

Bayer CropScience



Mr. William F. Durham, Director
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304



CERTIFIED MAIL

(Return Receipt Requested)
7008 0500 0000 7888 2399

Re: Bayer CropScience Institute Site, Institute, West Virginia
Permit Determination Form, Goff Mountain Landfill

April 13, 2015

Bayer CropScience
Institute Site
P. O. Box 1005
Charleston, WV 25112

Tel 304 767 6123
Fax 304 767 6879

Dear Mr Durham:

Enclosed is a Permit Determination Form for the planned engineering updates to the Goff Mountain Landfill operations.

If you have any questions concerning this permit determination, please contact Linda Tennant at (304) 767-6161 or via e-mail at linda.tennant@bayer.com.

Sincerely,

A handwritten signature in blue ink that reads "Connie Stewart".

Connie Stewart
Director - QHSE

Enclosures



WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

**PERMIT DETERMINATION FORM
(PDF)**

FOR AGENCY USE ONLY: PLANT I.D. # _____
PDF # _____ PERMIT WRITER _____

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):
Bayer Crop Sciences

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):
Goff Mountain Landfill Leachate Removal System

3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CODE:
5 6 2 2 1 2

4A. MAILING ADDRESS: PO Box 1005
Institute, WV 25112

4B. PHYSICAL ADDRESS: Route 25 at I-64
Institute, WV 25112

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE MAP AS ATTACHMENT A): I-64 west to Institute. Exit onto Route 25 west to the facility on the right at New Goff Mountain Road.

5B. NEAREST ROAD: Route 25

5C. NEAREST CITY OR TOWN: Institute

5D. COUNTY: Kanawha

5E. UTM NORTHING (KM): 4249.133

5F. UTM EASTING (KM): 431.875

5G. UTM ZONE: 17

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:
Linda Tennant

6B. TITLE:
Environmental Specialist

6C. TELEPHONE: 304-767-6161

6D. FAX: 304-767-6621

6E. E-MAIL: Linda.Tennant@bayer.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):
0_3_9_-0_0_0_0_7_

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH THIS PROCESS (FOR AN EXISTING FACILITY ONLY):

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST:

8A. TYPE OF EMISSION SOURCE (CHECK ONE):
 NEW SOURCE ADMINISTRATIVE UPDATE
 MODIFICATION OTHER (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?
 YES NO

9. IS DEMOLITION OR PHYSICAL RENOVATION AT AN EXISTING FACILITY INVOLVED? YES NO

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:
12/01/2015

10B. DATE OF ANTICIPATED START-UP:
December/ 1 /2015

11A. PLEASE PROVIDE A DETAILED PROCESS FLOW DIAGRAM SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS ATTACHMENT B.

11B. PLEASE PROVIDE A DETAILED PROCESS DESCRIPTION AS ATTACHMENT C.

12. PLEASE PROVIDE MATERIAL SAFETY DATA SHEETS (MSDS) FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS ATTACHMENT D. FOR CHEMICAL PROCESSES, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

13A. REGULATED AIR POLLUTANT EMISSIONS:

⇒ FOR A NEW FACILITY, PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ FOR AN EXISTING FACILITY, PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) (HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON
PM		
PM ₁₀		
VOCs	0.00179	0.00783
CO		
NO _x		
SO ₂		
Pb		
HAPs (AGGREGATE AMOUNT)	0.000765	0.00335
TAPs (INDIVIDUALLY)*		
OTHER (INDIVIDUALLY)*		

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL SUPPORTING CALCULATIONS AS ATTACHMENT E.

