

The CWU is being constructed to a more stringent design standard. The CWU may accept non-hazardous special waste, inert waste, putrescible waste, and chemical wastes. PDC originally intended the CWU to be able to accept polychlorinated biphenyl (PCB) waste, and manufactured gas plant (MGP) waste exceeding the toxicity characteristic thresholds of 35 Ill. Adm. Code §721.124(b), but the proposals were withdrawn.

The CWU first accepted waste on 28 April 2011, according to permit application Log 2011-448. No PCB was ever accepted. While MGP waste was accepted, under a settlement between PDC and a coalition of local goverments and other concerned entities, MGP waste already buried in the CWU will be allowed to remain.

The Illinois EPA inspects Clinton Landfill 3 approximately five times a year for general solid waste compliance, typically finding it in full compliance each time. I previously split groundwater samples with the facility twice prior to the enhanced oversight program, in 2012 and in 2014, the latter as part of a comprehensive evaluation of the facility's groundwater monitoring program. The 2014 evaluation found the groundwater monitoring program in general compliance.

While Clinton Landfill 3 routinely reports observed groundwater parameter increases over the thresholds in its permit, and often reports confirmed increases, all of its alternate source demonstrations to date have been approved (the most recent, Log 2016-144, is currently pending). Therefore, there have been no changes in groundwater quality attributable to the landfill.

1.2 Purpose of the Sampling Event

The purpose of the sampling event is to determine the chemical composition of groundwater at Clinton Landfill 3. The purpose of this project is to obtain representative samples of groundwater as part of an evaluation of the facility's monitoring program. The resultant data will be used by the Illinois EPA as a check on PDC Laboratories.

1.3 Sampling Team

Project team members and their roles include the following personnel. I anticipate being present at each split event over the three year project. At least one additional Illinois EPA staff member will assist; the specific staff member will be chosen shortly in advance of each sampling event, based on their availability. There is also possiblity that I might be unavailable for a scheduled split event, in which two other staff members would participate in the event.

	Member	Role in the sampling event
1	Jeff Turner	Project Manager/Safety Officer/Sampler
2	Other Illinois EPA staff, as available	Support

In advance of mobilizing to the facility, all members of the sampling team will have reviewed pertinent BOL Sampling SOPs to refresh themselves on sampling methods and procedures.

2. Sampling Activities

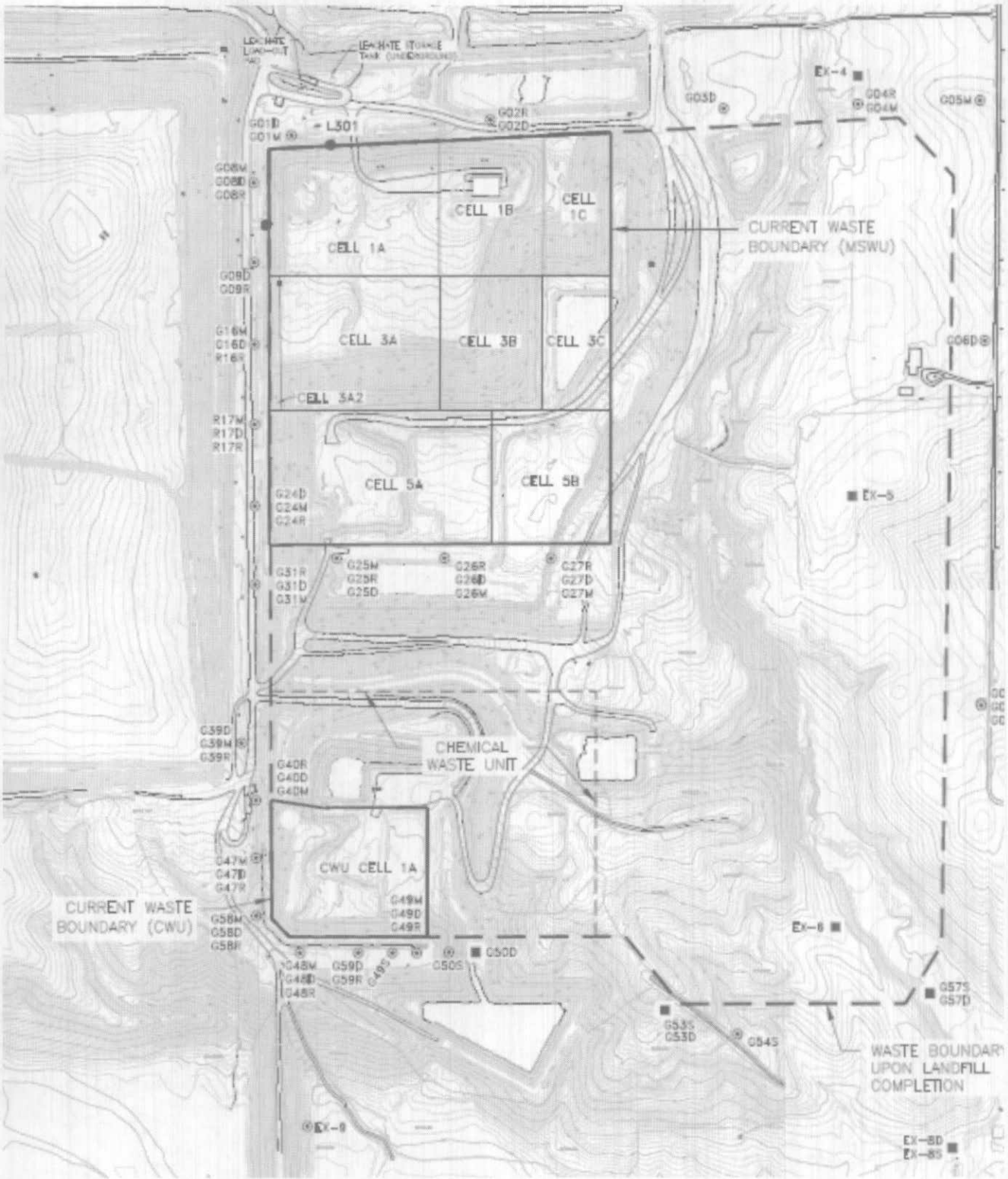
2.1 Proposed Sampling Locations, Media, and Methods

Samples of groundwater will be collected from selected groundwater monitoring wells on dates to be determined. For each split sampling event, splits will be obtained from one upgradient monitoring well and three downgradient monitoring wells. The wells to be sampled will be selected in accordance with the following criteria.

a. The assigned reviewer from the Permit Section's Groundwater Unit may request certain wells.
b. I may review the site file and choose on that basis.
c. Wells may be chosen based on other criteria (e.g., ability to produce sufficient volume), with the ultimate intent of little or no repetition over the course of the study.
d. Any previously sampled well with spurious results (e.g., large relative percent difference in split comparison) may also be prioritized for resampling during the next split event at that facility.

The samples will be collected by PDC employees using their own equipment. Most wells at Clinton Landfill 3 are equipped with bladder pumps, though other methods may also be employed at non-pump wells, in accordance with the facility's approved sampling and analysis plan. The procedures in the facility's plan are very similar to those in the Illinois EPA's Groundwater Sampling and General Sampling SOPs.

Quality control samples will also be collected: matrix spike/matrix spike duplicate aliquot for organics on one well and a field duplicate on a different well. Laboratory-prepared VOC trip blanks will accompany VOC vials during events where volatile organics are sampled.


CELL 1A
CELL 1B
CELL 1C
CELL 3A
CELL 3B
CELL 3C
CELL 3A2
CELL 5A
CELL 5B
CURRENT WASTE BOUNDARY (MSWU)
CHEMICAL WASTE UNIT
CWU CELL 1A
CURRENT WASTE BOUNDARY (CWU)
WASTE BOUNDARY UPON LANDFILL COMPLETION
L301
EX-4
EX-5
EX-6
EX-8
EX-8D
EX-8S

2.2 Sample Designation, Labeling, and Processing

All samples will be identified by field sample numbers in accordance with the BOL General Sampling SOP and as described in §§2.3 and 3 of this document. The field numbers will be the well names plus "T" for "total" and "D" for dissolved, as applicable. The field duplicate will be blind-labeled "G90" plus "R," "S," "M," or "D," to match the aquifer identifier of the well being duplicated, and "T" or "D" for "total" or "dissolved." The Division of Laboratories will assign its own identifying numbers upon sample receipt.

Sample containers will be clearly labeled with field sample numbers according to applicable program QAPPs and COC SOPs. Black ink will be used. At a minimum, sample labels will contain the following information:

- Sample identification numbers (field numbers)
- Sample date
- Site name
- Sampler name

The sample label will be attached to the sample container prior to, or just after, the container is filled and the lid secured. As an added measure of security, the finished label should be covered with clear packaging tape to protect the ink from moisture and to secure the label to the sample container.

Field sample numbers will be used to identify the samples on the COCD and other field documentation. Information on the sample label must match the information on the COCD and other field documents.

2.4 Proposed Analyses

The samples collected will be analyzed for the following, chosen to approximate the facility's required analytical parameters as closely as possible. For events that occur in the second and fourth quarters of the year, the analyses will be based on the following.

- Volatile Organic Compounds, SW-846 Method 8260
- Semi-volatile Organic Compounds, SW-846 Method 8270
- BOL Parameter Group GWT01, cyanide, total dissolved solids, total recoverable phenolics, and miscellaneous inorganic parameters, SW-846 and other methods
- BOL Parameter Group GWDIS, field-filtered inorganics, SW-846 and other methods

For sampling events that occur in the first or third quarters of the year, analyses will include only the GWT01 and GWDIS parameter groups. In all quarters, parameter group analytes not required by the facility's permit will be deleted from the analytical request.

The analytical results will be used to evaluate the facility's laboratory relative to the Illinois EPA Laboratory. The Illinois EPA results may also be compared to action levels in the facility's permit, but it is the facility's responsibility to take appropriate action based on their own data.

2.5 Equipment Decontamination

Disposable sampling equipment will be used to the maximum extent possible. Pre-cleaned, reusable equipment will be used only if necessary. This should eliminate the need for any decontamination in the field. Non-disposable equipment used during this study will be decontaminated at the site or at Illinois EPA offices, if on-site decontamination is not possible, as described in BOL General Sampling SOP.

Any disposable equipment that comes into contact with the material being sampled is potentially contaminated by hazardous constituents, and therefore will be handled accordingly. Contamination of equipment, clothing, safety gear, and other miscellaneous material will be kept to a minimum. The Illinois EPA sampler will use his/her judgment in determining if they have generated any contaminated objects or materials during sampling activities. Any contaminated materials will be placed in a trash bag and properly disposed of.

3. Project Documentation

3.1 Field Notes

Sampling team members will take field notes as a record of investigation operations as sampling activities proceed. The notes will contain the date, time, and description of all field activities performed; names of personnel; weather conditions; names of visitors to the site; areas where photographs were taken; and any other data pertinent to the project. The field notes will also contain all sample collection and identification information and a drawing of the area sampled, along with the approximate location of where each sample was taken. The notes from all team members will be compiled by the lead inspector and incorporated into an inspection report. The inspection report is the official, legal record of site activities.

3.2 Photo Documentation

Photographs will be taken of the total sample area and of each sample. These photos will help identify the location and will provide an accurate visual record of the material being sampled. All photographs taken will be identified in the field notes. Photos will be identified, described and managed according to Administrative Procedure #41, Digital Photograph Management.

3.3 Field Change Procedure

When in the field, it may be necessary to deviate from the procedures outlined in this plan or in BOL SOPs. It will ultimately be the responsibility of the lead inspector/sampler to decide when such changes are to be made. When it becomes necessary to modify a program or task, the changes will be documented in the field notes and justified in the inspection report.

3.4 Sample Custody and Transportation

The samples must be traceable from the time they are collected until the resultant data are used in the final report. In general, the following provisions apply to sample handling:

- The sampling team leader will be responsible for the care and custody of the samples collected until they are properly transferred or dispatched to another team member or to the Illinois EPA Laboratory.

- All appropriate documentation forms will be used, including sample labels, COCDs, and any other appropriate forms. Documentation will be completed neatly using black ink.

- When transferring custody of samples, the individuals relinquishing and receiving them will sign, date, and note the time on the COCD per its instructions.

