



ENGINEERING+
ENVIRONMENTAL

EnSol, Inc.
661 Main St.
Niagara Falls, NY 14301
716.285.3920

ensolinc.com

Transmitted Via Electronic Mail and USPS

October 9, 2020

Kimberly A. Merchant
Deputy Permit Administrator
New York State Department of Environmental Conservation-Region 8
6274 East Avon-Lima Road
Avon, New York 14414

**Re: Lockwood Ash Disposal Landfill
Response to 9-11-2020 Notice of Incomplete Application #3
DEC ID #8-5736-00005/00001, SPDES Renewal
DEC ID #8-5736-00005/00005, Part 360 Series Renewal
SPDES NY 0101069
Torrey (T), Yates (C)**

Dear Ms. Merchant:

In response to the New York State Department of Environmental Conservation’s (NYSDEC’s or the Department’s) Notice of Incomplete Application (NOIA) #3 dated September 11, 2020, we submit the following responses on behalf of Lockwood Hills LLC (Lockwood). For ease of review, each of your bulleted comments has been repeated in bold and our response follows in plain text.

SPDES Renewal:

Please submit the following information:

- **Sampling data and lab reports for oil & grease, total residual chlorine, total organic nitrogen, and ammonia (as N). See Section III – Sampling Information #1.**

Two samples from the Treatment Pond (Outfall 001/proposed Outfall 01A) were collected in order to provide the sampling data requested – one pre-discharge grab sample from the Treatment Pond on September 17, 2020 and one 24-hour composite sample during a discharge event from the Treatment Pond starting on September 24, 2020. Sampling data from Outfall 001/proposed Outfall 01A was used for other data reported in the SPDES permit renewal/modification application and was confirmed to also be appropriate for the information requested in the Department’s NOIA#3 by e-mail correspondence with Catherine Winters on October 2, 2020. The results of the sampling are provided in the table below and corresponding lab reports are attached.

Sampling Information – Conventional Parameters for Outfalls 001, 01A, 01B, and 01C

| Parameter | Maximum Daily Value | | Maximum 30-Day Value | | Long Term Average | | Number of Analyses | Units | |
|--------------|---------------------|-------------------|----------------------|-------------------|-------------------|-------------------|--------------------|-------|------|
| | Conc. | Mass ¹ | Conc. | Mass ¹ | Conc. | Mass ² | | Conc. | Mass |
| Oil & Grease | < 5.3 | < 5.13 | < 5.3 | < 5.13 | < 5.3 | < 2.49 | 1 ³ | mg/L | Kg |

| | | | | | | | | | |
|-------------------------|--------|---------|--------|---------|--------|---------|---|------|----|
| Total Residual Chlorine | < 0.02 | < 0.019 | < 0.02 | < 0.019 | < 0.02 | < 0.009 | 2 | mg/L | Kg |
| Total Organic Nitrogen | 1.4 | 1.356 | 1.4 | 1.356 | 1.25 | 0.587 | 2 | mg/L | Kg |

Notes: (1) Based on Maximum Flow of 250,000 gpd; (2) Based on Average Flow of 123,974 gpd; (3) Oil and Grease was analyzed on the 9/17/20 pond grab only.

Please submit the following information:

- **Clarification on whether sedimentation basins 1 & 2 (proposed outfall 01B & 01C) will be discharging to groundwater or converging with proposed outfall 01A before a surface water discharge through the proposed outfall 001.**

Discharges from Sediment Basins 1 & 2 will converge with discharge from proposed Outfall 01A in Sediment Trap 1 prior to a surface water discharge through proposed Outfall 001. There are no proposed discharges to groundwater. We have attached a figure (Figure 1) to this response letter to illustrate the pathways discharges from the three sub-outfalls will follow to Sediment Trap 1 and Outfall 001.

Part 360 Series Renewal:

- **Please provide an updated Part 360 permit application form with proper signature.**

The updated Part 360 permit application form with Dale Irwin’s signature is attached to this response letter.

- **Lockwood’s response dated July 13, 2020 identifies the following possible waste streams and estimated annual disposal rates:**
 - **Co-firing of biomass up to the limits allowed under the Greenidge permit is estimated to produce 6,500 tons per year of fly ash**
 - **Dewatered solids from the Greenidge wastewater treatment plant are regularly disposed of at Lockwood at a rate of 12 tons per year**
 - **“Permitted waste from routine maintenance or other activities have the potential to be disposed of in the landfill.” No estimated disposal rates are provided; therefore, the Department will assume an allowance of ~10% of the other estimated rates provided or 651 tons/year.**

These waste streams provide for an estimated maximum anticipated disposal rate of approximately 7,163 tons/year. Based on 220 operating days/year, the Department has determined that a permitted design capacity of 33 tons/day (annual average) is appropriate.

Lockwood acknowledges the Department’s assessment of the anticipated waste streams for the Facility and agrees that 7,163 tons/year is a reasonable estimate for the maximum anticipated disposal rate. However, given the recent pattern operations at the Landfill (see the Table below), the assumption of 220 operating days is higher than typical and leads to a permitted design capacity that is too low to sustain normal operations.

| Year | Annual Total (tons) | Operating Days | Daily Average (tons) (Annual total/# Operating days) |
|-------------|----------------------------|-----------------------|---|
| 2015 | 7,137 | 44 | 162 |
| 2016 | 605 | 1 | 605 |

| | | | |
|-------------|-------|----|-----|
| 2017 | 91 | 1 | 91 |
| 2018 | 12 | 1 | 12 |
| 2019 | 7,055 | 15 | 470 |

Based on this information, a permitted design capacity of 605 tons per day as an annual average is proposed. This proposed permitted design capacity is a 65% reduction from the current design capacity of 1,729 tons per day and, therefore, still represents a significant reduction.

Soil Gas Sampling Protocol:

- **Please add hydrogen gas to the list of analytes or provide a justification for not including it, for Department consideration.**

Per the Department's request, hydrogen gas (H₂) has been added to the list of analytes in the gas sampling protocol. The revised Soil Gas Sampling Protocol is attached to this response letter.

- **Upwind and downwind readings with the GEM are to be recorded at times correlating to soil gas measurements to identify background concentrations.**

Additional upwind and downwind sampling requirements have been added to the protocol. The revised Soil Gas Sampling Protocol is attached to this response letter.

We anticipate these answers will satisfy your concerns. Should you have any additional questions or comments, please do not hesitate to contact me.

Sincerely;

EnSol, Inc.



Bethany Acquisto, Ph.D.
Senior Engineer and Environmental Group Leader

cc: Dale Irwin – Lockwood Hills LLC

ec: Chris Gill – Lockwood Hills LLC
Danielle Mettler-LaFeir – Barclay Damon LLP
Dudley Loew – NYSDEC
Lisa Schwartz – NYSDEC
Bernette Shilling – NYSDEC
Greg MacLean - NYSDEC
Yasmin Guevara – NYSDEC
Dan Maeso – NYSDEC
Teresa Diehsner – NYSDEC

Tara Blum - NYSDEC
Jonathan Tamargo – NYSDEC
Thomas Haley – NYSDEC
Don Canastrari – NYSDEC
Michael Wheeler – NYSDEC
Yuan Zeng – NYSDEC
C. Winters – NYSDEC

Attachments: (1) Laboratory Reports for Oil & Grease, Total Residual Chlorine, and Total Organic Nitrogen
(2) Figure 1 – Proposed Outfall Locations
(3) Lockwood Ash Disposal Site Part 360 Permit Application Form
(4) Lockwood Ash Disposal Site Soil Gas Sampling Protocol, Rev1

Attachment 1

EnSol, Inc.