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. CERTIFICATION OF DATA

I, CONNIE STEWART (TYPE NAME) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A RESPONSIBLE OFFICIAL** (PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: Connie Stewart

TITLE: DIRECTOR

DATE: 14 / April / 2015

**THE DEFINITION OF THE PHRASE 'RESPONSIBLE OFFICIAL' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS

ATTACHMENT A ATTACHMENT B ATTACHMENT C ATTACHMENT D ATTACHMENT E

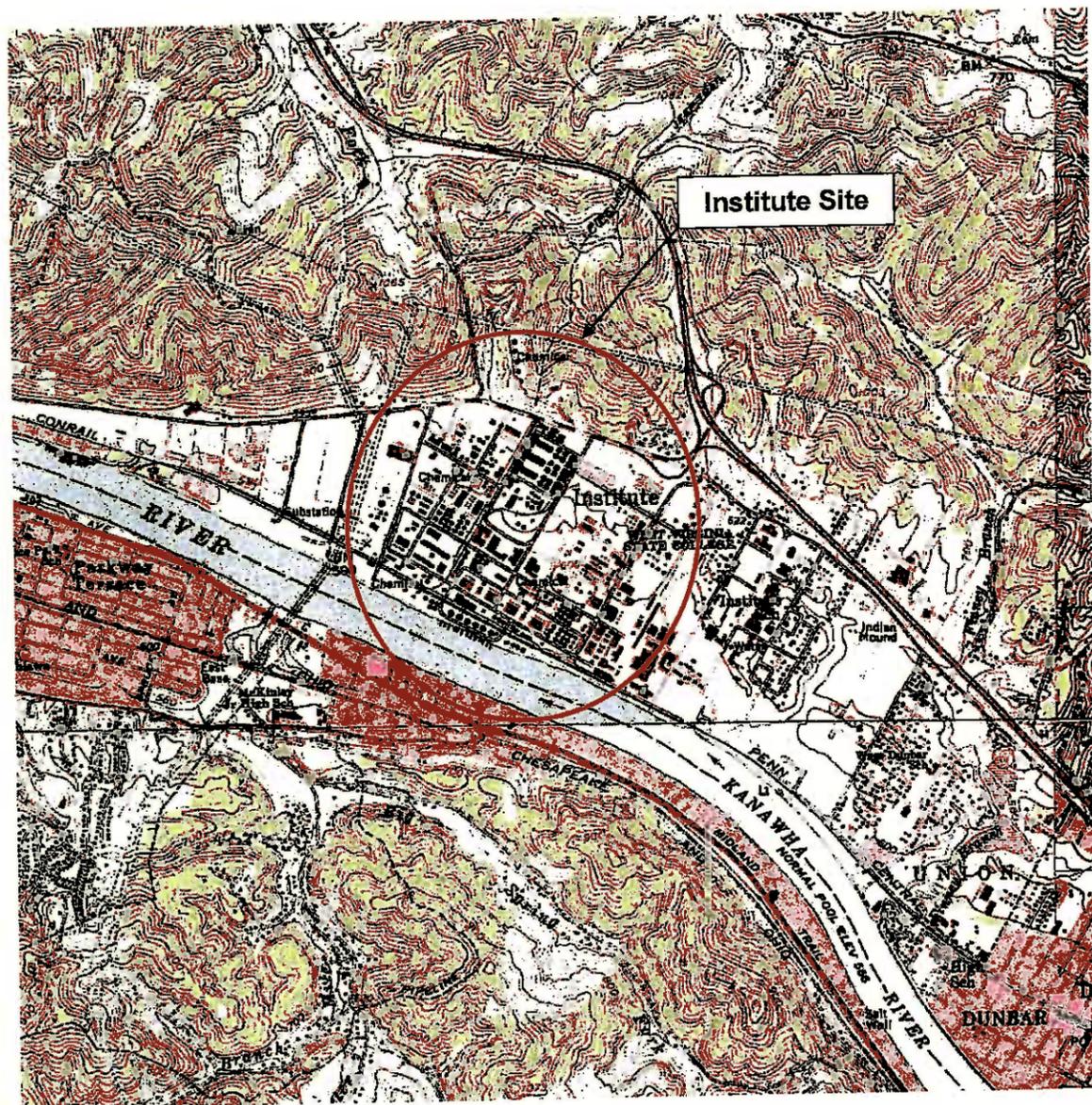
RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