- Samples will be sealed in accordance with the applicable COC SOP. The sealed samples will be packed in coolers with water ice, blue ice, or dry ice so that the samples are properly cooled. The sampling team leader is responsible for selecting and obtaining the appropriate type of ice prior to sampling.

- If multiple shipping containers are being shipped by commercial carrier, each container must contain its own COCD (sealed in a ziplock or other waterproof bag) documenting the samples in that shipping container. Thus, if the containers arrive separately at the laboratory, the laboratory will have the appropriate paperwork for each sample received. If multiple shipping containers are being hand-delivered to the laboratory by an Illinois EPA representative, each container need not have its own COCD, as long as sufficient COCDs are presented to document all samples. A copy of the COCDs will be retained by the sampling team leader for inclusion in the field report.

- All samples will be delivered in accordance with the BOL Sample Shipping Policy.

BOL COC procedures including COCDs, sample labels, custody seals or evidence tape, and other sample documents are detailed in BOL COC SOPs. The COC SOP will be followed to maintain a defensible chain of custody for all samples collected. The COCD will be filled out as the samples are collected and will be double-checked prior to the transport of the samples to the laboratory. Copies of the COCD will be included in the inspection report. At a minimum, the COCD will contain the following information:

- Name of site
- Names of samplers/processing personnel
- Sample identification numbers
- Sampling date
- Sampling time
- Number of containers per sample and volume of sample
- Analyses requested

The Division of Laboratories is responsible for maintaining custody of samples once they have accepted them.

4. Reports

Reporting for this project includes laboratory reports, quality assurance reports, and the inspection report.

4.1 Laboratory/Quality Assurance Reports

A final laboratory report will be prepared by the Illinois EPA's Division of Laboratories or private laboratory contracted by the Illinois EPA. The laboratory procedures applicable to this project can be found in the BOL program QAPPs and the Division of Laboratories SOPs. The final written laboratory chemical analyses report will contain the following:

- Site name
- BOL ID number
- Sample collector's name
- Date sample received in the laboratory
- Funding code
- Field ID number
- Lab ID number
- Matrix
- Date/time collected
- Sample Type
- Method sample was analyzed by
- Date analysis performed
- Result
- Result units
- Reporting limit
- Sample/analyte qualifiers
- Regulatory level (if applicable)

The laboratory also completes a quality assurance/quality control (QA/QC) and data validation report. This report will identify any laboratory activities that deviated from the referenced protocols and a statement will be made regarding the overall validity of the data.

4.2 Inspection Report

A final written report will be prepared documenting all activities associated with collection, transportation and analysis of samples. The laboratory reports (and/or appropriate summaries) will be included. At a minimum, the following will be included in the final report:

- Description of the project and its objectives
- Type of sampling equipment used
- Identification and description of protocols used during sampling and testing and an explanation of any deviations from the sampling plan protocols
- Description or summary of sampling procedures
- Descriptions of each sample (i.e., sample logs)
- A site map showing the actual sampling locations
- Summary of all test results/data (included in subsequent record review after analytical results are received)

5. Health and Safety Plan (HASP)

This HASP is required by OSHA regulation 29 CFR §1910.120(b)(4), the BOL Health & Safety Program and Procedures, the General Sampling SOP, and the RCRA/UIC QAPP (available on the BOL intranet). The HASP details the site's health and safety hazards, job tasks and operations, and the specific control measured to be used to ensure sampling team member health and safety. BOL safety SOPs will be followed. All sampling team members must read, sign, and follow the HASP, and it must be readily available to them on site.

5.1 Tasks to be Accomplished

Task A

Collect groundwater split samples

Start Date/Time: TBD for each event **Complete Date/Time:** TBD for each event

5.2 Hazard Evaluation

No wells at this site have been found to be contaminated; therefore, no chemical hazards from the site itself are anticipated. In this broad open area, wind is expected to keep the breathing zone clear of any vapors potentially emanating from monitoring wells.

Based on the site description as presented in §1.1 of this document, the following physical hazards are anticipated, and control measures are recommended

Hazard	Hazard control
Back strain from lifting heavy coolers	Proper lifting procedures
Contact with waste or sample preservatives	Personnel protective equipment

5.3 Health and Safety SOPs and Other Policies

- Sampling will be conducted in accordance with the BOL Sampling SOPs designated in §2.1 of this document.
- All activities on site must be cleared through the sampling team leader. There will be a minimum of two people assigned to each task (buddy system).
- Communications: A cell phone is mandatory. On-site signal strength will be tested upon arrival.

- If adverse weather is possible, monitor a local radio broadcast station or other service to stay abreast of the weather.

- All operations and equipment will comply with OSHA regulation 29 CFR §1910.120 and other applicable elements of OSHA 29 CFR Parts 1910 and 1926. Before site operations begin, all employees involved in these operations will have read and understood this HASP.

- All site personnel, working in the hot zone or contamination reduction zone, are required to have 40-hour HAZWOPER training and respirator fitness certification. Employees with 24-hour training and level D certification (awareness training and no respirator certification), may perform specific tasks, provided that it is ensured that they will not be exposed to health hazards above permissible exposure limits.

- BOL Health & Safety SOPs will be followed (available from the BOL Intranet): Chemical-Protective Clothing.

5.4 Personal Protective Equipment (PPE)

The following descriptions of PPE levels are derived from USEPA. Level A is not included because BOL policy prohibits entry to Level A environments, and equipment is not available.

Level B protection is required under circumstances requiring the highest level of respiratory protection, with lesser level of skin protection. At most abandoned outdoor hazardous waste sites, ambient atmospheric vapors or gas levels have not approached sufficiently high concentrations to warrant level A protection. Examples of Level B protection include:

- positive pressure, full face-piece self contained breathing apparatus (SCBA) or positive pressure supplied air respirator with escape SCBA;
- inner and outer chemical-resistant gloves;
- face shield;
- hooded chemical resistant clothing;
- coveralls; and
- outer chemical-resistant boots.

Level C protection is required when the concentration and type of airborne substances is known and the criteria for using air purifying respirators is met. Typical Level C equipment includes:

- full-face air purifying respirators;
- inner and outer chemical-resistant gloves;
- hard hat;
- escape mask; and
- disposable chemical-resistant outer boots.

Level D protection is the minimum protection required. Level D protection may be sufficient when no contaminants are present or work operations preclude splashes, immersion, or the potential for unexpected inhalation or contact with hazardous levels of chemicals. Appropriate Level D protective equipment may include:

- gloves;
- coveralls;
- safety glasses;

- face shield; and
- chemical-resistant, steel-toe boots or shoes.

While these are general guidelines for typical equipment to be used in certain circumstances, other combinations of protective equipment may be more appropriate, depending upon specific site characteristics. Based on evaluation of potential hazards, the following levels of personal protective equipment have been designated for the applicable work areas or tasks. No changes to the specified levels of protection shall be made without the approval of the site safety officer and the project team leader.

Work Area/Zone	Job Function/Task	Level of Protection (B/C/D/Other)
Wellhead vicinity	Collect sample	D+

The following specific PPE items have been selected.

	Vinyl gloves	X	**Nitrile gloves**		**Neoprene gloves**
	Butyl gloves		**Silver Shield gloves**		**Chemical-resistant boots**
X	**Disposable boot covers**		**Tyvek coveralls**		**Tychem coveralls**
	APR respirator		**SCBA**		**Hardhat**
	APR cartridge:		**Safety glasses**	X	**Safety goggles**
	Hearing protection		**Cotton coveralls**	X	**Raingear:**
	½ face respirator (for dust only)		**Other:**	X	**Other: Work boots, safety vest, dust mask**

5.5 Air Monitoring

Past sampling has not revealed any contamination of the monitoring wells; additionally, wind is anticipated to keep the breathing zone clear. Therefore, no air monitoring or respiratory protection will be utilized, except surgical-style masks may be worn as dust protection.

5.6 Site Work Zones

To reduce the accidental spread of hazardous substances by team members from contaminated areas to clean areas, zones will be delineated on the site where different types of operations will occur, and the flow of personnel among the zones will be controlled. A review of the work zones must be conducted on site with all sampling personnel. The establishment of work zones will help ensure that personnel are properly protected against the hazards present where they are working, work activities and contamination are confined to the appropriate areas, and personnel can be located and evacuated in an emergency.

Hazardous waste sites should be divided into as many different zones as needed to meet operational and safety objectives. The following three zones are frequently used, though the sampling team leader is free to establish additional or different zones based on the complexity of the site and event.

- Exclusion Zone - The contaminated area
- Contamination Reduction Zone - The area where decontamination takes place
- Support Zone - The uncontaminated area where workers should not be exposed to hazardous conditions

Based on past sampling and monitoring results, no formal designation of multiple zones will be made. The immediate vicinity of the wellhead, where sampling occurs, would be equivalent to the Exclusion Zone, but in the absence of data to suggest contamination is present or will occur, that designation is not being used.

5.7 Decontamination Procedures

Decontamination procedures will be conducted in accordance with the General Sampling SOP. The sampling team leader must plan decontamination needs in advance of the event, based on the media expected to be sampled, scale of the event, and so forth. Detailed decontamination procedures may be found in Chapter 10 of OSHA's *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities* and can be excerpted into this HASP document to the extent necessary. Decontamination equipment available through the Illinois EPA includes garbage bags, wet wipes, paper towels, pump sprayers, detergent solution, water, brushes, and containment pool. In general, due to the logistics and difficulty of decontamination, contamination of personnel, monitoring equipment, and sampling equipment should be avoided to the maximum extent possible.

To minimize personnel contamination, wear disposable coveralls, disposable outer boots, and disposable outer gloves. Avoid walking on, kneeling on, or sitting on contaminated surfaces. Avoid contaminating any non-disposable clothing or equipment. Used disposable PPE will be removed, bagged, and properly disposed of in accordance with the BOL Investigation Derived Waste SOP.

It may be possible to minimize contamination of certain types of monitoring equipment or other pieces of field equipment such as cameras or GPS units by placing them in a clear, disposable plastic bag. Remember that this may not be appropriate for all types of equipment, as devices may need free flow of air to operate or to dissipate heat. This will be determined in advance for each piece of equipment.

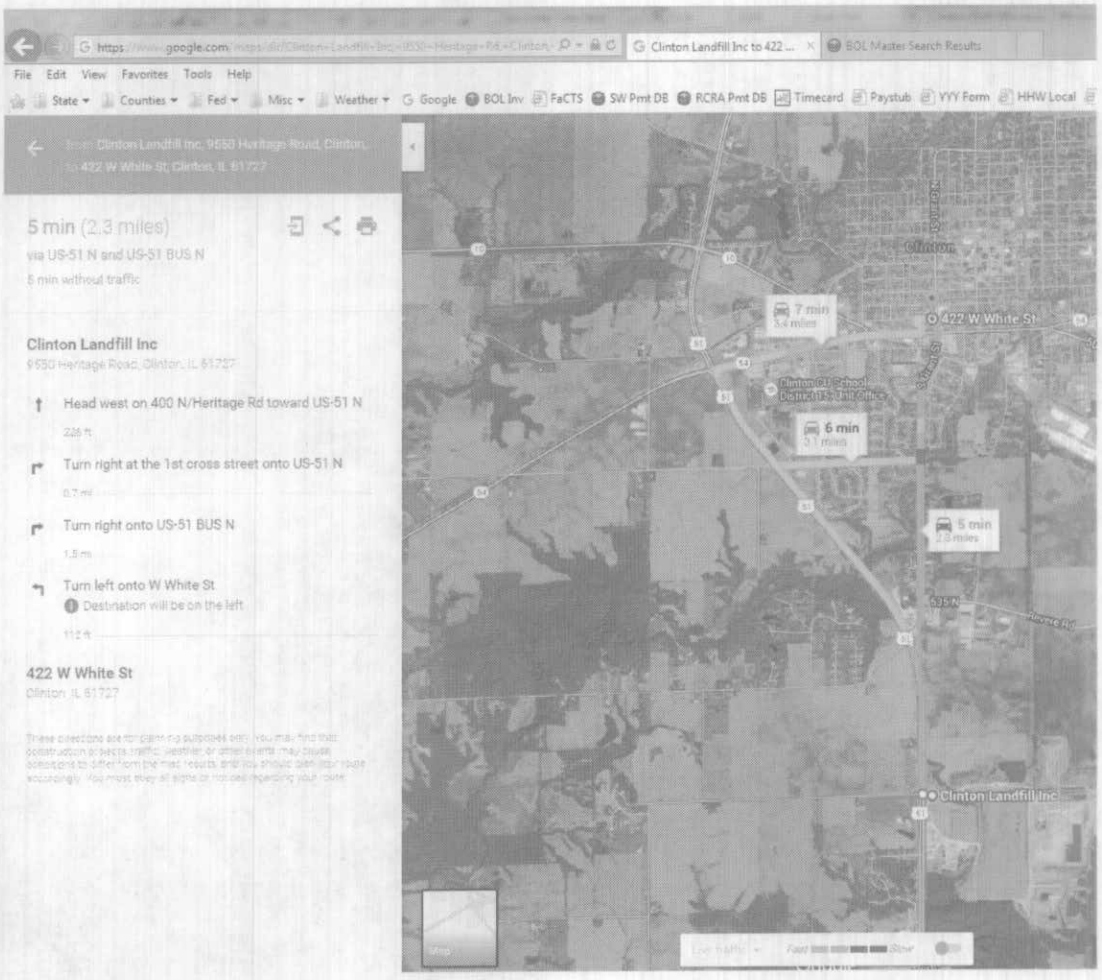
To minimize sample equipment contamination, use disposable sampling equipment to the extent possible. Decontamination of reusable, non-disposable equipment (stainless steel spoons, split spoons, measuring tape, etc) will be in accordance with the General Sampling SOP.