ENGINEERING + ENVIRONMENTAL

Laboratory Reports for Oil & Grease, Total Residual Chlorine, and Total Organic Nitrogen



Experience is the solution

314 North Pearl Street ♦ Albany, New York 12207
(800) 848-4983 ♦ (518) 434-4546 ♦ Fax (518) 434-0891

September 21, 2020

Chris Gill
Lockwood Hills LLC
590 Plant Road, PO Box 187
Dresden, NY 14441

TEL: (315) 536-2359

Work Order No: 200918008

PO#: 20-0099AC

RE: Lockwood Pond Discharge
Outfall 001

Dear Chris Gill:

Adirondack Environmental Services, Inc received 1 sample on 9/18/2020 for the analyses presented in the following report.

Please see case narrative for specifics on analysis.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Hess", is written over a horizontal line.

Christopher Hess
QA Manager

ELAP#: 10709

CLIENT: Lockwood Hills LLC
Project: Lockwood Pond Discharge
Lab Order: 200918008

Date: 21-Sep-20

The sampling was performed in accordance with the AES field sampling procedures and/or the client specified sampling procedures. Sample containers were supplied by Adirondack Environmental Services.

Definitions - RL: Reporting Limit DF: Dilution factor

| | |
|---|---|
| Qualifiers: ND : Not Detected at reporting limit | C: CCV below acceptable Limits |
| J: Analyte detected below quantitation limit | C+: CCV above acceptable Limits |
| B: Analyte detected in Blank | S: LCS Spike recovery is below acceptable limits |
| X : Exceeds maximum contamination limit | S+: LCS Spike recovery is above acceptable limits |
| H: Hold time exceeded | Z: Duplication outside acceptable limits |
| N: Matrix Spike below acceptable limits | T : Tentatively Identified Compound-Estimated |
| N+: Matrix Spike is above acceptable limits | E :Above quantitation range-Estimated |

Note : All Results are reported as wet weight unless noted

The results relate only to the items tested. Information supplied by the client is assumed to be correct.

Adirondack Environmental Services, Inc

Date: 21-Sep-20

CLIENT: Lockwood Hills LLC
Project: Lockwood Pond Discharge
 Outfall 001

LabWork Order: 200918008
PO#: 20-0099AC

Lab SampleID: 200918008-001
Client Sample ID: Outfall 001

Collection Date: 9/17/2020
Matrix: GROUNDWATER

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|----------|--------|----|------|-------|----|---------------|
|----------|--------|----|------|-------|----|---------------|

FIELD-PH, RES CL2, AND TEMP ARE NOT ELAP CERTIFIABLE

Analyst: **FLD**

| | | | | | | |
|----------------------------|------------------|------|--|-------|--|-----------|
| pH (E150.1) | 8.0 | | | S.U. | | 9/17/2020 |
| Residual Chlorine (E330.1) | < 0.02 | 0.02 | | mg/L | | 9/17/2020 |
| Temperature (E170.1) | 17 | | | deg C | | 9/17/2020 |

LOW LEVEL MERCURY - EPA 1631E

Analyst: **SM**

(Prep: 1631E - 9/18/2020)

| | | | | | | |
|---------|------------|-----|--|------|---|-----------|
| Mercury | 1.3 | 0.5 | | ng/L | 1 | 9/21/2020 |
|---------|------------|-----|--|------|---|-----------|

ICP METALS - EPA 200.7 REV 4.4

Analyst: **KH**

(Prep: - 9/18/2020)

| | | | | | | |
|-----------|--------------|-------|--|------|----|----------------------|
| Aluminum | ND | 0.100 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Arsenic | 0.012 | 0.005 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Boron | 27.6 | 0.500 | | mg/L | 10 | 9/18/2020 4:01:00 PM |
| Cadmium | ND | 0.005 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Copper | ND | 0.005 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Iron | ND | 0.050 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Manganese | ND | 0.020 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Selenium | ND | 0.005 | | mg/L | 1 | 9/18/2020 3:52:00 PM |
| Zinc | ND | 0.010 | | mg/L | 1 | 9/18/2020 3:52:00 PM |

AMMONIA (NON-DISTILLED) - EPA 350.1 REV 2.0

Analyst: **NK**

| | | | | | | |
|--------------------------|-----------|-----|--|------|---|----------------------|
| Nitrogen, Ammonia (As N) | ND | 0.1 | | mg/L | 1 | 9/18/2020 1:22:30 PM |
|--------------------------|-----------|-----|--|------|---|----------------------|

TOTAL NITRITE/NITRATE - SM4500 NO3 F-2011

Analyst: **NK**

| | | | | | | |
|----------------------------------|-----------|------|--|------|---|-----------------------|
| Nitrate-Nitrite Nitrogen, (as N) | ND | 0.04 | | mg/L | 2 | 9/18/2020 10:12:15 AM |
|----------------------------------|-----------|------|--|------|---|-----------------------|

ORGANIC NITROGEN - SM 4500 N C-2011

Analyst: **CMH**

| | | | | | | |
|------------------|------------|-----|--|------|---|-----------|
| Organic Nitrogen | 1.1 | 1.0 | | mg/L | 1 | 9/21/2020 |
|------------------|------------|-----|--|------|---|-----------|

TKN (INCL PREP) - SM 4500 N C-2011

Analyst: **JW**

(Prep: SM4500-N C - 9/21/2020)

| | | | | | | |
|---------------------------|------------|-----|--|------|---|-----------|
| Nitrogen, Kjeldahl, Total | 1.1 | 1.0 | | mg/L | 1 | 9/21/2020 |
|---------------------------|------------|-----|--|------|---|-----------|

TOTAL SUSPENDED SOLIDS - SM 2540D-2011

Analyst: **JC**

(Prep: Gen Prep - 9/18/2020)

| | | | | | | |
|-------------------------------|------------|-----|---|------|---|-----------|
| TSS (Residue, Non-Filterable) | 5.4 | 2.0 | S | mg/L | 1 | 9/18/2020 |
|-------------------------------|------------|-----|---|------|---|-----------|

Adirondack Environmental Services, Inc

Date: 21-Sep-20

CLIENT: Lockwood Hills LLC
Project: Lockwood Pond Discharge
Outfall 001

LabWork Order: 200918008
PO#: 20-0099AC

OIL AND GREASE - EPA 1664A

Analyst: **TSZ**

(Prep: E1664 - 9/18/2020)

| | | | | | |
|--------------|-----------|-----|------|---|-----------|
| Oil & Grease | ND | 5.3 | mg/L | 1 | 9/21/2020 |
|--------------|-----------|-----|------|---|-----------|



