Landfill Cap and Gas Vent Repair for the Town of Olive

Prepared for:
Ms. Sylvia B. Rozzelle
Supervisor
Town of Olive
P.O. Box 96
West Shokan, New York 12494

October 7, 2014

Prepared By:
Clark Patterson Lee
103 Executive Drive, Suite 202
New Windsor, NY 12553
Tel: 800/274/9000
Fax: 845/567/9614

Clark Patterson Lee
DESIGN PROFESSIONALS

October 7, 2014

Ms. Sylvia B. Rozzelle, Town Supervisor
Town of Olive
P.O. Box 96
West Shokan, New York 12494

RE: Town of Olive Landfill report

Dear Ms. Rozzelle:

The following letter is to summarize recent repair efforts to the landfill cap system performed by the Town of Olive Highway Department. As previously reported, historic heavy rain events were suspected in creating an approximate 1 acre sized slumped area on the west face of the landfill cap system as well as damaging 3 gas vent risers.

The slumped area appeared to have consisted of the topsoil layer sliding along the interface of the barrier protection layer. Two erosional scours developed along the northerly and southerly slump boundary. A third smaller area was repaired along the top of the northerly face, per the attached plan. Global positioning system (GPS) surveying was used to locate the approximate as-built features of the construction activities.

The Town of Olive Highway Department commenced the cap and gas vent repairs on September 8, 2014 through September 18, 2014. Special equipment was rented, so as to minimize and prevent further damage to the landfill cap system. The repair efforts consisted of removing the topsoil layer adjacent to the eroded areas; placement and compaction of additional barrier protection layer fill material in the channelized void space; replacement of topsoil over the compacted barrier protection layer material along with a vegetative stabilization mat; seed, mulch and stone check dams. Construction observation was performed by Clark Patterson Lee personnel, see attached daily construction reports.

Special care was taken not to damage existing vegetative cover or compact the surface of the landfill. The following wide rubber track equipment was used during the cap repair activities: JCB 8045 wide track mini track hoe (used for stripping/stockpiling topsoil and exposing the gas vents), IHI IC100 Crawler Dumper (used to haul fill material), Takeuchi TL10 Compact Track Loader (used to spread material) and a Massey Ferguson rubber tired front end loader with backhoe (used off landfill cap to load material on IHI IC100 Crawler Dumper).

103 Executive Drive
Suite 202
New Windsor, NY 12553
clarkpatterson.com
800.274.9000 TEL
845.567.9614 FAX

The following description was used to repair all three (3) 6" PVC gas vent pipes. The topsoil was removed from the surface and stockpiled in a neat mound. Next the barrier protection layer was excavated and piled in an orderly row. Then the clay layer was carefully removed at the riser connection point and separated from the other spoils. The geo textile filter fabric was then exposed. Care was taken to not disturb the garbage underneath the geo textile filter fabric. Next, the top of the 6" x 4" tee was carefully uncovered. A Fernco rubber gasket coupling was used to connect the top of the 6" x 4" tee to the 6" PVC gas riser pipe. The clay layer was placed back in the excavation and compacted with a jumping jack tamper. All soil layers were returned to the excavated space in reverse order as they were removed. All layers were compacted in lifts. All layer depths were returned to original thickness.

In addition to repair of the gas vents, three erosional scours were repaired as previously indicated. The JCB 8045 wide track mini track hoe stripped and stockpiled topsoil. Next the barrier protection soil was transported by the wide track IHI IC100 Crawler Dumper. Then the Takeuchi TL10 Compact Track Loader spread the barrier protection soil. Topsoil was returned to the original surface elevation. Grass seed was then applied. Next a green plastic mesh twelve (12) feet wide (Turf Reinforcement Erosion Control Solution) manufactured by East Coast Erosion, Bernville Pennsylvania, was laid down and fastened with staples to the ground. Straw mat was also used to cover additional areas for erosion control stabilization. All scours and areas of disturbance received these erosion control methods. Grass seed sprouts were visible on Sept 18, 2014.