5.8 Emergency Procedures

The health and safety officer shall be responsible for ensuring that the appropriate procedures are followed and will be notified of any on-site emergencies.

Directions to the Selected Hospital

Dr. John Warner Hospital
422 W White St, Clinton, IL
217/935-9571



Procedures

Personnel Injury in the Exclusion Zone: Upon notification of an injury in the Exclusion Zone, all site personnel shall assemble at the decontamination line. The rescue team will enter the Exclusion Zone (if required) to remove the injured person to the hotline (boundary between Exclusion Zone and Contaminant Reduction Zone). The health and safety officer and sampling team leader will evaluate the nature of the injury and the affected person will be decontaminated to the extent possible prior to movement to the Support Zone. Appropriate first aid shall be initiated, and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

Personnel Injury in the Support Zone: Upon notification of an injury in the Support Zone, the health and safety officer and sampling team leader will assess the nature of the injury. If the cause of the injury does not affect the performance of site personnel, operations may continue, with the on-site first aid initiated and necessary follow-up as stated above. If the injury increases the risk to

others, all site personnel shall move to the decontamination line for further instructions. Activities on-site will stop until the added risk is removed or minimized.

Fire/Explosion: Upon notification of a fire or explosion on-site, all site personnel shall be assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure: If any site worker experiences a failure or malfunction of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the Exclusion Zone. Reentry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure: If any other equipment on-site fails to operate properly, the health and safety officer and sampling team leader shall be notified and then determine the effect of this failure on continuing operations on-site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Exclusion Zone until the situation is evaluated and appropriate actions taken.

First-aid equipment available on-site: First-aid kit, emergency eyewash.

In all situations, when an on-site emergency results in evacuation of the Exclusion Zone, personnel shall not re-enter until:

1. The hazards have been reassessed
2. The conditions resulting in the emergency have been corrected
3. The HASP has been reviewed and revised as necessary
4. Site personnel have been briefed on any changes of the HASP

List of emergency phone numbers

- Police: 217/935-9441
- Fire: 217/935-3712
- Ambulance: 217/935-9441
- Hospital: 217/935-9571

5.9 Certification (Mandatory)

Personnel signing below certify that they have read and understand this site safety plan.

John P. Richardson — Reviewed & Approved by: Supervisor — 7/19/16 — Date

JH Turner — Project Manager/Safety Officer — 7/19/16 — Date

[signature] — Team Member & Role/Responsibility — 7/19/16 — Date

6. References (available on the BOL intranet)

BOL General Sampling SOPs

BOL Health & Safety SOPs

NIOSH/OSHA/USCG/EPA. 1985. *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities.* www.osha.gov/Publications/complinks/OSHG-HazWaste/all-in-one.pdf

7. Appendices/Attachments

Included:

1. Site Permit (groundwater monitoring section)
2. Inspection Rights—§4(c) and (d) of the Illinois Environmental Protection Act (415 ILCS 5/4(c) and (d))
3. Inspection Rights—§3007 of RCRA (42 USC 6927)
4. Inspection Rights—CERCLA (42 USC 9604(e))

Incorporated by reference:

1. Applicable BOL Health and Safety Procedures
2. BOL General Sampling SOP
3. BOL Groundwater SOP
4. Chain of Custody Document and Instructions

Appendix 1. Groundwater Monitoring Section of Permit 2005-070-LF, Modification #59

VIII. GROUNDWATER MONITORING

1. The groundwater monitoring program must be capable of determining background groundwater quality hydraulically upgradient of and unaffected by the units and to detect, from all potential sources of discharge, any releases to groundwater within the facility. The Illinois EPA reserves the right to require installation of additional monitoring wells as may be necessary to satisfy the requirements of this permit.

2. The groundwater monitoring wells shall be constructed and maintained in accordance with the requirements of 35 Ill. Adm. Code, 811.318(d) and designs approved by the Illinois EPA.

3. Groundwater monitoring wells shall be installed in the locations shown in Drawing P-GWMP, of the February 18, 2011 addendum of the permit application, Log No. 2010-268 and application Log No. 2010-316 and screened in the hydrogeologic unit(s) identified as potential contaminant pathway(s) within the zone of attenuation. All wells as listed in Condition VIII.9 must be installed so that samples may be taken prior to waste placement.

4. Within 60 days of installation of any groundwater monitoring well, boring logs compiled by a qualified geologist, well development data and as-built diagrams shall be submitted to the Illinois EPA utilizing the enclosed "Well Completion Report" form. For each well installed pursuant to this permit, one form must be completed.

5. Groundwater monitoring wells shall be easily visible, labeled with the Illinois EPA monitoring point designations and fitted with padlocked protective covers.

6. In the event that any well becomes consistently dry or unserviceable and therefore requires replacement, a replacement well shall be installed within ten (10) feet of the existing well. The Illinois EPA shall be notified in writing at least 15 days prior to the installation of all replacement wells. A replacement well that is more than ten feet from the existing well or which does not monitor the same geologic zone is considered to be a new well and must be approved via a significant modification permit.

7. All borings, wells and piezometers not used as monitoring points shall be abandoned in accordance with the standards in 35 Ill. Adm. Code 811.316, and the decommissioning and reporting procedures contained in the Illinois Department of Public Health's (IDPH) Water Well Construction Code, 77 Ill. Adm. Code, Part 920 (effective 1/1/92). In the event specific guidance is not provided by IDPH procedures, the enclosed Illinois EPA monitoring well plugging procedures shall be followed.

8. Groundwater sampling and analysis shall be performed in accordance with the requirement of 35 Ill. Adm. Code 811.318(e) and the specific procedures and methods

proposed in Application Log No. 2012-484 and approved by the Illinois EPA on March 2, 2013 as Permit Modification No. 36.

9. The following monitoring points are to be used in the groundwater detection monitoring program for this facility:

UPPER RADNOR TILL SAND (URTS)

Temporary Upgradient Well

Applicant Designation	Illinois EPA Designation
EX-23S	G07S

Wells Within the Zone of Attenuation

Applicant Designation	Illinois EPA Designation
G49S	G49S
G50S	G50S

Compliance Boundary Wells

Applicant Designation	Illinois EPA Designation
G54S	G54S

Piezometers

Applicant Designation	Illinois EPA Designation
G53S	G53S
G57S	G57S
EX-8S^	EX-8S^

LOWER RADNOR TILL SAND WELLS

Upgradient Wells

Applicant Designation	Illinois EPA Designation
G01M	G01M
G04M	G04M
G05M	G05M
G08M	G08M

Wells Within Zone of Attenuation

Applicant Designation	Illinois EPA Designation
G16M	G16M
R17M	R17M
G18M	G18M
G19M	G19M
G20M	G20M
G40M	G40M
G47M	G47M
G48M	G48M
G49M	G49M
G58M	G58M

Compliance Boundary Wells

Applicant Designation	Illinois EPA Designation
G39M	G39M

Piezometers

Applicant Designation	Illinois EPA Designation
EX-4	EX-4
EX-5	EX-5
EX-6	EX-6

ORGANIC SOIL WELLS

Upgradient Wells

Applicant Designation	Illinois EPA Designation
G01D	G01D
G02D	G02D
G03D	G03D
G07D	G07D
G08D	G08D

Wells Within Zone of Attenuation

Applicant Designation	Illinois EPA Designation
G09D	G09D

G16D	G16D
R17D	R17D
G18D	G18D
R19D	R19D
G20D	G20D
G40D	G40D
G47D	G47D
G48D	G48D
G49D	G49D
G58D	G58D
G59D	G59D

Compliance Boundary Wells

Applicant Designation	Illinois EPA Designation
G39D	G39D

Piezometers

Applicant Designation	Illinois EPA Designation
G06D	G06D
G50D	G50D
EX-8D^	EX-8D^

ROXANA SILT-ROBEIN MEMBER WELLS

Upgradient Wells

Applicant Designation	Illinois EPA Designation
G02R	G02R
G04R	G04R
G07R	G07R

ROXANA SILT-ROBEIN MEMBER WELLS

Upgradient Wells

Applicant Designation	Illinois EPA Designation
G04R	G04R
R17R	R17R
G58R	G58R

Wells Within Zone of Attenuation

Applicant Designation	Illinois EPA Designation
G08R	G08R
G09R	G09R
R16R	R16R
G18R	G18R
G19R	G19R
G20R	G20R
G40R	G40R
G47R	G47R
G48R	G48R
G49R	G49R
G59R	G59R

Compliance Boundary Wells

Applicant Designation	Illinois EPA Designation
G39R	G39R

Piezometers

Applicant Designation	Illinois EPA Designation
G20R#	G20R#
EX-9^	EX-9^

* represents monitoring point(s) added to the monitoring program.
\# represents monitoring point(s) deleted from the monitoring program.
^ represents piezoemeter located outside the main facility property boundary

NOTES:

a. Upgradient wells screened in the Roxana Silt-Robein Member shall be installed if a down-gradient well screened in that zone contains sufficient water and is able to be monitored.

b. Wells are to be phased in according to the schedule provided in Attachment 3 of Application Log No. 2012-216, and as shown on Drawing Nos. P-PP2 through P-PP12 of Application Log No. 2012-216. The following table shows this schedule:

c. Piezometers are monitored for groundwater elevation data only. Piezometers denoted with a "G" will be incorporated into the detection monitoring program, in accordance with the permitted Phasing Plan. Piezometers denoted with an "EX" will be abandoned as site development progresses.

Groundwater Monitoring Well Network List Updated in Log No. 2014-491 (Modification No. 53).

d. Groundwater Monitoring Wells G39D, G39M, G39R, G40D, G40M, G40R, G47D, G47M, G47R, G48D, G48M, G48R, G49D, G49M, G49R, G49S, G50S, G54S, G58D, G58M, G58R, G59D and G59R monitor the Chemical Waste Unit.