314 North Pearl Street
Albany, New York 12207
518-434-4546 ♦ Fax: 518-434-0891

200918008
CHAIN OF CUSTODY RECORD

EXPERIENCE IS THE SOLUTION

A full service analytical research laboratory offering solutions to environmental concerns

| Client Name: Lockwood Hills LLC | | Address: | | | | | | |
|---|-------------------|--|----------------------|---|----------------------------|---|-------------|---|
| Send Report to: Dale Irwin/Chris Gill | | Project Name (Location): Lockwood Pond 001 Discharge | | | Samplers Name: K. Ambra | | | |
| Client Phone No: | | PO #: | | | Samplers Signature: | | | |
| Client Fax No: | | | | | | | | |
| AES Sample ID | Client Sample ID: | Date Sampled | Time A=am P=pm | Sample Type | | | # of Cont's | Analysis |
| | | | | Matrix | C | G | | |
| 001 | Outfall 001 | 9/17/20 | 1000 | A P | GW | X | 24 | TSS, Total Metals (Al, As, B, Cd, Cu, Fe, Mn, Se, Zn) |
| 002 | Outfall 001 | 9/17/20 | ↓ | A P | GW | | 14 | Total Organic N, NH ₃ as N LL Hg, 0.86 |
| | | | | A P A P A P A P A P A P A P | | | | Field pH, Temp, TPC |
| Shipment Arrived Via: FedEx UPS Client <input checked="" type="radio"/> AES Other: _____ | | | | Special Instructions/Remarks: Outfall 001 pH 8.0 s.u. Temp 17 C TPC = 40.02 mg/L | | | | |
| Turnaround Time Requested: <input checked="" type="radio"/> Normal By COB 9/21/20 | | | | | | | | |
| Relinquished by: (Signature) <i>[Signature]</i> | | Received by: (Signature) <i>[Signature]</i> | | Date 9/17/20 | Time 1:30P | | | |
| Relinquished by: (Signature) | | Received by: (Signature) | | Date | Time | | | |
| Relinquished by: (Signature) <i>[Signature]</i> | | Received for Laboratory by: <i>[Signature]</i> | | Date 9/18/20 | Time 8:56am | | | |
| Sample Temperature Ambient Chilled Chilling Process begun Notes: 3°C | | Properly Preserved <input checked="" type="radio"/> Y <input type="radio"/> N Notes: _____ | | Received Within Holding Times <input checked="" type="radio"/> Y <input type="radio"/> N Notes: _____ | | | | |



200918008



Experience is the solution

314 North Pearl Street • Albany, New York 12207 • (518) 434-4546 • Fax (518) 434-0891

TERMS, CONDITIONS & LIMITATIONS

All service rendered by the **Adirondack Environmental Services, Inc.** are undertaken and all rates are based upon the following terms:

- (a) Neither **Adirondack Environmental Services, Inc.**, nor any of its employees, agents or sub-contractors shall be liable for any loss or damage arising out of **Adirondack Environmental Services, Inc.**'s performance or nonperformance, whether by way of negligence or breach of contract, or otherwise, in any amount greater than twice the amount billed to the customer for the work leading to the claim of the customer. Said remedy shall be the sole and exclusive remedy against **Adirondack Environmental Services, Inc.** arising out of its work.
- (b) All claims made must be in writing within forty-five (45) days after delivery of the **Adirondack Environmental Services, Inc.** report regarding said work or such claim shall be deemed or irrevocably waived.
- (c) **Adirondack Environmental Services, Inc.** reports are submitted in writing and are for our customers only. Our customers are considered to be only those entities being billed for our services. Acquisition of an **Adirondack Environmental Services, Inc.** report by other than our customer does not constitute a representation of **Adirondack Environmental Services, Inc.** as to the accuracy of the contents thereof.
- (d) In no event shall **Adirondack Environmental Services, Inc.**, its employees, agents or sub-contractors be responsible for consequential or special damages of any kind or in any amount.
- (e) No deviation from the terms set forth herein shall bind **Adirondack Environmental Services, Inc.** unless in writing and signed by a Director of **Adirondack Environmental Services, Inc.**
- (f) Results pertain only to items analyzed. Information supplied by client is assumed to be correct. This information may be used on reports and in calculations and **Adirondack Environmental Services, Inc.** is not responsible for the accuracy of this information.
- (g) Payments by Credit Card/Purchase Cards are subject to a 3% additional charge.



Experience is the solution

314 North Pearl Street ♦ Albany, New York 12207
(800) 848-4983 ♦ (518) 434-4546 ♦ Fax (518) 434-0891

October 06, 2020

Chris Gill
Lockwood Hills LLC
590 Plant Road, PO Box 187
Dresden, NY 14441
TEL: (315) 536-2359

Work Order No: 200924072
PO#: 20-0099AC

RE: Lockwood Pond Discharge
Outfall 001

Dear Chris Gill:

Adirondack Environmental Services, Inc received 2 samples on 9/24/2020 for the analyses presented in the following report.

Please see case narrative for specifics on analysis.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Hess", is written over a horizontal line.

Christopher Hess
QA Manager

ELAP#: 10709

CLIENT: Lockwood Hills LLC

Date: 06-Oct-20

Project: Lockwood Pond Discharge

Lab Order: 200924072

The sampling was performed in accordance with the AES field sampling procedures and/or the client specified sampling procedures. Sample containers were supplied by Adirondack Environmental Services.

Definitions - RL: Reporting Limit DF: Dilution factor

| | |
|---|---|
| Qualifiers: ND : Not Detected at reporting limit | C: CCV below acceptable Limits |
| J: Analyte detected below quantitation limit | C+: CCV above acceptable Limits |
| B: Analyte detected in Blank | S: LCS Spike recovery is below acceptable limits |
| X : Exceeds maximum contamination limit | S+: LCS Spike recovery is above acceptable limits |
| H: Hold time exceeded | Z: Duplication outside acceptable limits |
| N: Matrix Spike below acceptable limits | T : Tentatively Identified Compound-Estimated |
| N+: Matrix Spike is above acceptable limits | E :Above quantitation range-Estimated |

Note : All Results are reported as wet weight unless noted

The results relate only to the items tested. Information supplied by the client is assumed to be correct.

Adirondack Environmental Services, Inc

Date: 06-Oct-20

CLIENT: Lockwood Hills LLC
Project: Lockwood Pond Discharge
 Outfall 001

LabWork Order: 200924072
PO#: 20-0099AC

Lab SampleID: 200924072-001

Collection Date: 9/24/2020

Client Sample ID: Outfall 001

Matrix: GROUNDWATER

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|----------|--------|----|------|-------|----|---------------|
|----------|--------|----|------|-------|----|---------------|

ICP METALS - EPA 200.7 REV 4.4

Analyst: **SM**

(Prep: - 9/25/2020)

| | | | | | | |
|-----------|--------------|-------|--|------|---|-----------|
| Aluminum | ND | 0.100 | | mg/L | 1 | 10/1/2020 |
| Arsenic | ND | 0.005 | | mg/L | 1 | 10/1/2020 |
| Boron | 24.9 | 0.050 | | mg/L | 1 | 10/1/2020 |
| Cadmium | ND | 0.005 | | mg/L | 1 | 10/1/2020 |
| Copper | 0.006 | 0.005 | | mg/L | 1 | 10/1/2020 |
| Iron | 0.102 | 0.050 | | mg/L | 1 | 10/1/2020 |
| Manganese | ND | 0.020 | | mg/L | 1 | 10/1/2020 |
| Selenium | 0.013 | 0.005 | | mg/L | 1 | 10/1/2020 |
| Zinc | 0.018 | 0.010 | | mg/L | 1 | 10/1/2020 |

AMMONIA (NON-DISTILLED) - EPA 350.1 REV 2.0

Analyst: **NK**

| | | | | | | |
|--------------------------|-----------|-----|--|------|---|----------------------|
| Nitrogen, Ammonia (As N) | ND | 0.1 | | mg/L | 1 | 9/30/2020 9:56:40 AM |
|--------------------------|-----------|-----|--|------|---|----------------------|