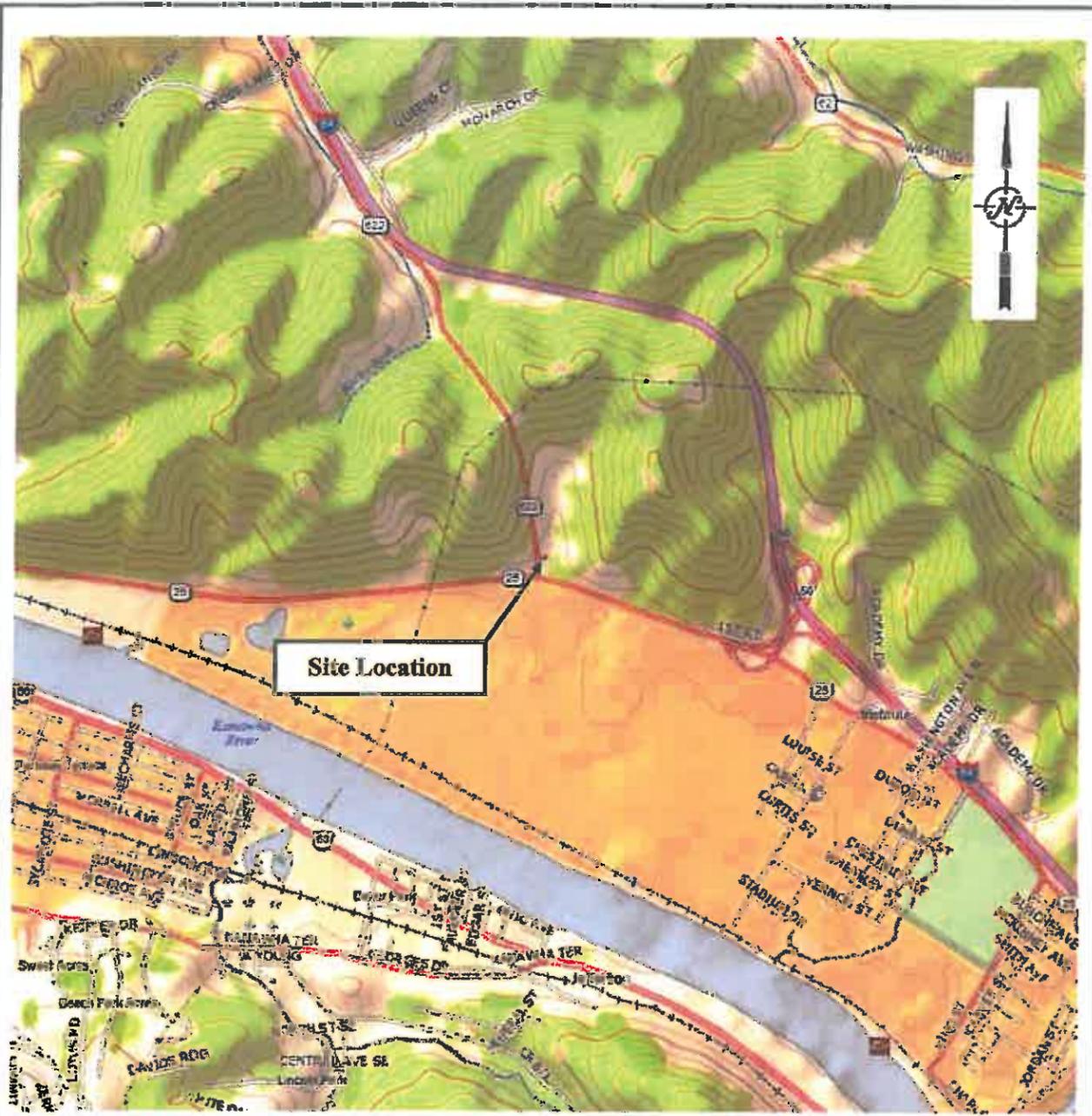
THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE.