Phase	Operating Cell		Perimeter Monitoring Wells[3]	Temporary Monitoring Wells[4]
	MSW	CWU		
1	1		G01M[1], G01D[1], G02D[1], G02R[1] G08M[1], G08D[1], G08R, G09D, G09R	G10M, G10R, G10D, G11M, G11R, G11D, G12D
2	3A – 3B	CWU-1A	G04M[1], G04R[1], G06D[1], G16M, G16D, R16R, R17M, R17D, R17R, G39M[2], G39D[2], G39R[2], G54S[2], G03D[1], G05M[1], G07S[1], G07D[1], G07R[1], G40M, G40D, G40R, G47M, G47D, G47R, G48M, G48D, G48R, G49M, G49D, G49R, G49S, G50S, G58M, G58D, G58R, G59D, G59R	G18M, G18D, G18R, G19M, R19D, G19R, G20M, G20D, G20R
3	5A		G24M, G24D, G24R, G31M, G31D, G31R	G25M, G25D, G25R, G26M, G26D, G26R, G20M, G20D, G20R
4	3C – 5B	CWU-1B	G50D, G50R, G51M, G51D, G51R, G51S, G52S, G52M, G52D, G52R	G25M, G25D, G25R, G26M, G26D, G26R, G27M, G27D, G27R
5	7		G32M, G32D, G32R	G33M[6], G33D[6], G33R[6], G34M[6], G34D[6], G34R[6], G35M[6], G35D[6], G35R[6]
6	2	CWU-2		G13M, G13D, G13R, G14M, G14D, G14R, G15M, G15D, G15R
7	4			G21M, G21D, G21R, G22M, G22D, G22R, G23M, G23D, G23R
8	6			G28M, G28D, G28R, G29M, G29D, G29R, G30S, G30M, G30D, G30R
9	8			G36S, G36M, G36D, G36R, G37S, G37M, G37D, G37R, G38S, G38M, G38D, G38R

Phase	Operating Cell		Perimeter Monitoring Wells[3]	Temporary Monitoring Wells[4]
	MSW	CWU		
10	9			G44S, G44M, G44D, G44R, G45S, G45M, G45D, G45R, G46S, G46M, G46D, G46R
11	10		G53S, G53D, G53R, G54M[2], G54D[2], G54R[2], G55S, G55M, G55D, G55R, G56S, G56M, G56D, G56R, G57S, G57D, G57R	

NOTES:

i. Wells noted with a ([1]) are upgradient wells.

ii. Wells denoted with a ([2]) are compliance boundary wells.

iii. Perimeter Monitoring Wells are intended to be monitored through the end of the Post-Closure Care Period once becoming active. Active perimeter wells for each phase include the listed wells and all previously installed active perimeter wells.

iv. Temporary wells are installed to monitor downgradient groundwater quality from the MSW Unit only and are to be abandoned during the development of the adjacent landfill cell to the south.

v. Upgradient Monitoring Wells apply to all cells once they become active.

vi. Groundwater Monitoring Wells G33M, G33D, G33R, G34M, G34D, G34R, G35M, G35D, and G35R will be installed only if MSW Unit Cell 7 is operated prior to the construction Chemical Waste Unit Cell CWU-2.

vii. Groundwater Monitoring Wells G02R and G04R were added to the groundwater monitoring program, and g58R was re-designated as an upgradient well through the issuance of Permit Modification No. 37 (approved April 11, 2013, and amended April 18, 2013).

10. The monitoring program, approved by Permit No. 2008-054, shall continue for a minimum period of 30 years after closure and shall not cease until the conditions described in 35 Ill. Adm. Code, 811.319(a)(1)(C) have been achieved. The operator shall collect samples from all of the monitoring points listed in Condition VIII.9, test the samples for the parameters listed in Condition VIII.12 (Lists G1 and G2), and report the results to the Illinois EPA, all in accordance with the schedule in Condition VIII.18.

11. The applicable groundwater quality standards (AGQS) and the maximum allowable predicted concentrations (MAPC), as listed in Attachment 1, are subject to the following conditions:

    a. Temperature and the field parameters involving depth or elevation are not considered groundwater constituents and do not need AGQS.

b. For constituents which have not been detected in the groundwater, either the practical quantitation limit (PQL) or the method detection limit (MDL) shall be used as the AGQS.

c. MAPCs are only applicable to those wells within the zone of attenuation.

d. AGQS are only applicable to upgradient/background and compliance boundary wells.

12. AGQS and MAPC values must be determined for all of the parameters which appear in either Lists G1 or G2 (not including groundwater depth or elevations). The AGQS values shall be calculated using a minimum of four (4) consecutive quarters of groundwater monitoring data and employing the Upper 95% Tolerance Limit (95% UTL) statistical method described in the January 11, 2007 addendum to the application, Log No. 2005-070.

LIST G (Groundwater - Variable)

GROUNDWATER MONITORING PARAMETER	STORETS
Elevation of Bottom of Well (ft. MSL) (Annually without dedicated pumps; every 5 years with dedicated pumps or whenever the pump is pulled)	72020

LIST G1 (Groundwater - Quarterly)

FIELD PARAMETERS	STORETS
pH	00400
Specific Conductance	00094
Temperature of Water Sample (°F)	00011
Depth to Water (ft. below land surface)	72019
Depth to Water (ft. below measuring point)	72109
Elevation of Measuring Point (Top of casing ft. MSL)	72110
Elevation of Groundwater Surface (ft. MSL)	71993

INDICATOR PARAMETERS	STORETS
Ammonia (as Nitrogen; Dissolved) mg/L	00608
Arsenic (Dissolved) ug/L	01000
Boron (Dissolved) ug/L	01020
Cadmium (Dissolved) ug/L	01025
Chloride (Dissolved) mg/L	00941
Chromium (Dissolved) ug/L	01030

LIST G1 (Groundwater - Quarterly) (Cont.)

Illinois EPA/Clinton Landfill 3 Groundwater Results

27 July 2016

Parameters	Interwell	Intra G16M	G05M					G16M			G39M		
	L. Radnor	L. Radnor	IEPA Prim.	IEPA Dupe	IEPA Prim./ Dupe RPD	CLI	RPD	IEPA	CLI	RPD	IEPA	CLI	RPD
Ammonia, dissolved (mg/L)	24	—	14.2	14.3	0.70%	13	9.17%	**27.8**	**25.0**	10.61%	15.9	15	5.83%
Arsenic, dissolved (µg/L)	273.5	768.5	75.6	70.4	7.12%	87	-17.50%	359	420	-15.66%	7.61	9.1	-17.83%
Boron, dissolved (µg/L)	622	1287.5	404	412	1.96%	610	-39.69%	668	630	5.86%	476	450	5.62%
Cadmium, dissolved (µg/L)	1	—	<3	<3	N/C	<1	N/C	<3	<1	N/C	<3	<1	N/C
Chloride, dissolved (mg/L)	51.8	—	<1	<1	N/C	1.8	N/C	4.01	6	-39.76%	3.55	4.9	-31.95%
Chromium, dissolved (µg/L)	4.6	—	<5	<5	N/C	<4	N/C	<5	<4	N/C	<5	<4	N/C
Cyanide, total (mg/L)	0.005	—	<0.005	<0.005	N/C	<0.005	N/C	<0.005	**0.017**	N/C	<0.005	<0.005	N/C
Lead, dissolved (µg/L)	1	—	<5	<5	N/C	<1	N/C	<5	<1	N/C	<5	<1	N/C
Magnesium, dissolved (mg/L)	82.2	—	43.4	43.7	0.69%	43	1.27%	59.3	60	-1.17%	49.7	50	-0.60%
Mercury, dissolved (µg/L)	0.2	—	<0.06	<0.06	N/C	<0.2	N/C	<0.06	<0.2	N/C	<0.06	<0.2	N/C
Nitrate, dissolved (mg/L)*	0.14	—	<0.1	<0.1	N/C	<0.02	N/C	0.112	<0.02	N/C	<0.1	<0.02	N/C
pH	5.79-7.97	—	7.0	7.1	1.42%	6.77	4.05%	7.0	7.08	-1.14%	7.0	7.0	0.00%
Spec. Cond. (µmhos/cm)	1457	—	932	934	0.21%	913	2.17%	1285	1255	2.36%	1136	1132	0.35%
Sulfate, dissolved (mg/L)	65	—	<10	<10	N/C	<1	N/C	10.1	12	-17.19%	<10	<1	N/C
Total Dissolved Solids (mg/L)	870	—	510	522	2.33%	400	25.33%	704	540	26.37%	650	500	26.09%
Zinc, dissolved (µg/L)	22	—	<25	<25	N/C	<6	N/C	<25	<6	N/C	<25	<6	N/C
			Ave RPD, IEPA Prim./Dupe:		2.06%								

Parameters	Interwell	Intra G09D	G09D		
	Org Soil	Org Soil	IEPA	CLI	RPD
Ammonia, dissolved (mg/L)	25	—	11.1	9.7	13.46%
Arsenic, dissolved (µg/L)	200	—	<0.5	<1	N/C
Boron, dissolved (µg/L)	668	—	373	330	12.23%
Cadmium, dissolved (µg/L)	1	—	<3	<1	N/C
Chloride, dissolved (mg/L)	33	—	**37.4**	**35**	6.63%
Chromium, dissolved (µg/L)	15	—	<5	<4	N/C
Cyanide, total (mg/L)	0.005	—	<0.005	<0.005	N/C
Lead, dissolved (µg/L)	2.5	—	<5	<1	N/C
Magnesium, dissolved (mg/L)	73	—	**110**	**110**	0.00%
Mercury, dissolved (µg/L)	0.2	—	<0.06	<0.2	N/C
Nitrate, dissolved (mg/L)*	1.5	—	<0.1	<0.02	N/C
pH	5.98–8.18	—	7.4	7.24	2.19%
Spec. Cond. (µmhos/cm)	1383	—	**2,188**	**2154**	1.57%
Sulfate, dissolved (mg/L)	76	351.5	**740**	**760**	-2.67%
Total Dissolved Solids (mg/L)	787	—	**1,820**	**1400**	26.09%
Zinc, dissolved (µg/L)	16	—	<25	<6	N/C

Illinois EPA/PDC Labs Comparison

total RPDs	32
≤10%	18
≤20%	25
>25%	7
RPDs >0	19
RPDs <0	11
RPD = 0	2
Ave RPD	**0.06%**

N/C = Not calculated
IEPA Prim. = IEPA primary sample of that well
Dupe = IEPA field duplicate of that well
RPD = Relative Percent Difference
*IEPA result is for nitrate + nitrite
<# = Below indicated reporting limit
Bold result = exceeds interwell

Illinois Environmental Protection Agency
Bureau of Land, DLPC/FOS
Chain of Custody Document
Page 1 of 1

Fund	BOL #	County	Locality
LP43	0390055036	DeWitt	Clinton
Section	**USEPA ID#**	**Site Name**	**File Category**
F		Clinton Landfill 3	Groundwater

Proj. Mgr.'s Name/Address/Phone/Email:
Jeff Turner, Jeff.Turner@illinois.gov
c/o IEPA, 2125 S. 1st St.
Champaign, IL 61820
217/278-5800, fax 278-5808

Illinois EPA Laboratory ☒
825 N. Rutledge Street, Springfield, IL 62702
217/782-9780

Other Laboratory Name, Address, and Phone #

Delivered by: JST

Case # (if applicable)

Lab Sample #	Parameter Group & Other Analytes: GWT01	GWDIS						Field Sample #	Legal Hold?	Split?	Collection Information: # Bottles	Volume (give units)	Date Collected & Sealed	Time Collected (24 hr clock)	Time Sealed (24 hr clock)	Sampler's Initials	Collector or Laboratory Comments (Do not include personal identifier information for samples collected on private residential property.)	Seal Intact ? (y/n)
16G1179-01	☒	☐	☐	☐	☐	☐	☐	G05MT	☐	☒	2 3	1.25 1.5 L	7/27/16	10:25	10:30	JT	Delete alkalinity, chloride, fluoride, and sulfate and phenol	
-02	☐	☒	☐	☐	☐	☐	☐	G05MD	☐	☒	3	1.5 L	7/27/16	10:25	10:30	JT	Delete alkalinity and fluoride	
-03	☒	☐	☐	☐	☐	☐	☐	G09DT	☐	☒	2 3	1.25 1.5 L	7/27/16	11:20	11:25	JT	Delete alkalinity, chloride, fluoride, and sulfate and phenol	
-04	☐	☒	☐	☐	☐	☐	☐	G09DD	☐	☒	3	1.5 L	7/27/16	11:20	11:25	JT	Delete alkalinity and fluoride	
-05	☒	☐	☐	☐	☐	☐	☐	G16MT	☐	☒	2 3	1.25 1.5 L	7/27/16	12:10	12:15	JT	Delete alkalinity, chloride, fluoride, and sulfate and phenol	
-06	☐	☒	☐	☐	☐	☐	☐	G16MD	☐	☒	3	1.5 L	7/27/16	12:10	12:15	JT	Delete alkalinity and fluoride	
-07	☒	☐	☐	☐	☐	☐	☐	G39MT	☐	☒	2 3	1.25 1.5 L	7/27/16	12:50	12:55	JT	Delete alkalinity, chloride, fluoride, and sulfate and phenol	
-08	☐	☒	☐	☐	☐	☐	☐	G39MD	☐	☒	3	1.5 L	7/27/16	12:50	12:55	JT	Delete alkalinity and fluoride	
-09	☒	☐	☐	☐	☐	☐	☐	G90MT	☐	☒	2 3	1.25 1.5 L	7/27/16	10:25	10:30	JT	Delete alkalinity, chloride, fluoride, and sulfate and phenol	
-10	☐	☒	☐	☐	☐	☐	☐	G90MD	☐	☒	3	1.5 L	7/27/16	10:25	10:30	JT	Delete alkalinity and fluoride	