TOTAL NITRITE/NITRATE - SM4500 NO3 F-2011

Analyst: **NK**

| | | | | | | |
|----------------------------------|-----------|------|--|------|---|-----------------------|
| Nitrate-Nitrite Nitrogen, (as N) | ND | 0.04 | | mg/L | 2 | 10/2/2020 11:09:12 AM |
|----------------------------------|-----------|------|--|------|---|-----------------------|

ORGANIC NITROGEN - SM 4500 N C-2011

Analyst: **CMH**

| | | | | | | |
|------------------|------------|-----|--|------|---|-----------|
| Organic Nitrogen | 1.4 | 1.0 | | mg/L | 1 | 10/5/2020 |
|------------------|------------|-----|--|------|---|-----------|

TKN (INCL PREP) - SM 4500 N C-2011

Analyst: **JW**

(Prep: SM4500-N C - 10/2/2020)

| | | | | | | |
|---------------------------|------------|-----|--|------|---|-----------|
| Nitrogen, Kjeldahl, Total | 1.4 | 1.0 | | mg/L | 1 | 10/5/2020 |
|---------------------------|------------|-----|--|------|---|-----------|

TOTAL SUSPENDED SOLIDS - SM 2540D-2011

Analyst: **JC**

(Prep: Gen Prep - 9/30/2020)

| | | | | | | |
|-------------------------------|------------|-----|--|------|---|-----------|
| TSS (Residue, Non-Filterable) | 5.9 | 1.3 | | mg/L | 1 | 9/30/2020 |
|-------------------------------|------------|-----|--|------|---|-----------|

Adirondack Environmental Services, Inc

Date: 06-Oct-20

CLIENT: Lockwood Hills LLC
Project: Lockwood Pond Discharge
Outfall 001

LabWork Order: 200924072
PO#: 20-0099AC

Lab SampleID: 200924072-002

Collection Date: 9/24/2020

Client Sample ID: Outfall 001

Matrix: GROUNDWATER

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|-----------------|---------------|-----------|-------------|--------------|-----------|----------------------|
|-----------------|---------------|-----------|-------------|--------------|-----------|----------------------|

FIELD-PH, RES CL2, AND TEMP ARE NOT ELAP CERTIFIABLE

Analyst: **FLD**

| | | | | | | |
|----------------------------|------------------|------|--|-------|--|-----------|
| pH (E150.1) | 8.3 | | | S.U. | | 9/24/2020 |
| Residual Chlorine (E330.1) | < 0.02 | 0.02 | | mg/L | | 9/24/2020 |
| Temperature (E170.1) | 20 | | | deg C | | 9/24/2020 |

LOW LEVEL MERCURY - EPA 1631E

Analyst: **KH**

(**Prep: 1631E - 10/2/2020**)

| | | | | | | |
|---------|------------|-----|--|------|---|-----------|
| Mercury | 1.5 | 0.5 | | ng/L | 1 | 10/6/2020 |
|---------|------------|-----|--|------|---|-----------|



314 North Pearl Street
 Albany, New York 12207
 518-434-4546 ♦ Fax: 518-434-0891

CHAIN OF CUSTODY RECORD

200924072

EXPERIENCE IS THE SOLUTION

A full service analytical research laboratory offering solutions to environmental concerns

| Client Name: Lockwood Hills LLC | | Address: | | | | | | | |
|--|-------------------|--|----------------------|---|---|---|-------------|---|--|
| Send Report to: Dale Irwin/Chris Gill | | Project Name (Location): Lockwood Pond 001 Discharge | | | | Samplers Name: <i>K. Ambrose</i> | | | |
| Client Phone No: | | PO #: | | | | Samplers Signature: <i>[Signature]</i> | | | |
| Client Fax No: | | | | | | | | | |
| AES Sample ID | Client Sample ID: | Date Sampled | Time A=am P=pm | Sample Type | | | # of Cont's | Analysis | |
| | | | | Matrix | C | G | | | |
| 001 | Outfall 001 | 9/22-23/20 | 1509 | A P | GW | C | 2 | TSS, Total Metals (Al, As, B, Cd, Cu, Fe, Mn, Se, Zn) | |
| | | | | A P | | | | Total Organic N, NH ₃ -N | |
| 002 | Outfall 001 | 9/23/20 | 1503 | A P | GW | | 1 | LL Hg | |
| | | | | A P | | | | Field pH, Temp, TRC | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| | | | | A P | | | | | |
| Shipment Arrived Via: FedEx UPS Client <u>AES</u> Other: _____ | | | | Special Instructions/Remarks: Outfall 001 pH <u>8.3</u> s.u. Temp <u>20</u> C TRC = < 0.02 mg/l | | | | | |
| Turnaround Time Requested: <input checked="" type="checkbox"/> Normal | | | | | | | | | |
| Relinquished by: (Signature) <i>[Signature]</i> | | Received by: (Signature) <i>March</i> | | | Date 9/24/20 | Time 1:33p | | | |
| Relinquished by: (Signature) | | Received by: (Signature) | | | Date | Time | | | |
| Relinquished by: (Signature) <i>March</i> | | Received for Laboratory by: <i>King</i> | | | Date 9/24/20 | Time 4:20pm | | | |
| Sample Temperature Ambient <input checked="" type="checkbox"/> Chilled Chilling Process begun Notes: <u>2°C</u> | | Properly Preserved <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Notes: _____ | | | Received Within Holding Times <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Notes: _____ | | | | |



200924072



Experience is the solution

314 North Pearl Street • Albany, New York 12207 • (518) 434-4546 • Fax (518) 434-0891

TERMS, CONDITIONS & LIMITATIONS

All service rendered by the **Adirondack Environmental Services, Inc.** are undertaken and all rates are based upon the following terms:

- (a) Neither **Adirondack Environmental Services, Inc.**, nor any of its employees, agents or sub-contractors shall be liable for any loss or damage arising out of **Adirondack Environmental Services, Inc.**'s performance or nonperformance, whether by way of negligence or breach of contract, or otherwise, in any amount greater than twice the amount billed to the customer for the work leading to the claim of the customer. Said remedy shall be the sole and exclusive remedy against **Adirondack Environmental Services, Inc.** arising out of its work.
- (b) All claims made must be in writing within forty-five (45) days after delivery of the **Adirondack Environmental Services, Inc.** report regarding said work or such claim shall be deemed or irrevocably waived.
- (c) **Adirondack Environmental Services, Inc.** reports are submitted in writing and are for our customers only. Our customers are considered to be only those entities being billed for our services. Acquisition of an **Adirondack Environmental Services, Inc.** report by other than our customer does not constitute a representation of **Adirondack Environmental Services, Inc.** as to the accuracy of the contents thereof.
- (d) In no event shall **Adirondack Environmental Services, Inc.**, its employees, agents or sub-contractors be responsible for consequential or special damages of any kind or in any amount.
- (e) No deviation from the terms set forth herein shall bind **Adirondack Environmental Services, Inc.** unless in writing and signed by a Director of **Adirondack Environmental Services, Inc.**
- (f) Results pertain only to items analyzed. Information supplied by client is assumed to be correct. This information may be used on reports and in calculations and **Adirondack Environmental Services, Inc.** is not responsible for the accuracy of this information.
- (g) Payments by Credit Card/Purchase Cards are subject to a 3% additional charge.