www.dep.wv.gov/daq

ATTACHMENT A
Map

Attachment A
Area Map





Reference:
 XMap 6 Professional ©
 DeLorme,
 Yarmouth, Me 04096
 Source Data:
 7.5 Minute USGS
 Topographic Quadrangles

 Saint Albans, WV
 Alum Creek, WV

Vicinity Map

Scale 1" = 2000'

MSES Consultants, Inc.
 Clarksburg, West Virginia

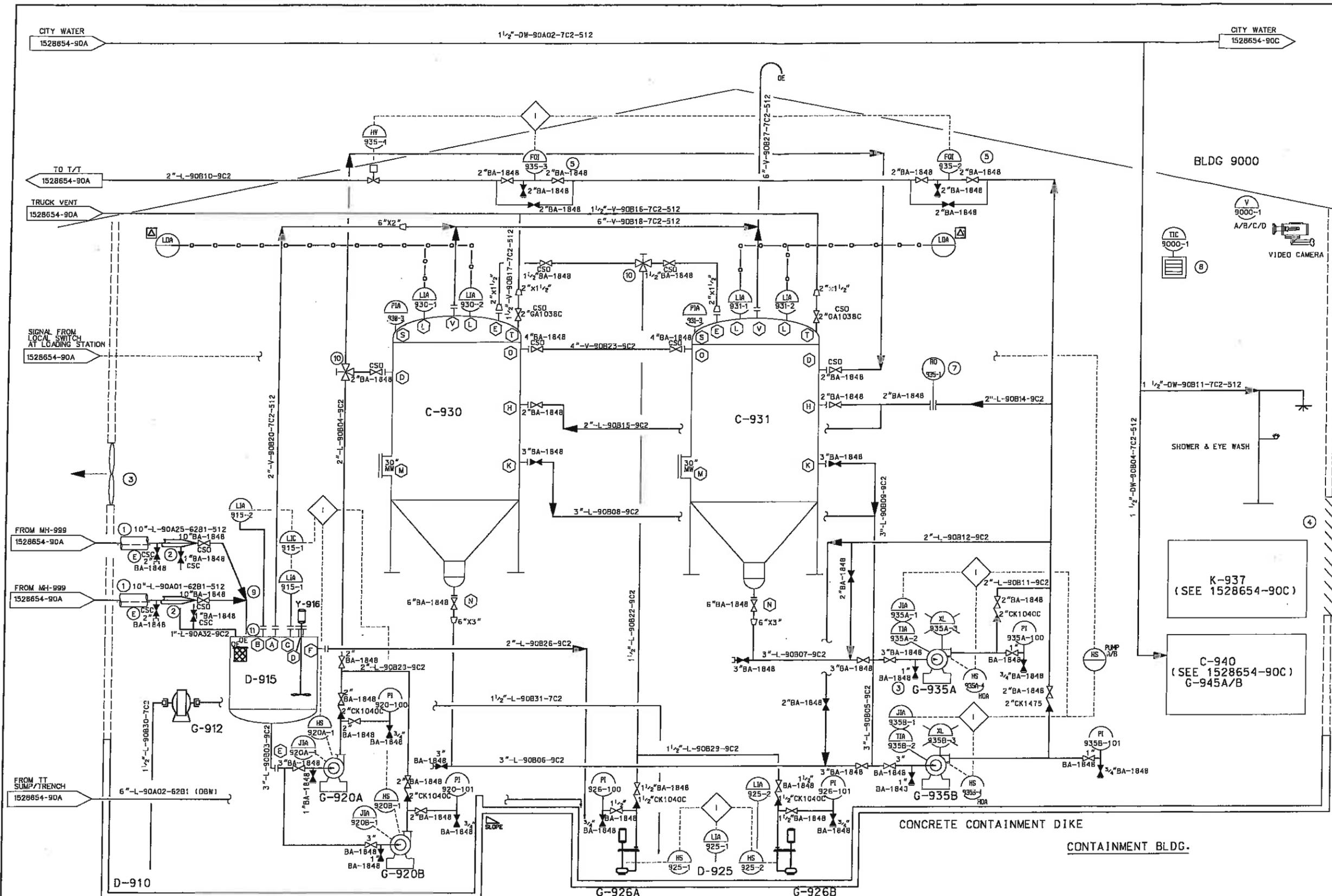
BAYER CROP SCIENCE

Goff Mountain Landfill
 Leachate Removal System

Project No. 15-114

VICINITY MAP

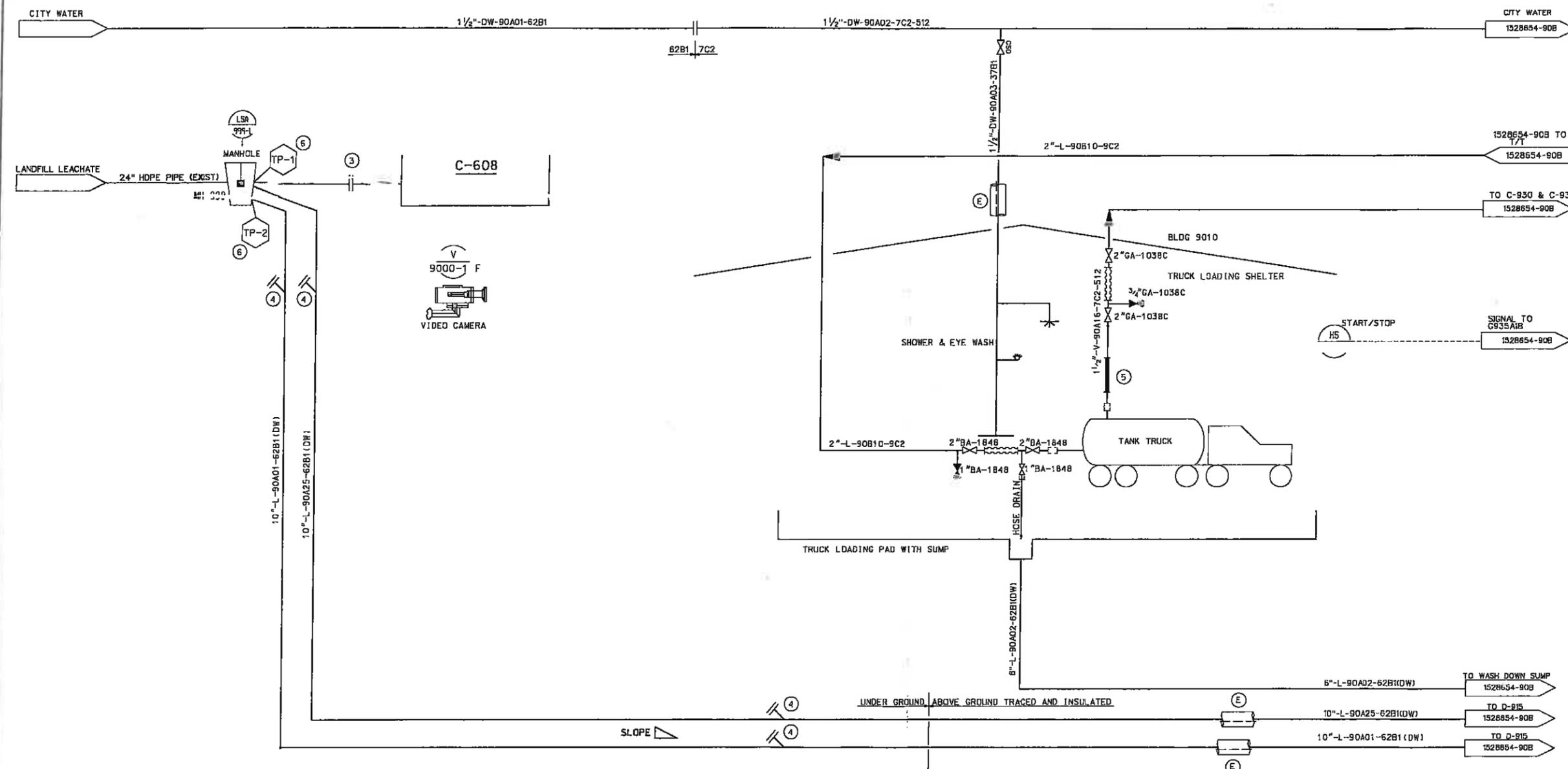
ATTACHMENT B
Process Flow Diagram



- NOTES:**
- ALL ABOVE GROUND PROCESS PIPING OUTSIDE OF CONTAINMENT AREA TO BE DOUBLE CONTAINED HDPE HT & INSULATED.
 - LEAK DETECTION (CLEAR PVC) LOCATE AT LOWEST POINT IN SECONDARY CONTAINMENT.
 - EXHAUST FAN
 - LOUVERS FOR EXHAUST FAN
 - 10 UP STREAM & 5 DOWN STREAM PIPE DIAMETERS STRAIGHT PIPE.
 - DELETED
 - RESTRICTION DRIFICE TO BE ?
 - SPACE HEATER
 - "Y" CONNECTION
 - OUT-OF-SPEC 3-WAY VALVE