Receipt for Samples: Collection of this/these sample(s) at the above-named site is hereby acknowledged. Split(s) Offered? ☒ Accepted? ☒

David Bent FACILITY MANAGER 7/27/16
Signature, Title of Facility Representative, Date

Samplers (printed names and signatures)
JTurner JTurner

Sealer: I certify that I sealed the samples listed above and I wrote my initials, the date, and the time on the seal(s).
Sealer's Signature JTurner Date SEP 06 2016 7/27/16 Time (24 hr clock) 14x

Carriers: I certify that I received the above sample(s) with the seal(s) intact and the sealer's initials and sealing date written on the seal(s).
Relinquished by (Sealer) JTurner Date 7/27/16 Time (24 hr clock) 14:29
Received by ENVIRONMENTAL PROTECTION AGENCY CHAMPAIGN Date Time (24 hr clock)
☐ To Container for Shipment by Commercial Carrier

IL 532-2311
LPC 525
REV.
6/1/2016

Laboratory Custodian: I certify that I received the above sample(s) with the seal integrity as indicated and the sealer's initials and the date written on the seal(s). After being received, this/these same sample(s) will be retained by laboratory personnel at all times or locked in a secured area.
Printed Name and Signature: Daniel James — Date 07-27-16 — Time (24 hr clock) 1427 — Sample Temp. (°C) 14

Signature of laboratory supervisor releasing results — Date 8/17/16

Inorganic Parameter Groups

Analyte	PWELL	GWTOT	GWT01	GWDIS	SURFW	TOTL1 TOTL2 TOTL3 TOTL4	TCLP1 TCLP2
Alkalinity	310.2[1]	310.2[1]	310.2[1]	310.2[1]	310.2[1]	—	—
Aluminum	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Ammonia-N	350.1[1]	350.1[1]	—	350.1[1]	350.1[1]	350.1[1] 3,4	—
Antimony	200.8[1]	6020[4]	—	6020[4]	200.8[1]	6010[4] 1, 2, 3, 4	6010[4]
Arsenic	200.8[1]	6020[4]	—	6020[4]	200.8[1]	6010[4] 1, 2, 3, 4	6010[4]
Barium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Beryllium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Boron	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Cadmium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Calcium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Chloride	4500ClE[2]	4500ClE[2]	4500ClE[2]	4500ClE[2]	4500ClE[2]	—	—
Chromium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Cobalt	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Copper	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Cyanide	335.4[1]	335.4[1]	335.4[1]	—	335.4[1]	335.4[1] 3, 4	—
Fluoride	4500FC[2]	4500FC[2]	4500FC[2]	4500FC[2]	4500FC[2]	—	—
Hardness	200.7[1]	—	—	—	200.7[1]	—	—
Iron	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Lead	200.8[1]	6020[4]	—	6020[4]	200.8[1]	6010[4] 1, 2, 3, 4	6010[4]
Magnesium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Manganese	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Mercury	245.1[1]	7470[4]	—	7470[4]	245.1[1]	7470-1[4a] 1, 2, 3, 4	7470-1[4a]
Nickel	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Nitrite/Nitrate	353.2[1]	353.2[1]	—	353.2[1]	353.2[1]	353.2[1] 3,4	—
pH	4500H+B[2]	4500H+B[2]	4500H+B[2]	—	4500H+B[2]	4500H+B[2] 3, 4	4500H+B[2]
Phenols	420.4[1]	420.4[1]	420.4[1]	—	420.4[1]	420.4[1] 3, 4	—
Phosphorus	365.1[1]	365.1[1]	—	365.1[1]	365.1[1]	365.1[1] 3,4	—
Potassium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Selenium	200.8[1]	6020[4]	—	6020[4]	200.8[1]	6010[4] 1, 2, 3, 4	6010[4]
Silver	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Sodium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Sp. Cond.	—	2510B[2]	2510B[2]	—	2510B[2]	—	—
Strontium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—
Sulfate	375.2[1]	375.2[1]	375.2[1]	375.2[1]	375.2[1]	—	—
Sulfide	4500S2F[2]	—	—	—	4500S2F[2]	4500S2F[2] 3	—
Thallium	200.8[1]	6020[4]	—	6020[4]	200.8[1]	6010[4] 1, 2, 3, 4	6010[4]
TDS/ROE	2540C[2]	2540C[2]	2540C[2]	—	2540C[2]	—	—
TSS	—	—	—	—	2540D[2]	—	—
TOC	—	—	—	—	5310C[2]	5310C[2] 3, 4	—
Vanadium	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	6010[4]
Zinc	200.7[1]	6010[4]	—	6010[4]	200.7[1]	6010[4] 1, 2, 3, 4	—

Numbers 1–4 correspond to groups TOTL1 through TOTL4. For example, TOTL1 contains all constituents that have a 1 listed after them, TOTL2 contains all constituents with a 2 listed after them, etc.

Also Method 1311

*7470 = aqueous, 7471 = non-aqueous.

Inorganic Parameter Group Descriptions

PWELL: Private wells. Bottles: Cyanide, Metals (unpres.), Nutrients, Phenol, Unpres. Plastic (1 L)., Sulfide (1 L). Total volume: 3 L.

GWTOT: Groundwater monitoring wells. Bottles: Cyanide, Metals (pres.), Nutrients, Phenol, Unpres. Plastic (1 L). Total volume: 2 L.

GWT01: Groundwater monitoring wells w/o metals or nutrients. Bottles: Cyanide, Phenol, Unpres. Plastic (1 L). Total volume: 1.5 L.

GWDIS: Groundwater monitoring wells, ***field-filtered***. Bottles: Metals (pres.), Nutrients, Unpres. Plastic (1 L). Total volume: 1.5 L.

SURFW: Surface waters and leachate flows. Bottles: Cyanide, Metals (unpres.), Nutrients, Phenol, Sulfide, Unpres. Plastic (1 L) , and (3) TOC vials. Total volume: 3.12 L.

TOTL1: Aqueous wastes, wastewaters & leachate collection system samples, total metals only. Bottles: Metals (pres.). Total volume: 250 mL.

TOTL2: Waste, soil, sediment, sludge, and organic matrices, total metals only. Bottles: Unpres. Glass. Total volume: 500 mL.

TOTL3: Aqueous wastes, wastewaters and leachate collection system samples, total inorganics. Bottles: Cyanide, Metals (pres.), Nutrients, Phenol, Unpres. Plastic (250 mL), Sulfide, and (3) TOC vials. Total volume: 2.37 L.

TOTL4: Waste, soil, sediment, sludge, and organic matrices, total inorganics. Bottles: Unpres. Glass. Total volume: 500 mL.

TCLP1: Aqueous wastes, wastewaters and leachate collection system samples, TCLP metals. Bottles: Unpres. Plastic (1 L). Total volume: 1 L.

TCLP2: Waste, soil, sediment, sludge, and organic matrices, TCLP metals. Bottles: Unpres. Glass. Total volume: 500 mL.

AWAST (same as TOTL3 + TCLP1): Bottles: Cyanide, Metals (pres.), Nutrients, Phenol, Unpres. Plastic (250 mL), Unpres. Plastic (1 L), and (3) TOC vials. Total volume: 2.37 L.

SWAST (same as TOTL4 + TCLP2): Bottles: Unpres. Glass. Total volume: 500 mL.

Miscellaneous Tests

Volume required listed after test name

Unpreserved polyethylene bottle:

BOD (1 L aqueous)— 5210B 2

Sp. Conductance (50 ml aqueous)— 2510B2

Unpreserved glass bottle:

PCB (250 mL soil/org or 1 L aqueous)—8082[3]

FLASHPOINT (250 mL org)—1010[4]

Other Pesticides (contact Laboratory)

Unpreserved polyethylene or glass bottle:

PAINTFILTER (250 mL org/soil)—9095[3]

pH (50 ml aqueous or 250 mL soil)— 4500H+B[2]

Organic Test Groups

VOC

Volatiles by GC/MS, SW-846 Method 8260 (and 1311 if TCLP)

VOC/DW

Drinking Water subset (D) by GC/MS, EPA Method 524.2[3] (Also includes several SVOCs)

Acetone	
Benzene	D
Bromobenzene	
Bromochloromethane	
Bromodichloromethane	
Bromoform	
Bromomethane	
2-Butanone (MEK)	
Carbon Disulfide	
Carbon Tetrachloride	D
Chlorobenzene	D
Chloroethane	
Chloroform	
Chloromethane	
1,2-Dibromoethane	
1,1-Dichloroethane	
1,2-Dichloroethane	D
1,1-Dichloroethene	D
cis-1,2-Dichloroethene	D
trans-1,2-Dichloroethene	D
1,2-Dichloropropane	D
1,3-Dichloropropane	
2,2-Dichloropropane	
1,1-Dichloropropene	
cis-1,3-Dichloropropene	
trans-1,3-Dichloropropene	
Dibromochloromethane	
Dibromomethane	
Ethylbenzene	D
2-Hexanone (MBK)	
Isopropylbenzene	
4-Methyl-2-Pentanone (MIBK)	
Methyl tert butyl ether (MTBE)	D
Methylene Chloride	D
Styrene	D
Tetrachloroethene	D
1,1,1,2-Tetrachloroethane	
1,1,2,2-Tetrachloroethane	
Toluene	D
1,1,1-Trichloroethane	D
1,1,2-Trichloroethane	D
Trichloroethene	D
Trichlorofluoromethane	
1,2,3-Trichloropropane	
Vinyl Chloride	D
Xylene (total)	
m/p-Xylene	D
o-Xylene	D

SVOC

Semivolatiles by GC/MS SW-846 Method 8270 (and 1311 if TCLP)

Acenaphthene		Hexachlorobenzene	
Acenaphthylene		Hexachlorobutadiene	
Acetophenone		Hexachlorocyclopentadiene	
Anthracene		Hexachloroethane	
Azobenzene		Hexachloropropene	
Benzo(a)anthracene		Ideno(1,2,3-cd)pyrene	
Benzo(a)pyrene		Isodrin	
Benzo(b)fluoranthene		Isophorone	
Benzo(g,h,i)perylene		Isosafrole	
Benzo(k)fluoranthene		Mestranol	
Bis(2-chloroethoxy)methane		2-Methylnaphthalene	
Bis(2-chloroethyl)ether		2-Methylphenol	
Bis(2-ethylhexyl)phthalate		4-Methylphenol	
4-Bromophenyl phenyl ether		Methyl methanesulfonate	
Butyl benzyl phthalate		Naphthalene	
Carbazole		1-Naphthylamine	
4-Chloroaniline		2-Naphthylamine	
4-Chloro-3-methylphenol		5-Nitroacenaphthene	
2-Chloronaphthalene		2-Nitroaniline	
1-Chloronaphthalene		3-Nitroaniline	
2-Chlorophenol		4-Nitroaniline	
4-Chlorophenyl phenyl ether		Nitrobenzene	
Chrysene		4-Nitrobiphenyl	
Dibenzo(a,h)anthracene		2-Nitrophenol	
Dibenzofuran		4-Nitrophenol	
1,2-Dichlorobenzene	D	N-Nitrosodi-n-butylamine	
1,3-Dichlorobenzene	D	N-Nitrosodi-n-propylamine	
1,4-Dichlorobenzene	D	N-Nitrosopiperidine	
3,3'-Dichlorobenzidine		p-Dimethylaminoazobenzene	
2,4-Dichlorophenol		2,2-Oxybis(1-chloropropane)	
2,6-Dichlorophenol		Pentachlorobenzene	
Diethylphthalate		Pentachloronitrobenzene	
7,12-Dimethylbenzo(a)anthracene		Pentachlorophenol	
2,4-Dimethylphenol		Phenacetin	
4,6-Dinitro-2-methylphenol		Phenanthrene	
2,4-Dinitrotoluene		Phenol	
2,6-Dinitrotoluene		2-Picoline	
Dimethylphthalate		Pronamide	
Di-n-butylphthalate		Pyrene	
Di-n-octylphthalate		Pyridine	
1,2-Dinitrobenzene		Safrole	
1,3-Dinitrobenzene		1,2,4,5-Tetrachlorobenzene	
1,4-Dinitrobenzene		1,2,4-Trichlorobenzene	D
2,4-Dinitrophenol		2,3,4,6-Tetrachlorophenol	
Diphenylamine		2,4,5-Trichlorophenol	
Ethyl methanesulfonate		2,4,6-Trichlorophenol	
Fluoranthene			
Fluorosene			