Attachment 2

EnSol, Inc.



ENGINEERING + ENVIRONMENTAL

Figure 1 – Proposed Outfall Locations

Attachment 3

EnSol, Inc.



ENGINEERING + ENVIRONMENTAL

Lockwood Ash Disposal Site Part 360 Permit Application Form



Department of Environmental Conservation

| | |
|---------------------|----------------------|
| DEPARTMENT USE ONLY | |
| DEC APPLICATION NO. | <input type="text"/> |
| ACTIVITY NUMBER(S) | <input type="text"/> |

Division of Materials Management
APPLICATION FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

Please read all instructions before completing this application

Please **TYPE** or **PRINT** clearly

| | | |
|---|--|--|
| 1. APPLICATION TYPE (CHECK ALL APPLICABLE BOXES): <input type="checkbox"/> Initial (New) <input type="checkbox"/> Renewal <input type="checkbox"/> Subsequent Landfill Stage (New) <input type="checkbox"/> Modification | 2. APPLICANT IS: <input type="checkbox"/> Facility Owner <input type="checkbox"/> Facility Operator | 3. IS APPLICATION FILED BY OR ON BEHALF OF A MUNICIPALITY? <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | | If Yes, Name <input type="text"/> |

| | | |
|---|--|---|
| 4. FACILITY OWNER'S INFORMATION Name <input type="text"/> Address <input type="text"/> City <input type="text"/> State/Zip <input type="text"/> Phone <input type="text"/> Email <input type="text"/> | 5. FACILITY OPERATOR'S INFORMATION Name <input type="text"/> Address <input type="text"/> City <input type="text"/> State/Zip <input type="text"/> Phone <input type="text"/> Email <input type="text"/> | 6. ENGINEER'S INFORMATION Name <input type="text"/> NY License # <input type="text"/> Phone <input type="text"/> Firm Name <input type="text"/> Address <input type="text"/> Email <input type="text"/> |
|---|--|---|

| | |
|--|--|
| 7. FACILITY NAME AND LOCATION (Attach USGS Topo Map showing exact location) Name <input type="text"/> Street <input type="text"/> City/State/Zip <input type="text"/> Town <input type="text"/> County <input type="text"/> Coordinates: NYTM--E <input type="text"/> NYTM--N <input type="text"/> | 8. SITE OWNER'S INFORMATION Name <input type="text"/> Address <input type="text"/> City/Town <input type="text"/> State/Zip <input type="text"/> Phone <input type="text"/> Email <input type="text"/> |
|--|--|

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|---------------------------------|--|---|--|---|---|------------------|----------------|-------------------|-------------------------------|--|--------------------------|--|--|--|--|
| 9. TYPE OF FACILITY (Check all applicable boxes) <table border="0"> <tr><td>Combustion & Thermal Treatment (362-1)</td><td>Navigational Dredge Mat. H'lding & Recovery(361-9)</td></tr> <tr><td>C & D Debris Handling & Recovery (361-5)</td><td>Nonspecific Facilities (360.17)</td></tr> <tr><td>Composting & Other Organics Processing (361-3)</td><td>Recyclables Handling & Recovery (361-1)</td></tr> <tr><td>Household Hazardous Waste Collection (362-4)</td><td>Research, Development, and Demonstration (360.18)</td></tr> <tr><td>Land Application & Associated Storage (361-2)</td><td>Transfer (362-3)</td></tr> <tr><td>Landfill (363)</td><td>Waste Oil (374-2)</td></tr> <tr><td>Regulated Medical Waste (365)</td><td>Waste Tire Handling & Recovery (361-6)</td></tr> <tr><td>Mulch Processing (361-4)</td><td>Used Cooking Oil & Yellow Grease (361-8)</td></tr> <tr><td>Municipal Solid Waste Processing (362-2)</td><td></td></tr> </table> | Combustion & Thermal Treatment (362-1) | Navigational Dredge Mat. H'lding & Recovery(361-9) | C & D Debris Handling & Recovery (361-5) | Nonspecific Facilities (360.17) | Composting & Other Organics Processing (361-3) | Recyclables Handling & Recovery (361-1) | Household Hazardous Waste Collection (362-4) | Research, Development, and Demonstration (360.18) | Land Application & Associated Storage (361-2) | Transfer (362-3) | Landfill (363) | Waste Oil (374-2) | Regulated Medical Waste (365) | Waste Tire Handling & Recovery (361-6) | Mulch Processing (361-4) | Used Cooking Oil & Yellow Grease (361-8) | Municipal Solid Waste Processing (362-2) | | 10. NAME(S) OF ALL MUNICIPALITIES SERVED: <input type="text"/> |
| Combustion & Thermal Treatment (362-1) | Navigational Dredge Mat. H'lding & Recovery(361-9) | | | | | | | | | | | | | | | | | | |
| C & D Debris Handling & Recovery (361-5) | Nonspecific Facilities (360.17) | | | | | | | | | | | | | | | | | | |
| Composting & Other Organics Processing (361-3) | Recyclables Handling & Recovery (361-1) | | | | | | | | | | | | | | | | | | |
| Household Hazardous Waste Collection (362-4) | Research, Development, and Demonstration (360.18) | | | | | | | | | | | | | | | | | | |
| Land Application & Associated Storage (361-2) | Transfer (362-3) | | | | | | | | | | | | | | | | | | |
| Landfill (363) | Waste Oil (374-2) | | | | | | | | | | | | | | | | | | |
| Regulated Medical Waste (365) | Waste Tire Handling & Recovery (361-6) | | | | | | | | | | | | | | | | | | |
| Mulch Processing (361-4) | Used Cooking Oil & Yellow Grease (361-8) | | | | | | | | | | | | | | | | | | |
| Municipal Solid Waste Processing (362-2) | | | | | | | | | | | | | | | | | | | |

| | |
|--|--|
| 11. SOLID WASTES ACCEPTED: Identify facility capacity and throughput of each waste type, as applicable <input type="text"/> | 12. FACILITY SIZE a. Facility size proposed (acres) <input type="text"/> b. Total site area (acres) <input type="text"/> c. Landfill only: Facility size ultimately planned (acres) <input type="text"/> d. Existing landfill area on this site and adjacent properties (acres) <input type="text"/> e. Landfill only: Ultimate facility height above ground level (feet) <input type="text"/> |
|--|--|

13. IS A VARIANCE REQUESTED FROM ANY PROVISION OF 6 NYCRR PART 360?
 Yes No If yes, cite specific provision(s)

14. CERTIFICATION: Corporation Partnership Sole Proprietorship Municipality

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits was prepared by me or under my supervision and direction and is true to the best of my knowledge and belief, and that I have authority or am authorized as (title) _____ of (entity) _____

to sign this application pursuant to 6 NYCRR Part 360. I am aware that any false statement made herein is punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

Date _____ Signature DALE LAWAN Print Name _____

Attachment 4

EnSol, Inc.



ENGINEERING + ENVIRONMENTAL

Lockwood Ash Disposal Site Soil Gas Sampling Protocol, Rev1



ENGINEERING+
ENVIRONMENTAL

EnSol, Inc.
661 Main St.
Niagara Falls, NY 14301
716.285.3920

ensolinc.com

Memorandum

Date: October 6, 2020

To: File

From: EnSol, Inc.