 - PIPE ENTERS D-915 THROUGH SLOT IN HINGED LID.

Y-916 LIFT TANK AGITATOR 316SS	D-915 LIFT TANK 316SS 1,000 GAL.	G-912 DIAPHRAGM PUMP 20 GPM TEFLON LINED	D-910 4'0" DEEP LIFT STATION CONCRETE VAULT	G-920A/B LIFT PUMPS 316SS 20 GPM 40 FT HEAD 1.5 HP MOTOR	C-930/931 COLLECTION TANKS TITANIUM 12,000 GAL MAWP:15PSIG	G-926A/B VERTICAL SUMP PUMP 316SS/CD4M 20 GPM 40 FT HEAD 1.5 HP MOTOR	D-925 SUMP CONCRETE 4'X6'X4'	G-935A/B LEACHATE TRANSFER CD4M 110 GPM 60 FT HEAD 5 HP MOTOR	C-940 BREAK TANK G-945A/B CITY WATER PUMPS SEE DWG 1528654-90C	K-937 AIR COMPRESSOR 100 SCFM @ 100 PSIG
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DRAWN BY		ENGINEER	DATE	SCALE
			4-14-2015	
Bayer CropScience				
SAP NUMBER	UNIT SYMBOL	ZONE	AREA	
00000-000000	000000000000	00	0	
LEACHATE COLLECTION & STORAGE				
LEACHATE STORAGE				
INDEX NUMBER	SUBJECT	(4) DWG. NO.	REV	
		1528654-90B		



C-608
LEACHATE STORAGE TANK
(EXISTING)

- NOTES:
1. ALL PIPING INSIDE OF CONTAINMENT AREAS TO BE TITANIUM
 2. ALL PIPING OUTSIDE CONTAINMENT AREA TO BE DOUBLE CONTAINED HDPE HT & INSULATED
 3. FUTURE ISOLATION
 4. LOCATE FLUSH CONNECTIONS EVERY 100 FT
 5. SIGHT GLASS
 6. DOUBLE CONTAINMENT PIPING PENETRATES INTO MANHOLE.

DRAWN BY	CHECKED BY	ENGINEER	DATE	SCALE
			4-14-2015	
Bayer CropScience				
SAP NUMBER	UNIT SYMBOL	ZONE	AREA	
00000-000000	000000000000	DD	0	
LEACHATE COLLECTION & STORAGE				
LEACHATE COLLECTION				
INDEX NUMBER		(4) DWG. NO.		REV
LOCATION	SITE	SUBJECT	1528654-90A	

ATTACHMENT C
Process Description

ATTACHMENT C

PROCESS DESCRIPTION

Bayer CropScience proposes to install a new Leachate Collection and Tank Truck Loading Facility at the Goff Mountain Landfill to replace the existing Leachate Collection Tank 608 (D-101) and the existing tank truck loading rack. Leachate will be transported via tank trucks to waste treatment facility which is approved for RCRA waste water treatment.