Preserved Bottles

Cyanide: 250 mL PE, 0.5 mL 10N NaOH

Metals: 250 mL PE, 5 mL 50% HNO_3 or unpreserved

Phenol: 250 mL glass, 1.8 mL 20% H_2SO_4

Sulfide: 1 L PE, 2 mL 2N $Zn(C_2H_3O_2)_2$: H_2O + 2 mL 10N NaOH

Nutrients: 250 or 500 mL PE, 2 mL or 3 mL 50% H_2SO_4 (use 500 mL if requesting >3 tests)

(PE=Polyethylene bottle with polypropylene cap w/pulp & Saran liner, except Nutrient cap is unlined)

VOC: 40 mL glass vial, polypropylene cap with Teflon-lined silicone septum, 5 drops 50% HCl

TOC: 40 mL amber glass vial, polypropylene cap with Teflon-lined silicone septum, 0.5 mL 50% H_3PO_4

Unpreserved Bottles

Polyethylene: 250 mL, 500 mL, 1 L, or 2 L, polypropylene caps w/pulp & Saran liner

Clear Glass: 60 mL, 250 mL, 500 mL, and 1 L, polypropylene cap w/Teflon liner

1 L wide-mouth amber glass, polypropylene cap w/Teflon liner

5 g carbon polymer EnCore™ tube

PEST/ECD

Routine Pesticides/Herbicides by Electron Capture Detector SW-846 Method 8081 (and 1311 if TCLP)

Acetachlor
Alachlor
Aldrin
α-BHC
γ-BHC
Captan
α-Chlordane
γ-Chlordane
Cyanazine
4,4'-DDD
4,4'-DDE
4,4'-DDT
Dieldrin
Endrin
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene
Methoxychlor
Metolachlor
Metribuzin
Pendimethalin
Toxaphene
Trifluralin

PEST/NPD

Routine Pesticides/ Herbicides by Nitrogen Phosphorous Detector SW-846 Method 8141 (and 1311 if TCLP) (aqueous only)

Atrazine
Butylate
Chlorpyrifos
Diazinon
EPTC
Ethyl Parathion
Fonofos
Malathion
Methyl Parathion
Phorate
Simazine
Terbufos

HERB

Chlorinated Phenoxy Acid Herbicides by Electron Capture Detector Method 8151 (aqueous only)

HERB/DW

D=Drinking Water subset EPA Method 515.1[3]

2,4-D	D
2,4,5-TP (Silvex)	D
Acifluorfen	D only
Dalapon	D only
Dicamba	D only
Dinoseb	D only
Pentachlorophenol	D only
Picloram	D only

Organic Bottles

Test	Bottles Required (by Matrix)		
	Water	Soil	Organic
VOC	(3) 40-ml vial[A,D]	(3) EnCore+60 mL[D]	(3) EnCore+60 mL[D,E]
VOC/DW	(3) 40-ml vial[A,D]	N/A	N/A
SVOC	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
PEST/ECD	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
PEST/NPD	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
PCB	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
HERB	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
HERB/DW	(1) 1 liter[A,B]	N/A	N/A
TOXAPHENE	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
TCLP VOC	(5) 40-ml vials[A,D]	(8) EnCore+60 mL[D]	(2) 60 mL
TCLP SVOC	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
TCLP PEST	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
TCLP HERB	(1) 1 liter[A,B]	(1) 250 mL[C]	(1) 250 mL
FLASH	N/A	N/A	(1) 250 mL
PAINTFILTER	N/A	(1) 250 mL	(1) 250 mL

Notes:

[A] For MS/MSD, from one sample point per twenty, collect two extra vials for VOCs and two extra bottles for each other parameter.

[B] 1 test per bottle, except PEST/ECD & PCB can be run from the same bottle.

[C] Maximum of 2 tests from (1) 250 mL bottle. Collect extra jar or use 500 mL bottle for more than 2 tests.

[D] Requires (2) 40-ml trip blanks for up to 10 samples per cooler per day.

[E] As a last resort, a 60 mL glass bottle can be used instead of EnCores when a soil or aqueous matrix will not stay in the EnCore.

Brief Instructions for the Chain of Custody Document

1. Do not write in any areas shaded in gray. These are FOR LAB USE ONLY.
2. Complete form heading information: funding code, file heading, project manager (head sampler) information, and receiving laboratory information. Include case number if criminal.
3. In column heading areas under "Parameter Group and other analytes," list the parameter groups or other tests which will be requested. List each sample, one per row, under "Field Sample #." Then for each sample (row), check the required group or tests, indicate whether the sample was split with the facility, whether it must be retained after analysis for evidentiary purposes, the number of bottles submitted, and the volume of the sample. Complete "Date Collected and Sealed" through "Collector or Laboratory Comments." "Collector or Laboratory Comments" may be used by the lab or inspector for miscellaneous comments. If more space is needed, attach a separate sheet of paper.
4. For the "Receipt for Samples" section, check boxes if splits were offered and/or accepted, then have the facility representative sign and put his/her title and the date in the indicated space. If he/she refuses, so note.
5. Complete "Samplers, "Sealer," and "Carriers" sections. If the sample is to be shipped, the last custodian relinquishing prior to shipping should check the "To container for shipment" box.
6. If late arrival at the laboratory (after 4:30) cannot be avoided, call ahead to see if someone can be present to receive the samples. If there is no answer at the general number, call Tom Weiss (laboratory manager) at 217/801-2673 or Celeste Crowley (Bench/Support/LAU unit supervisor) at 217/725-4149. Please be aware these are personal cell numbers. Also be aware that certain parameters (e.g., VOCs, BOD, etc.) should not be delivered on Friday afternoons as necessary personnel may not be available to prep them.

Assigning Field Numbers

Groundwater, G
0/1/Alpha = Mon Well
2 = Private Well
3 = Spring
4 = Lysimeter
5 = Public Water Supply
6 = Recovery Well
7 = Injection Well
8 = Recovery Trench
T = Till Well

Leachate, L
1 = Flow or Seep
2 = Pond
3 = Collection System

Surface Water, S
1 = Upstream
2 = Mid-Site
3 = Downstream
4 = Run-off
5 = Impounded
6 = Run-on

Special, X
1 = Soil
2 = Waste
3 = Other

Examples:
G101= Mon. Well Sample
X201=Waste Sample
L201=Leachate Pond Sample
S301=Downstream Sample

Key to Methods

[1] USEPA Methods and Guidance for Analysis of Water
[2] *SM* = Standard Methods for the Examination of Water and Wastewater
[3] USEPA Methods for the Determination of Organic Compounds in Drinking Water
[4] SW-846 = USEPA Test Methods for Evaluating Solid Waste

Information on this page is provided for convenience but is not guaranteed. See also the Laboratory's 2014 Field Sampling Bottle and Analysis Guide on the Agency Quality page (EPA Portal > Agency Quality > Shared Documents > Field Sampling QA Training)

Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MT**	Lab Sample ID:	**16G1179-01**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Cyanide by EPA Method 335.4

Method:	335.4	Prepared:	08/04/16 09:31
Units:	mg/L	Analyzed:	08/04/16 16:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Cyanide	ND	J3	0.005	

pH

Method:	SM 4500H+B	Prepared:	08/01/16 15:00
Units:	PH	Analyzed:	08/01/16 15:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Laboratory pH	**7.0**	Q	0.1	

Specific Conductance by Standard Method 2510B

Method:	2510B	Prepared:	08/04/16 10:15
Units:	umho/cm	Analyzed:	08/04/16 10:20

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Specific Conductance	**932.0**		10.00	

SEP 06 2016

RECEIVED ENVIRONMENTAL
PROTECTION AGENCY
CHAMPAIGN

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MT**	Lab Sample ID:	**16G1179-01**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Total Dissolved Solids, Gravimetric, Dried at 180oC by Std. Method 2540C

Method:	SM 2540C	Prepared:	07/28/16 11:30
Units:	mg/L	Analyzed:	07/28/16 11:30

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Total Dissolved Solids	**510**		10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MD**	Lab Sample ID:	**16G1179-02**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Chloride by Ion Chromatography 300.0

Method:	EPA 300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 12:56

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Chloride	ND		1.00	

Mercury by EPA Method 7470

Method:	7470	Prepared:	08/03/16 10:00
Units:	ug/L	Analyzed:	08/04/16 12:26

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Mercury	ND		0.06	

Metals by EPA 6000/7000 Series Methods

Method:	6020	Prepared:	07/29/16 08:40
Units:	ug/L	Analyzed:	08/02/16 14:39

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Antimony	ND		2.00	
Arsenic	**75.6**		0.50	
Lead	ND		5.00	
Selenium	ND		2.00	
Thallium	ND		2.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MD**	Lab Sample ID:	**16G1179-02**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Metals (Minerals) by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	mg/L	Analyzed:	08/04/16 10:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Calcium	**95.5**		0.30	100000
Magnesium	**43.4**		0.30	100000
Potassium	**2.84**		1.40	100000
Sodium	**28.1**		0.30	
Hardness	**417**		1.98	

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Aluminum	ND		60.0	40000
Barium	**224**		5.00	
Beryllium	ND		1.00	
Boron	**404**		10.0	
Cadmium	ND		3.00	
Chromium	ND		5.00	
Cobalt	ND		10.0	
Copper	ND		10.0	
Iron	**3960**		50.0	40000
Manganese	**42.8**		15.0	
Nickel	ND		5.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MD**	Lab Sample ID:	**16G1179-02**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Silver	ND		3.00	
Strontium	**584**		5.00	
Vanadium	ND		5.00	
Zinc	ND		25.0	

Nitrate-Nitrite, Colorimetric, Automated Cadmium by EPA Method 353.2

Method:	353.2	Prepared:	08/02/16 10:08
Units:	mg/L	Analyzed:	08/02/16 12:31

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Nitrogen, Nitrite (NO2) + Nitrate (	ND		0.100	

Nitrogen, Ammonia, Colorimetric, Automated Phenate by EPA Method 350.1

Method:	EPA 350.1	Prepared:	07/28/16 12:49
Units:	mg/L	Analyzed:	07/28/16 12:49

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Ammonia as N	**14.2**		0.10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G05MD**	Lab Sample ID:	**16G1179-02**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Phosphorus, All Forms, Colorimetric, Automated, by EPA Method 365.1

Method:	EPA 365.1	Prepared:	07/28/16 09:40
Units:	mg/L	Analyzed:	07/28/16 16:31

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Phosphorus as P	**0.193**		0.0050	

Sulfate by Ion Chromatography 300.0

Method:	300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 12:56

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Sulfate	ND		10.0	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DT**	Lab Sample ID:	**16G1179-03**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Cyanide by EPA Method 335.4

Method:	335.4	Prepared:	08/04/16 09:31
Units:	mg/L	Analyzed:	08/04/16 16:39

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Cyanide	ND		0.005	

pH

Method:	SM 4500H+B	Prepared:	08/01/16 15:00
Units:	PH	Analyzed:	08/01/16 15:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Laboratory pH	**7.4**	Q	0.1	

Specific Conductance by Standard Method 2510B

Method:	2510B	Prepared:	08/04/16 10:15
Units:	umho/cm	Analyzed:	08/04/16 10:20

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Specific Conductance	**2188**		10.00	

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LABORATORY RESULTS

Name:	CLINTON LANDFILL #3		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DT**	Lab Sample ID:	**16G1179-03**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Total Dissolved Solids, Gravimetric, Dried at 180oC by Std. Method 2540C

Method:	SM 2540C	Prepared:	07/28/16 11:30
Units:	mg/L	Analyzed:	07/28/16 11:30

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Total Dissolved Solids	**1820**		10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DD**	Lab Sample ID:	**16G1179-04**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Chloride by Ion Chromatography 300.0