**RE: Lockwood Ash Disposal Site
Soil Gas Sampling Protocol, Rev. 1**

The following is a protocol for the soil gas sampling event set to take place at the Lockwood Ash Disposal Site (the Site) during the fall of 2020.

SAMPLE LOCATIONS (see Attachment 1):

- 1 = Pre-Disturbance Downwind Background Ambient Air, Sample DW1
- 2 = Upwind Background Ambient Air, Sample UW1
- 3 = Original Ash Disposal Site, Point LW1
- 4 = Stage I Overfill, Point LW2
- 5 = Stage I; within 2019 disposal area, Point LW3
- 6 = Stage II; outside the 2019 disposal area, Point LW4
- 7 = Post-Disturbance Downwind Background Ambient Air, Sample DW2

ANALYTES: Field Measurements Only – CH₄, CO₂, O₂, CO, H₂S, H₂, balance gas, temperature, relative pressure, flow

STANDARD OPERATING PROCEDURE:

1) General Procedure

- a. Three weeks prior to event:
 - i. Purchase AMS Telescoping Regular Auger Kit (2 1/4" diameter), or equivalent, from EnviroSupply & Service
 - ii. Purchase molding clay from Michaels (2 1-lb blocks)
 - iii. Purchase plastic sheeting from Home Depot (10ft x 25 ft)
- b. One week prior to event:
 - i. Rent 1 Landtec GEM5000 Plus Landfill Gas Monitor, or equivalent, from Pine Environmental
 - ii. Check forecast to ensure sample date will not fall within 48 hours of a rainfall event of 0.5 inches or greater
 - iii. Contact Lockwood (Chris Gill) and arrange for access to the Site
- c. One day prior to event:
 - i. Collect necessary equipment (See equipment list at end of this SOP)
 - ii. Create sampling point IDs using the Landtec System Gas Analyzer Manager software
 1. Two for each LW sample point; one for ambient air and one for the sample point borehole
 2. One for each of the three background ambient air locations
 - iii. Double check forecast for the following day
 - iv. Confirm site access arrangements with Lockwood (Chris Gill)
- d. Day of sampling event
 - i. Load required equipment into vehicle and travel to Site
 - ii. Roughly determine wind direction using a wetted finger or a lighter flame to identify pre-disturbance downwind and upwind background ambient air sample locations
 - iii. Walk to the pre-disturbance downwind sample location and record the location with a handheld global positioning system (GPS), then take an ambient air reading (See Step 2)

- iv. Confirm wind direction, then walk to the upwind sample location and record the location with GPS, then take an ambient air reading (See Step 2)
- v. Walk to the first LW location and record the location with GPS
- vi. Advance borehole and take measurements (See Step 3)
- vii. Return excavated materials to the borehole, taking care to restore the intermediate cover thickness and grass plug
- viii. Repeat Steps 1(d)(ii) through 1(d)(iv) for each LW sampling location
- ix. Again, confirm wind direction, then walk to the post-disturbance downwind sample location and record the location with GPS, then take the final ambient air reading (See Step 2)
- x. Pack up and return to office
- e. Day after sampling event
 - i. Upload field data and photographs and scan in Field Observation Forms
 - ii. Email Lockwood Hills LLC staff with sample point locations so intermediate cover can be reapplied to those areas, if necessary
 - iii. Return rental equipment

2) Ambient Air Sample Collection

- a. Start the GEM5000 and allow the machine to self-test (approx. 10 seconds)
- b. Go through Preliminary Checklist (See Attachment 2)
 - i. During Step 2 of the checklist choose the GEM5000 setting for landfill gas analysis
- c. Select ID
- d. Position the inlet probe of the GEM5000 one to two inches above the ground
- e. Allow analyzer to purge with fresh air (approx. 30 seconds)
- f. Press fan button to start sampling ambient air. Allow readings one to two minutes to stabilize. Record measurements for the ambient air sampling point in the GEM5000 and on a Field Observation Form.

- i. After recording readings from the Main Gas Read screen, navigate to the Diagnostics screen (Menu → Key 4 – Diagnostics), record the H₂ reading and press Exit to return to the Device Settings Menu

3) LW Sample Collection

- a. Have one team member advance a borehole to a depth of 5.5 feet using a hand auger, placing excavated materials on plastic sheeting, with the cores in the order they were removed from the borehole
 - i. If materials encountered are resistant to the hand auger the field sampling team may choose to create a borehole and sample a different location within the same landfill cell
 - ii. Avoid generating dusty conditions by gently placing excavated materials onto the plastic sheet
- b. Have the other team member perform an ambient air measurement as near to the sample location as possible (see Step 2)
- c. Connect clear sample tube to white port and the sample point *Do not connect the blue tube at this point*
- d. Connect yellow exhaust tube to yellow port and place a safe distance from the operator
- e. Connect temperature probe to Connector B (See GEM5000 Operating Manual, p. 15)
- f. Mark 5 feet on the sample tubing and 4 and a half feet on the temperature probe using electrical tape and lower the white tube, blue tube (do not connect to differential sample point yet), and temperature probe to a depth of 5 feet and 4 and a half feet, respectively. Once the tubing and probe are at the required depth the opening of the borehole shall be sealed using molding clay
- g. Purge two sample volumes at a rate of 550 cc/min for approximately 17 minutes. This should equate to approximately 4.69 liters. Record calculated purge volume, rate, and duration of each purge on a Field Observation Form

- h. While purging is ongoing, have one team member characterize the core removed during excavation of the borehole (See Step 4)
- i. Once purging is complete follow the steps outlined in the GEM5000 Operating Manual (Attachment 3) and the on-screen directions to collect the required measurements
 - i. When directions call for disconnecting tubes from the sample point remove them from the ports on the GEM5000
 - ii. In addition to saving measurements in the GEM5000 the readings should also be noted on a Field Observation Form in the case data in the GEM5000 becomes corrupted
 - iii. After recording readings from the Main Gas Read screen, navigate to the Diagnostics screen (Menu → Key 4 – Diagnostics), record the H₂ reading and press Exit to return to the Device Settings Menu

4) Characterization of Excavated Materials

- a. While one sampling team member watches the GEM5000 to ensure proper functioning during the purging period, the other team member should characterize the materials excavated from the borehole
 - i. Expected materials include intermediate cover as defined in the Site's O&M Manual, fly ash, bottom ash, pulverizer mill rejects, and sludge/ash mixtures
- b. Record observations on a Field Observation Form
- c. Once characterization of the materials is complete the plastic sheeting should be folded over to prevent wind action on the materials from generating dust until the materials are returned to the borehole
- d. If purging or gas sampling is still ongoing after the completion of Step 4(c) then the team member that characterized the extracted materials should move on to the subsequent sampling location and begin preparing the next borehole

EQUIPMENT LIST:

- 1 Landtec GEM5000 Plus Landfill Gas Analyzer (Rented from Pine Environmental)
- 1 AMS Telescoping Regular Auger Kit (2 ¼" diameter)
- 1 GPS unit
- 1 Molding clay
- 1 Plastic sheet (10 ft x 10 ft)
- 1 Utility knife to cut plastic sheeting
- 1 Water bottle
- 1 Lighter
- 4 Field observations forms
- 1 clip board and ballpoint pen
- 1 permanent marker (fine point)
- 1 timer device (e.g., cell phone)
- 1 Electronic copy of Landtec GEM5000 Landfill Gas Analyzer Operating Manual
- 1 Measuring tape
- 1 Shovel
- 1 Garbage bag
- 2 Sets of personal protective equipment (see below)