The Goff Mountain Landfill, owned and operated by Bayer CropScience is located at the intersection of Goff Mountain Road and US Route 25, which is north of Bayer's Institute Site. The Landfill collects hazardous waste biological sludge from the Institute Site's Waste Water Treatment Unit (WWTU).

PRESENT OPERATION

The Goff Mountain Landfill drains the leachate from eight (8) closed waste covered areas (Lifts) and one (1) open active lift through a 68-inch HDPE pipe to the northeast side of the open top Leachate Tank 608 (D-101). This tank has a 70-foot diameter and a capacity of 420,000 gallons. The leachate flow varies from 0.5 gallons per minute (gpm) during dry periods up to 200+ gpm during rainy periods. The Goff Mountain Landfill is scheduled to be closed during 2015, following a scheduled cleaning and inspection of the Leachate Tank 608.

At the present time, leachate is batch pumped through a 6-inch HDPE pipe that runs under Route 25, and continues underground to the West Process Sewer Sump located on the south side of the Institute Site.

ATTACHMENT C

NEW LEACHATE COLLECTION AND LOADING FACILITY

New Leachate Tanks and New Loading Facility

The new leachate tanks and new loading rack will be designed and operated to meet RCRA requirements for handling hazardous waste and to meet the WV DEP air regulations.

The facility design includes:

1. Leak detection of pipe and sumps
2. Overflow prevention of the tanks and tank trucks, using redundant level instruments
3. Containment of the tanks and tank trucks, using dikes.
4. Instrumentation with continuous monitoring and alarms will provide the operator of the facility with immediate information to operate the facility in a safe manner and without any environmental excursion.
5. The leachate flow of 20 gpm to the new tanks (once the GML is closed) will not exceed the tank vent rate of two (2) pounds per hour (pph) of HAPs. A "closed loop" vent line will eliminate VOC emissions during the tank truck filling operation.

Leachate Drain Pipe to New Tanks

A new 10 inch double wall HDPE pipe will connect to the existing manhole at the bottom of the Goff Mountain Landfill. The existing 24" HDPE pipe from the manhole presently connects the manhole to the existing Tank 608. The new 10 inch pipe will run south, underground to the parking lot south of the existing Leachate Tank 608. The 10" pipe will have leak detection at the low point before it connects to the new Leachate "Lift" Tank D-915.

Strainer

A strainer will be installed inside the "Lift" Tank D-915. The strainer will hang inside the tank to collect any large debris carried with the leachate flow.

ATTACHMENT C

Collection Tanks

The new leachate system consists of a smaller (1000 gal) collection "LIFT" tank D-928 with 2 "Lift" pumps to pump to the two larger leachate collection tanks D-930 and D-931 (12,000 gals each) with 2 transfer pumps to transfer leachate to tank trucks at the new loading rack.

Containment Dike, Lift Tank and Sumps

A new building will be constructed to house the new collection lift tank, new leachate tanks and pumps that include a concrete containment dike. A concrete sump (9 feet x 9 feet x 4 feet deep) will be located inside the containment diked area. The sump allows the D-928 titanium "Lift" tank (5 feet diameter x 7 feet high) to be installed inside it, at a lower elevation so that the 7-foot tall tank can be filled by gravity flow from the manhole at the bottom of the landfill. A smaller sump (4 feet x 4 feet x 4 feet) will collect any leaks from pipe, pumps and tanks and a sump pump will pump out the sump to the C-930 and C-931 Leachate Collection Tanks.

VOC EMISSIONS

The design flow rate from the Goff Mountain Landfill is one (1) gpm. This results in a vent rate of 0.13 scfm from the vent on the D-100 Leachate "Lift" tank. Leachate is pumped at a rate of 20 gpm from the "Lift" Tank to one of the larger collection tanks C-930 A or C-931 which results in a vent rate of 2.6 scfm from the open vent on one the Leachate collection tanks. The design flow rate to the "lift" tank is 1 gpm for 24 hours and 365 days per year. The leachate transfer to one of the Leachate tanks C-930 or C-931 is 20 gpm for 12 minutes every 4 hours, 6 times in 24 hours for a total transfer time of 72 minutes. A recycle vent line will connect the vent on a tank truck to the two Leachate tanks, so that there will be no venting to the atmosphere during the filling of a tank truck.