Method:	EPA 300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:27

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Chloride	37.4		1.00	

Mercury by EPA Method 7470

Method:	7470	Prepared:	08/03/16 10:00
Units:	ug/L	Analyzed:	08/04/16 12:26

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Mercury	ND		0.06	

Metals by EPA 6000/7000 Series Methods

Method:	6020	Prepared:	07/29/16 08:40
Units:	ug/L	Analyzed:	08/02/16 14:42

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Antimony	ND		2.00	
Arsenic	ND		0.50	
Lead	ND		5.00	
Selenium	ND		2.00	
Thallium	ND		2.00	

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Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DD**	Lab Sample ID:	**16G1179-04**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Metals (Minerals) by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	mg/L	Analyzed:	08/04/16 10:42

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Calcium	**240**		0.30	100000
Magnesium	**110**		0.30	100000
Potassium	**10.3**		1.40	100000
Sodium	**107**		0.30	
Hardness	**1050**		1.98	

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:42

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Aluminum	ND		60.0	40000
Barium	**52.5**		5.00	
Beryllium	ND		1.00	
Boron	**373**		10.0	
Cadmium	ND		3.00	
Chromium	ND		5.00	
Cobalt	ND		10.0	
Copper	ND		10.0	
Iron	**448**		50.0	40000
Manganese	**47.2**		15.0	
Nickel	ND		5.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DD**	Lab Sample ID:	**16G1179-04**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:42

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Silver	ND		3.00	
Strontium	**1700**		5.00	
Vanadium	ND		5.00	
Zinc	ND		25.0	

Nitrate-Nitrite, Colorimetric, Automated Cadmium by EPA Method 353.2

Method:	353.2	Prepared:	08/02/16 10:08
Units:	mg/L	Analyzed:	08/02/16 12:33

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Nitrogen, Nitrite (NO2) + Nitrate (.	ND		0.100	

Nitrogen, Ammonia, Colorimetric, Automated Phenate by EPA Method 350.1

Method:	EPA 350.1	Prepared:	07/28/16 12:52
Units:	mg/L	Analyzed:	07/28/16 12:52

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Ammonia as N	**11.1**		0.10	

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G09DD**	Lab Sample ID:	**16G1179-04**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 11:20
Sample Type:		Sample Depth:	Total Depth:

Phosphorus, All Forms, Colorimetric, Automated, by EPA Method 365.1

Method:	EPA 365.1	Prepared:	07/28/16 09:40
Units:	mg/L	Analyzed:	07/28/16 16:31

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Phosphorus as P	**0.0410**		0.0050	

Sulfate by Ion Chromatography 300.0

Method:	300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 14:39

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Sulfate	**740**		100	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MT**	Lab Sample ID:	**16G1179-05**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Cyanide by EPA Method 335.4

Method:	335.4	Prepared:	08/04/16 09:31
Units:	mg/L	Analyzed:	08/04/16 16:39

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Cyanide	ND		0.005	

pH

Method:	SM 4500H+B	Prepared:	08/01/16 15:00
Units:	PH	Analyzed:	08/01/16 15:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Laboratory pH	**7.0**	Q	0.1	

Specific Conductance by Standard Method 2510B

Method:	2510B	Prepared:	08/04/16 10:15
Units:	umho/cm	Analyzed:	08/04/16 10:20

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Specific Conductance	**1285**		10.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MT**	Lab Sample ID:	**16G1179-05**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Total Dissolved Solids, Gravimetric, Dried at 180oC by Std. Method 2540C

Method:	SM 2540C	Prepared:	07/28/16 11:30
Units:	mg/L	Analyzed:	07/28/16 11:30

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Total Dissolved Solids	**704**		10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MD**	Lab Sample ID:	**16G1179-06**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Chloride by Ion Chromatography 300.0

Method:	EPA 300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Chloride	**4.01**		1.00	

Mercury by EPA Method 7470

Method:	7470	Prepared:	08/03/16 10:00
Units:	ug/L	Analyzed:	08/04/16 12:26

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Mercury	ND		0.06	

Metals by EPA 6000/7000 Series Methods

Method:	6020	Prepared:	07/29/16 08:40
Units:	ug/L	Analyzed:	08/02/16 14:45

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Antimony	ND		2.00	
Arsenic	**359**		0.50	
Lead	ND		5.00	
Selenium	ND		2.00	
Thallium	ND		2.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MD**	Lab Sample ID:	**16G1179-06**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Metals (Minerals) by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	mg/L	Analyzed:	08/04/16 10:46

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Calcium	**115**		0.30	100000
Magnesium	**59.3**		0.30	100000
Potassium	**6.18**		1.40	100000
Sodium	**49.1**		0.30	
Hardness	**532**		1.98	

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:46

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Aluminum	ND		60.0	40000
Barium	**379**		5.00	
Beryllium	ND		1.00	
Boron	**668**		10.0	
Cadmium	ND		3.00	
Chromium	ND		5.00	
Cobalt	ND		10.0	
Copper	ND		10.0	
Iron	**5450**		50.0	40000
Manganese	**33.1**		15.0	
Nickel	ND		5.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MD**	Lab Sample ID:	**16G1179-06**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:46

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Silver	ND		3.00	
Strontium	**897**		5.00	
Vanadium	ND		5.00	
Zinc	ND		25.0	

Nitrate-Nitrite, Colorimetric, Automated Cadmium by EPA Method 353.2

Method:	353.2	Prepared:	08/02/16 10:08
Units:	mg/L	Analyzed:	08/02/16 12:34

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Nitrogen, Nitrite (NO2) + Nitrate	**0.112**		0.100	

Nitrogen, Ammonia, Colorimetric, Automated Phenate by EPA Method 350.1

Method:	EPA 350.1	Prepared:	07/28/16 14:38
Units:	mg/L	Analyzed:	07/28/16 14:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Ammonia as N	**27.8**		0.50	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G16MD**	Lab Sample ID:	**16G1179-06**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:10
Sample Type:		Sample Depth:	Total Depth:

Phosphorus, All Forms, Colorimetric, Automated, by EPA Method 365.1

Method:	EPA 365.1	Prepared:	07/28/16 09:40
Units:	mg/L	Analyzed:	07/28/16 16:32

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Phosphorus as P	**0.253**		0.0050	

Sulfate by Ion Chromatography 300.0

Method:	300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:38

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Sulfate	**10.1**		10.0	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MT**	Lab Sample ID:	**16G1179-07**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Cyanide by EPA Method 335.4

Method:	335.4	Prepared:	08/04/16 09:31
Units:	mg/L	Analyzed:	08/04/16 16:43

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Cyanide	ND		0.005	

pH

Method:	SM 4500H+B	Prepared:	08/01/16 15:00
Units:	PH	Analyzed:	08/01/16 15:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Laboratory pH	**7.0**	Q	0.1	

Specific Conductance by Standard Method 2510B

Method:	2510B	Prepared:	08/04/16 10:15
Units:	umho/cm	Analyzed:	08/04/16 10:20

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Specific Conductance	**1136**		10.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MT**	Lab Sample ID:	**16G1179-07**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Total Dissolved Solids, Gravimetric, Dried at 180oC by Std. Method 2540C

Method:	SM 2540C	Prepared:	07/28/16 11:30
Units:	mg/L	Analyzed:	07/28/16 11:30

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Total Dissolved Solids	**650**		10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MD**	Lab Sample ID:	**16G1179-08**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Chloride by Ion Chromatography 300.0

Method:	EPA 300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:48

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Chloride	**3.55**		1.00	

Mercury by EPA Method 7470

Method:	7470	Prepared:	08/03/16 10:00
Units:	ug/L	Analyzed:	08/04/16 12:26

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Mercury	ND		0.06	

Metals by EPA 6000/7000 Series Methods

Method:	6020	Prepared:	07/29/16 08:40
Units:	ug/L	Analyzed:	08/02/16 14:48

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Antimony	ND		2.00	
Arsenic	**7.61**		0.50	
Lead	ND		5.00	
Selenium	ND		2.00	
Thallium	ND		2.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MD**	Lab Sample ID:	**16G1179-08**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Metals (Minerals) by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	mg/L	Analyzed:	08/04/16 10:49

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Calcium	**123**		0.30	100000
Magnesium	**49.7**		0.30	100000
Potassium	**4.53**		1.40	100000
Sodium	**39.7**		0.30	
Hardness	**511**		1.98	

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:49

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Aluminum	ND		60.0	40000
Barium	**321**		5.00	
Beryllium	ND		1.00	
Boron	**476**		10.0	
Cadmium	ND		3.00	
Chromium	ND		5.00	
Cobalt	ND		10.0	
Copper	ND		10.0	
Iron	**7840**		50.0	40000
Manganese	**56.4**		15.0	
Nickel	ND		5.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MD**	Lab Sample ID:	**16G1179-08**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:49

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Silver	ND		3.00	
Strontium	**732**		5.00	
Vanadium	ND		5.00	
Zinc	ND		25.0	

Nitrate-Nitrite, Colorimetric, Automated Cadmium by EPA Method 353.2

Method:	353.2	Prepared:	08/02/16 10:08
Units:	mg/L	Analyzed:	08/02/16 12:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Nitrogen, Nitrite (NO2) + Nitrate (	ND		0.100	

Nitrogen, Ammonia, Colorimetric, Automated Phenate by EPA Method 350.1

Method:	EPA 350.1	Prepared:	07/28/16 14:41
Units:	mg/L	Analyzed:	07/28/16 14:41

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Ammonia as N	**15.9**		0.50	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G39MD**	Lab Sample ID:	**16G1179-08**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 12:50
Sample Type:		Sample Depth:	Total Depth:

Phosphorus, All Forms, Colorimetric, Automated, by EPA Method 365.1

Method:	EPA 365.1	Prepared:	07/28/16 09:40
Units:	mg/L	Analyzed:	07/28/16 16:33

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Phosphorus as P	**0.343**		0.0050	

Sulfate by Ion Chromatography 300.0

Method:	300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:48

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Sulfate	ND		10.0	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MT**	Lab Sample ID:	**16G1179-09**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Cyanide by EPA Method 335.4

Method:	335.4	Prepared:	08/04/16 09:31
Units:	mg/L	Analyzed:	08/04/16 16:43

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Cyanide	ND		0.005	

pH

Method:	SM 4500H+B	Prepared:	08/01/16 15:00
Units:	PH	Analyzed:	08/01/16 15:35

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Laboratory pH	**7.1**	Q	0.1	

Specific Conductance by Standard Method 2510B

Method:	2510B	Prepared:	08/04/16 10:15
Units:	umho/cm	Analyzed:	08/04/16 10:20

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Specific Conductance	**934.0**		10.00	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MT**	Lab Sample ID:	**16G1179-09**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Total Dissolved Solids, Gravimetric, Dried at 180oC by Std. Method 2540C

Method:	SM 2540C	Prepared:	07/28/16 11:30
Units:	mg/L	Analyzed:	07/28/16 11:30

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Total Dissolved Solids	**522**		10	

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MD**	Lab Sample ID:	**16G1179-10**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Chloride by Ion Chromatography 300.0

Method:	EPA 300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:59

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Chloride	ND		1.00	

Mercury by EPA Method 7470

Method:	7470	Prepared:	08/03/16 10:00
Units:	ug/L	Analyzed:	08/04/16 12:26

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Mercury	ND		0.06	

Metals by EPA 6000/7000 Series Methods

Method:	6020	Prepared:	07/29/16 08:40
Units:	ug/L	Analyzed:	08/02/16 14:51

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Antimony	ND		2.00	
Arsenic	**70.4**		0.50	
Lead	ND		5.00	
Selenium	ND		2.00	
Thallium	ND		2.00	

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MD**	Lab Sample ID:	**16G1179-10**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Metals (Minerals) by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	mg/L	Analyzed:	08/04/16 10:52

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Calcium	**97.3**		0.30	100000
Magnesium	**43.7**		0.30	100000
Potassium	**2.75**		1.40	100000
Sodium	**27.6**		0.30	
Hardness	**423**		1.98	

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:52

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Aluminum	ND		60.0	40000
Barium	**226**		5.00	
Beryllium	ND		1.00	
Boron	**412**		10.0	
Cadmium	ND		3.00	
Chromium	ND		5.00	
Cobalt	ND		10.0	
Copper	ND		10.0	
Iron	**3960**		50.0	40000
Manganese	**42.6**		15.0	
Nickel	ND		5.00	