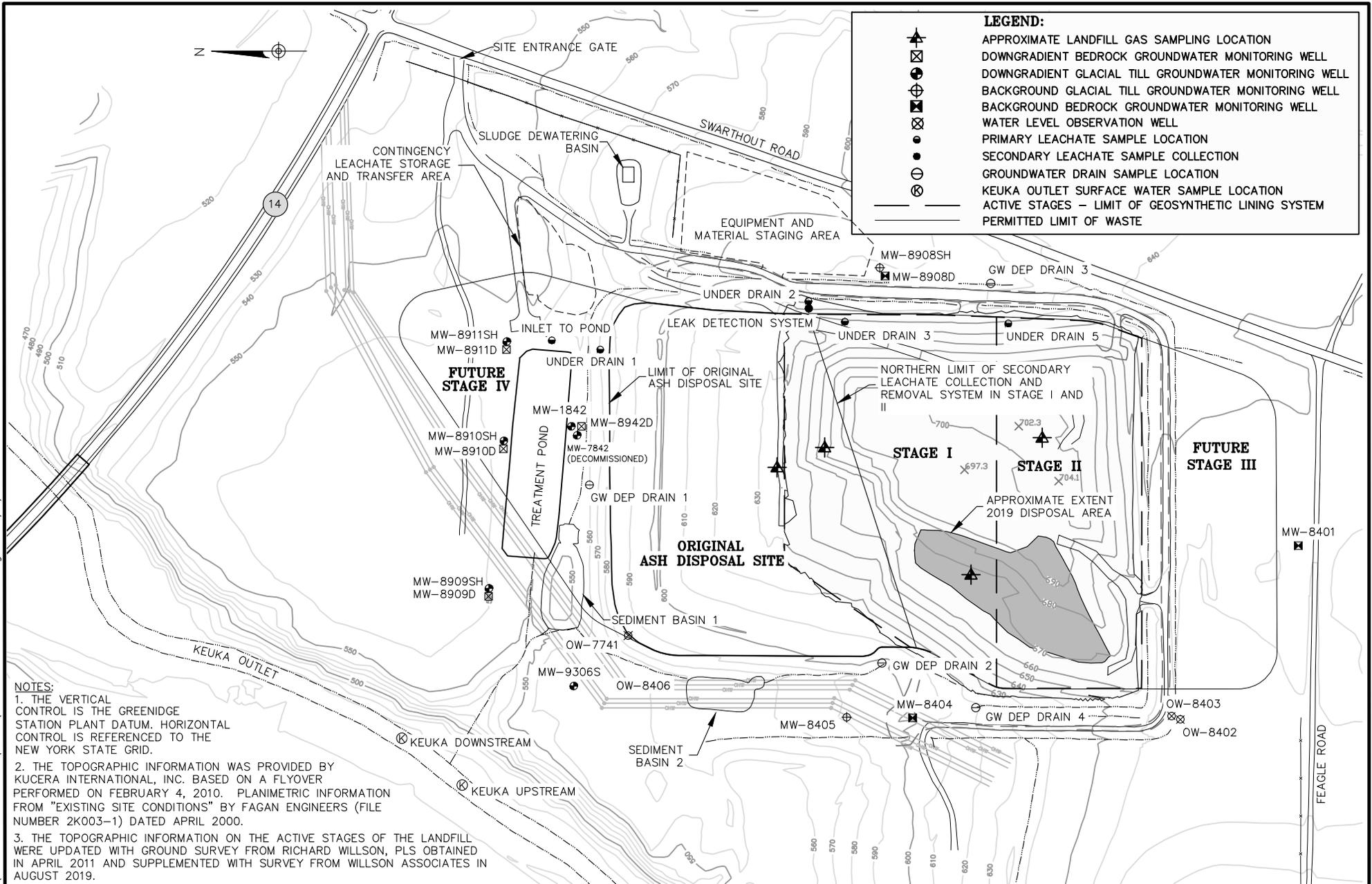
PERSONAL PROTECTIVE EQUIPMENT AND ACTIONS FOR WORK WITH FLY ASH:

- Face and Eyes: Goggles or safety glasses
- Clothing: Long sleeves, long pants; waterproof/resistant materials recommended
- Hands: Work gloves or butyl rubber gloves
- Feet: Shoes or work boots; boot covers recommended
- Wash exposed skin thoroughly after exposure
- Launder dusty or wet clothing after exposure to fly ash
- Dust generation and potential risk of inhaling fly ash will be minimized using operational controls including careful movement and placement of excavated materials and covering the materials with plastic sheeting following material characterization

ATTACHMENT 1

Schematic Site Plan

Q:\Lockwood Hills LLC\ACAD\SCHEMATIC SITE PLAN.dwg 10/6/2020 12:06 PM



NOTES:
 1. THE VERTICAL CONTROL IS THE GREENIDGE STATION PLANT DATUM. HORIZONTAL CONTROL IS REFERENCED TO THE NEW YORK STATE GRID.
 2. THE TOPOGRAPHIC INFORMATION WAS PROVIDED BY KUCERA INTERNATIONAL, INC. BASED ON A FLYOVER PERFORMED ON FEBRUARY 4, 2010. PLANIMETRIC INFORMATION FROM "EXISTING SITE CONDITIONS" BY FAGAN ENGINEERS (FILE NUMBER 2K003-1) DATED APRIL 2000.
 3. THE TOPOGRAPHIC INFORMATION ON THE ACTIVE STAGES OF THE LANDFILL WERE UPDATED WITH GROUND SURVEY FROM RICHARD WILLSON, PLS OBTAINED IN APRIL 2011 AND SUPPLEMENTED WITH SURVEY FROM WILLSON ASSOCIATES IN AUGUST 2019.

DAIGLER ENGINEERING, P.C.
 CIVIL & GEO-ENVIRONMENTAL ENGINEERING
 2620 GRAND ISLAND BLVD. GRAND ISLAND, NEW YORK 14072
 (716) 773-6872 (716) 773-6873 FAX

| | | | | | |
|--------------------|----------------|---|----------|--|---------------|
| LOCKWOOD HILLS LLC | | SCHEMATIC SITE PLAN LOCKWOOD ASH DISPOSAL SITE | | | FIGURE 1-1 |
| SCALE: 1"=350' | REVISION # 0 | | | | |
| October 2020 | TOWN OF TORREY | YATES COUNTY | NEW YORK | | |