The analysis of samples from tank vapor space taken on January 7, 2015, January 29, 2015 and March 3, 2015 are used to calculate the HAPs and VOCs being emitted from the Leachate Tanks. This calculation assumes that detected chemicals will be emitted from the 60 gal per hour Leachate flow that enters the "LIFT" Tank and then to the Leachate collection tanks, resulting in the 156 SCFH

ATTACHMENT C

vented through the tanks vent units to the atmosphere. This is a highly conservative calculation, since some of the chemicals are "high boilers" with very low vapor pressures.

See the attached list of chemicals of vapor phase in the leachate sample.

See the attached Calculation.

LOADING RACK

The tank truck loading area will be covered with a shelter to prevent rain water from entering the containment berm around the loading rack and tank truck. The containment area will drain to the sump inside the building, so that any leaks can be recovered and pump to the collection tanks.

CONTROLS

Instrumentation with continuous monitoring and alarms will provide the operator of the facility with immediate information to operate the facility in a safe manner and without an environmental excursion.

CLOSE-OUT PLAN FOR GOFF MOUNTAIN LANDFILL

The present plan is to close out the last (9th) lift in 2015 and to stop draining the leachate to the West Sump. Leachate will be collected and transferred to tankers and sent to a RCRA waste treatment facility. The existing loading rack will be used temporarily (6 to 12 months) while 2 new leachate storage tanks and a new loading rack are installed south of the existing Leachate Tank 608 (D-101). The existing Leachate Tank 608 and loading rack will be demolished once the new collection tanks and loading rack are completed and put in service.

ATTACHMENT E
Emission Calculations

ATTACHMENT E

Bayer CropScience

Goff Mountain Landfill Leachate

Air Emissions

HAP	mg/m3	
Toluene	20	(1/29/15 analysis)
Bis(2-ethylhexyl)phathlate	0.16	(from F039 analysis)
Chlorobenzene	33	(1/7/15 analysis)
Dichloromethane	10	(1/29/15 analysis)
Naphthalene	15	(1/29/15 analysis)
Total HAPs	78.16	

Worst case VOC concentrations from 3 samples.		
Total compounds (VOCs) =	182.6	mg/m3

Max Design flow from atmospheric vent = 156.0 scfh (2.6 scfm)

TOTAL HAP'S

78.16 mg/m3 x 156 ft3/hr x m3/35.31467 ft3 x lb/453592.4 mg =	0.000765	lb/hr Total HAPs
0.000765 lb/hr x 8760 hr/yr x ton/2000 lb =	0.00335	tpy Total HAPs

TOTAL VOC'S

182.6 mg/m3 x 156 ft3/hr =	0.00179	lb/hr VOC
0.00174 lb/hr =	0.00783	tpy VOC

Attachment E

Vapor Analyses Summary

Compound	CAS	Date	1/29/2015
		HAP ?	Maximum Conc (mg/m3)
Naphthalene	91-20-3	Y	15
Chlorobenzene	108-90-7	Y	33
Toluene	108-88-3	Y	20
1,2,3,4-tetrahydronaphthalene			3.2
1-butyltolylbenzene			2.4
Acetone	67-64-1		15
Dichloromethane	75-09-2	Y	10
Ethyl Acetate	141-78-6		19
Butylhexylbenzene			3
Propylheptylbenzene			2
Ethyltolylbenzene			3
Methylnonylbenzene			4
Mercaptoacetic acid, bis (TMS)			3
Phenylhexylbenzene			3
Butylheptylbenzene			5
Propyltolylbenzene			5
Dimethylsulfide			13
Dimethyldisulfide			24

Maximum VOCs = total max concentration for all 3 samples	182.6	mg/m3
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