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MD**	Lab Sample ID:	**16G1179-10**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Metals by EPA Method 6010 - ICP

Method:	SW-846 6010	Prepared:	08/01/16 08:39
Units:	ug/L	Analyzed:	08/04/16 10:52

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Silver	ND		3.00	
Strontium	**575**		5.00	
Vanadium	ND		5.00	
Zinc	ND		25.0	

Nitrate-Nitrite, Colorimetric, Automated Cadmium by EPA Method 353.2

Method:	353.2	Prepared:	08/02/16 10:08
Units:	mg/L	Analyzed:	08/02/16 12:36

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Nitrogen, Nitrite (NO2) + Nitrate (	ND		0.100	

Nitrogen, Ammonia, Colorimetric, Automated Phenate by EPA Method 350.1

Method:	EPA 350.1	Prepared:	07/28/16 13:06
Units:	mg/L	Analyzed:	07/28/16 13:06

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Ammonia as N	**14.3**		0.10	

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

825 N. Rutledge Springfield, Illinois 62702 217.782.9780

LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0
Client Sample ID:	**G90MD**	Lab Sample ID:	**16G1179-10**
Matrix:	Water	Collected By: JT	Date/Time Collected: 07/27/16 10:25
Sample Type:		Sample Depth:	Total Depth:

Phosphorus, All Forms, Colorimetric, Automated, by EPA Method 365.1

Method:	EPA 365.1	Prepared:	07/29/16 10:09
Units:	mg/L	Analyzed:	08/01/16 12:31

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Phosphorus as P	**0.201**		0.0050	

Sulfate by Ion Chromatography 300.0

Method:	300.0	Prepared:	08/03/16 08:05
Units:	mg/L	Analyzed:	08/03/16 13:59

Analyte	Result	Qualifier	Reporting Limit	Regulatory Level
Sulfate	ND		10.0	

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Reported:
08/17/16 08:05

Illinois Environmental Protection Agency Laboratory

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LABORATORY RESULTS

Name:	**CLINTON LANDFILL #3**		
Project/Facility Number:	0390055036	Date Received :	07/27/16
Funding Code:	LP43	Visit Number:	
Trip ID:		Temperature C:	14.0

Notes and Definitions

Q	Maximum holding time exceeded.
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy possibly due to matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit
*	Non-NELAP accredited

Report Authorized by:

Tom Weiss
Laboratory Manager

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Reported:
08/17/16 08:05

PDC Laboratories, Inc.

PROFESSIONAL • DEPENDABLE • COMMITTED

August 24, 2016

Charles Hostetler
Clinton Landfill
9550 Heritage Rd
Clinton, IL 61727

Dear Charles Hostetler:

Please find enclosed the analytical results for the samples that the laboratory has received. All testing is performed according to our current TNI certifications unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Vice President, John LaPayne with any feedback you have about your experience with our laboratory.

Sincerely,

Lisa Grant
Project Manager
(309) 692-9688 x1764
lgrant@pdclab.com

PDC Laboratories, Inc.
2231 West Altorfer Drive
Peoria, IL 61615
(800) 752-6651

ANALYTICAL RESULTS

Sample: 6074529-01
Name: G05M
Matrix: Ground Water - Regular Sample

Sampled: 07/27/16 10:35
Received: 07/28/16 10:10

Parameter	Result	Unit	Qualifier	Prepared	Analyzed	Analyst	Method
Field - PIA							
BTM Well Elv	638.89	Feet		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Depth of Water (ft below LS)	38.34	Feet		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Depth, From Measuring Point	40.73	Feet		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Elevation of GW	693.26	Feet		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Elevation of Measuring Point (TOC)	733.99	Feet		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
pH, Field Measured	6.77	pH Units		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Specific Conductance, Field Measured	913.0	umhos/cm		07/27/16 10:35	07/27/16 10:35	FIELD	Field*
Temperature, Field Measured	59.0	°F		07/27/16 10:35	07/27/16 10:35	FIELD	SM 2550 B*
General Chemistry - PIA							
Cyanide	< 0.0050	mg/L		07/29/16 13:32	07/29/16 13:32	sjf	ASTM D7511
Solids - total dissolved solids (TDS)	400	mg/L		07/29/16 14:11	07/29/16 15:17	DMB	SM 2540C
Soluble Anions - PIA							
Chloride, Dissolved	1.8	mg/L		07/28/16 19:31	07/28/16 19:31	BRS	EPA 300.0
Nitrate, Dissolved	< 0.02	mg/L		07/28/16 19:31	07/28/16 19:31	BRS	EPA 300.0
Sulfate, Dissolved	< 1.0	mg/L		07/28/16 19:31	07/28/16 19:31	BRS	EPA 300.0
Soluble Metals - PIA							
Arsenic, Dissolved	87	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Boron, Dissolved	610	ug/L		08/12/16 08:04	08/12/16 16:01	JMW	SW 6020
Cadmium, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Chromium, Dissolved	< 4.0	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Lead, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Magnesium, Dissolved	43	mg/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Mercury, Dissolved	< 0.20	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Zinc, Dissolved	< 6.0	ug/L		08/12/16 08:04	08/12/16 13:57	JMW	SW 6020
Soluble Nutrients - PIA							
Ammonia, Dissolved	13	mg/L		08/09/16 10:07	08/09/16 10:07	TCH	EPA 350.1 - QC 10-107-06-2-O

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ANALYTICAL RESULTS

Sample: 6074529-02
Name: G09D
Matrix: Ground Water - Regular Sample

Sampled: 07/27/16 11:30
Received: 07/28/16 10:10

Parameter	Result	Unit	Qualifier	Prepared	Analyzed	Analyst	Method
Field - PIA							
BTM Well Elv	624.96	Feet		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Depth of Water (ft below LS)	59.83	Feet		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Depth, From Measuring Point	62.02	Feet		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Elevation of GW	675.77	Feet		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Elevation of Measuring Point (TOC)	737.79	Feet		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
pH, Field Measured	7.24	pH Units		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Specific Conductance, Field Measured	2154	umhos/cm		07/27/16 11:30	07/27/16 11:30	FIELD	Field*
Temperature, Field Measured	63.7	°F		07/27/16 11:30	07/27/16 11:30	FIELD	SM 2550 B*
General Chemistry - PIA							
Cyanide	< 0.0050	mg/L		08/02/16 09:30	08/03/16 10:31	Iglaz	SM 4500-CN C - EPA 335.4
Solids - total dissolved solids (TDS)	1400	mg/L		07/29/16 14:11	07/29/16 15:17	DMB	SM 2540C
Soluble Anions - PIA							
Chloride, Dissolved	35	mg/L		07/28/16 20:07	07/28/16 20:07	BRS	EPA 300.0
Nitrate, Dissolved	< 0.02	mg/L		07/28/16 19:49	07/28/16 19:49	BRS	EPA 300.0
Sulfate, Dissolved	760	mg/L		07/28/16 20:25	07/28/16 20:25	BRS	EPA 300.0
Soluble Metals - PIA							
Arsenic, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Boron, Dissolved	330	ug/L		08/12/16 08:04	08/12/16 16:10	JMW	SW 6020
Cadmium, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Chromium, Dissolved	< 4.0	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Lead, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Magnesium, Dissolved	110	mg/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Mercury, Dissolved	< 0.20	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Zinc, Dissolved	< 6.0	ug/L		08/12/16 08:04	08/12/16 14:07	JMW	SW 6020
Soluble Nutrients - PIA							
Ammonia, Dissolved	9.7	mg/L		08/09/16 10:13	08/09/16 10:13	TCH	EPA 350.1 - QC 10-107-06-2-O

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ANALYTICAL RESULTS

Sample: 6074529-03
Name: G16M
Matrix: Ground Water - Regular Sample

Sampled: 07/27/16 12:15
Received: 07/28/16 10:10

Parameter	Result	Unit	Qualifier	Prepared	Analyzed	Analyst	Method
Field - PIA							
BTM Well Elv	653.03	Feet		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Depth of Water (ft below LS)	58.44	Feet		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Depth, From Measuring Point	61.14	Feet		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Elevation of GW	676.76	Feet		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Elevation of Measuring Point (TOC)	737.9	Feet		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
pH, Field Measured	7.08	pH Units		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Specific Conductance, Field Measured	1255	umhos/cm		07/27/16 12:15	07/27/16 12:15	FIELD	Field*
Temperature, Field Measured	64.5	°F		07/27/16 12:15	07/27/16 12:15	FIELD	SM 2550 B*
General Chemistry - PIA							
Cyanide	0.017	mg/L		08/02/16 09:30	08/03/16 10:32	Iglaz	SM 4500-CN C - EPA 335.4
Solids - total dissolved solids (TDS)	540	mg/L		08/02/16 11:21	08/02/16 13:53	DMB	SM 2540C
Soluble Anions - PIA							
Chloride, Dissolved	6.0	mg/L		07/28/16 21:37	07/28/16 21:37	BRS	EPA 300.0
Nitrate, Dissolved	< 0.02	mg/L		07/28/16 21:19	07/28/16 21:19	BRS	EPA 300.0
Sulfate, Dissolved	12	mg/L		07/28/16 21:37	07/28/16 21:37	BRS	EPA 300.0
Soluble Metals - PIA							
Arsenic, Dissolved	420	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Boron, Dissolved	630	ug/L		08/12/16 08:04	08/12/16 16:11	JMW	SW 6020
Cadmium, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Chromium, Dissolved	< 4.0	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Lead, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Magnesium, Dissolved	60	mg/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Mercury, Dissolved	< 0.20	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Zinc, Dissolved	< 6.0	ug/L		08/12/16 08:04	08/12/16 14:11	JMW	SW 6020
Soluble Nutrients - PIA							
Ammonia, Dissolved	25	mg/L		08/09/16 10:13	08/09/16 10:13	TCH	EPA 350.1 - QC 10-107-06-2-O

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ANALYTICAL RESULTS

Sample: 6074529-05
Name: G39M
Matrix: Ground Water - Regular Sample

Sampled: 07/27/16 13:00
Received: 07/28/16 10:10

Parameter	Result	Unit	Qualifier	Prepared	Analyzed	Analyst	Method
Field - PIA							
BTM Well Elv	635.78	Feet		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Depth of Water (ft below LS)	66	Feet		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Depth, From Measuring Point	68.43	Feet		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Elevation of GW	664.6	Feet		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Elevation of Measuring Point (TOC)	733.03	Feet		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
pH, Field Measured	7.00	pH Units		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Specific Conductance, Field Measured	1132	umhos/cm		07/27/16 13:00	07/27/16 13:00	FIELD	Field*
Temperature, Field Measured	59.8	°F		07/27/16 13:00	07/27/16 13:00	FIELD	SM 2550 B*
General Chemistry - PIA							
Cyanide	< 0.0050	mg/L		08/02/16 09:30	08/03/16 10:38	Iglaz	SM 4500-CN C - EPA 335.4
Solids - total dissolved solids (TDS)	500	mg/L		08/02/16 11:21	08/02/16 13:53	DMB	SM 2540C
Soluble Anions - PIA							
Chloride, Dissolved	4.9	mg/L		08/02/16 09:38	08/02/16 09:38	BRS	EPA 300.0
Nitrate, Dissolved	< 0.02	mg/L		07/28/16 22:31	07/28/16 22:31	BRS	EPA 300.0
Sulfate, Dissolved	< 1.0	mg/L		07/28/16 22:31	07/28/16 22:31	BRS	EPA 300.0
Soluble Metals - PIA							
Arsenic, Dissolved	9.1	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Boron, Dissolved	450	ug/L		08/12/16 08:04	08/12/16 16:13	JMW	SW 6020
Cadmium, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Chromium, Dissolved	< 4.0	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Lead, Dissolved	< 1.0	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Magnesium, Dissolved	50	mg/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Mercury, Dissolved	< 0.20	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Zinc, Dissolved	< 6.0	ug/L		08/12/16 08:04	08/12/16 14:17	JMW	SW 6020
Soluble Nutrients - PIA							
Ammonia, Dissolved	15	mg/L		08/09/16 10:15	08/09/16 10:15	TCH	EPA 350.1 - QC 10-107-06-2-O