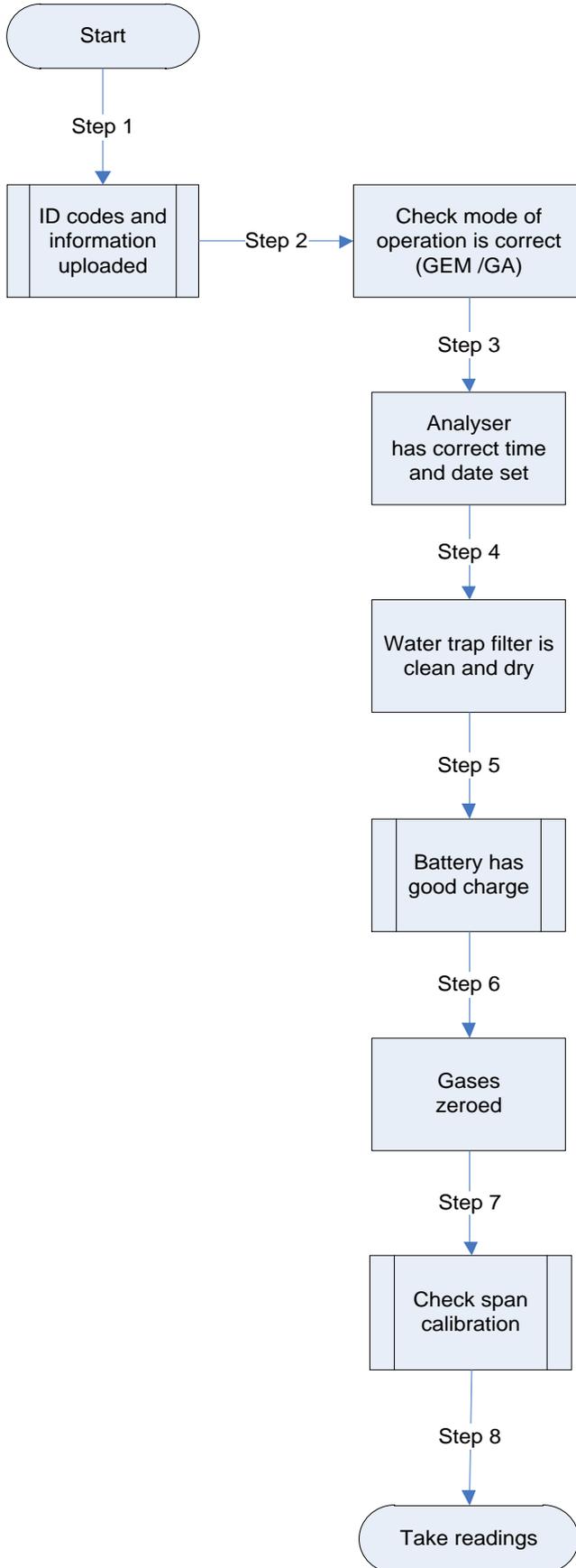
ATTACHMENT 2

Preliminary Checklist

(Excerpt from GEM5000 Gas Analyzer Operating Manual)

8.0 Taking Readings

8.1 Preliminary checks before taking readings (best practice)



Prior to use, it is good practice to ensure that:

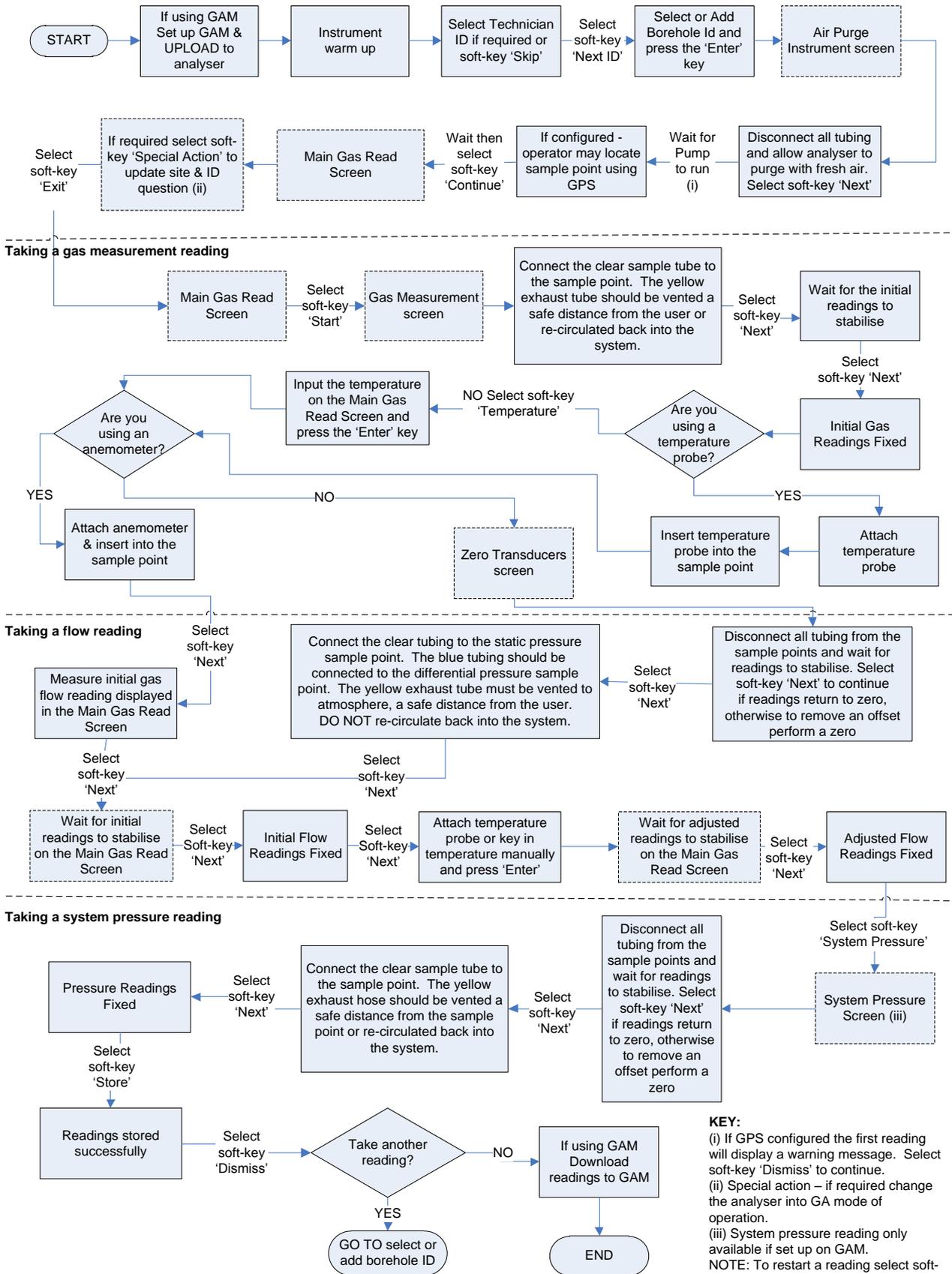
- Step 1** If using LSGAM - all necessary ID codes and information have been uploaded from LSGAM to the analyzer. Please see section 8.1.1 for more information on this.
- Step 2** Check the 'Mode of Operation' is correct. Choose either GEM5000 for gas extraction monitoring analyzer or GA5000 for landfill gas analyzer. Change using 'Special Actions'.
- Step 3** The instrument has the correct time and date set.
- Step 4** The water trap filter is fitted and is clean and dry.
- Step 5** The battery has a good charge (minimum 25% charge, even if only a few readings are required).
- Step 6** The gas channels have been zeroed, without gas concentration present.
- Step 7** If necessary check the span calibration with a known concentration calibration gas.
- Step 8** Take readings.

ATTACHMENT 3

Sampling Flow Diagram

(Excerpt from GEM5000 Gas Analyzer Operating Manual)

8.13 Taking gas and flow measurement



KEY:
 (i) If GPS configured the first reading will display a warning message. Select soft-key 'Dismiss' to continue.
 (ii) Special action – if required change the analyser into GA mode of operation.
 (iii) System pressure reading only available if set up on GAM.
 NOTE: To restart a reading select soft-key 'Special Action' followed by key 1 'Restart Process'.