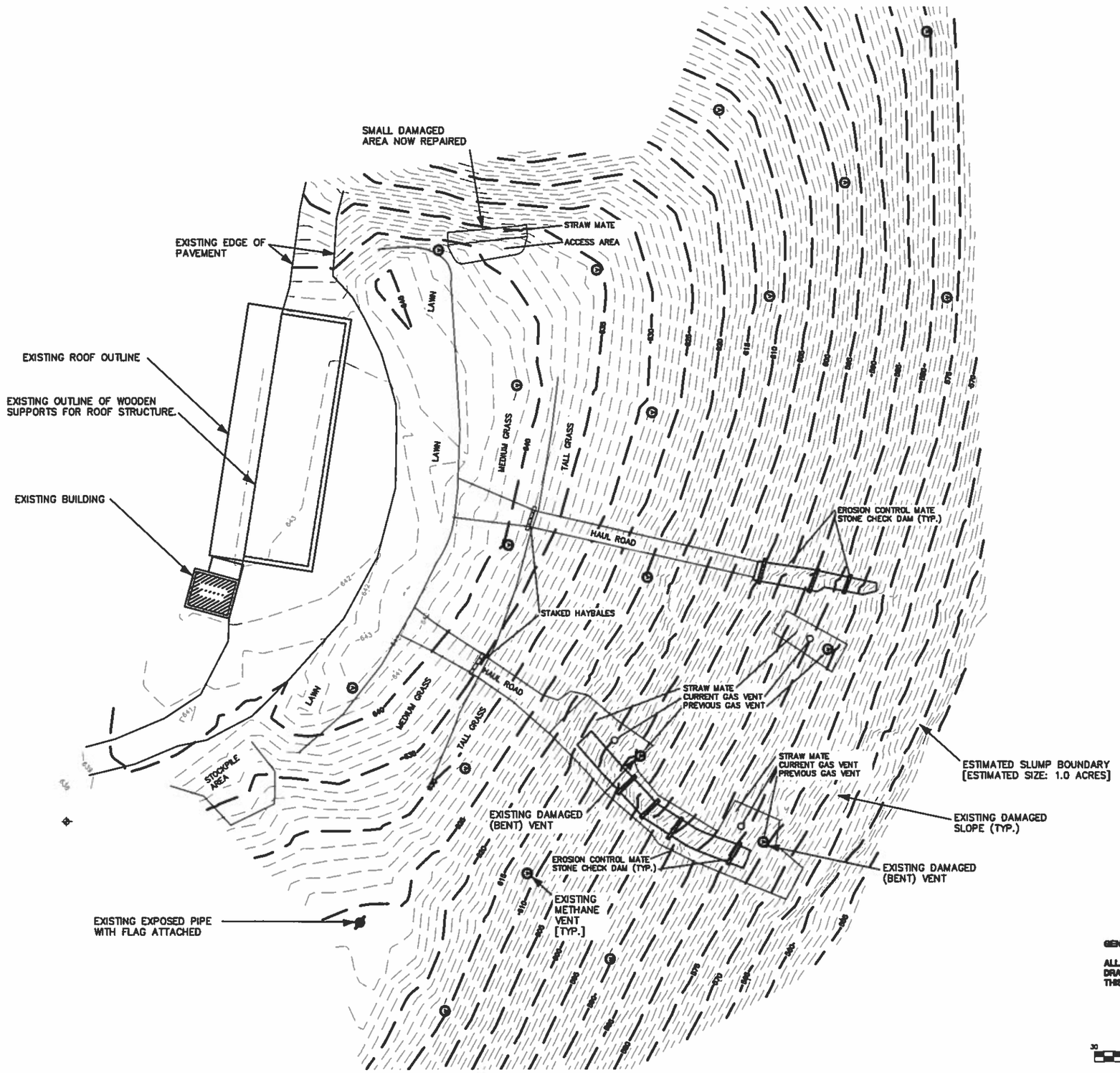
In summary, the worst of the damage to the landfill cap topsoil layer and barrier protection layer was repaired. In all cases, the depth of the erosion did not advance through the barrier protection layer to expose the clay liner. All repair methods and materials used were consistent with the original approved landfill cap system. Other smaller slumped areas are noted and require monitoring over time.

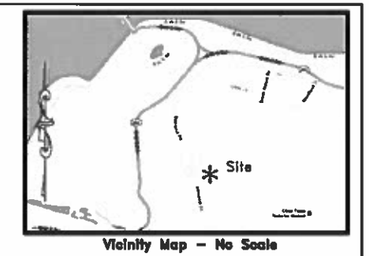
If you have any questions or require additional information regarding this construction activity, please do not hesitate to contact me.

Sincerely,
CLARK PATTERSON LEE

Timothy J. Moot, C.P.G.
Principal

Attachments





Vicinity Map – No Scale

GENERAL NOTE:

ALL CAP REPAIR RECORD DRAWING FEATURES SHOWN ON THIS PLAN ARE APPROXIMATE.

SCALE: 1"= 30'

811 Know what's below. Call before you dig.

CLARK PATTERSON LEE
DESIGN PROFESSIONALS
900 CORPORATE BOULEVARD
NEWBURGH, NEW YORK 12550
TEL (845) 274-9000
FAX (845) 567-0914
www.clarkpatterson.com

REVISIONS			
NO.	DATE	BY	CHKD	DESCRIPTION

CAP REPAIRS AREAS OF LAND
TOWN OF OLIVE LANDFILL

TOWN OF OLIVE, ULSTER COUNTY, NEW YORK

DATE	DRAWN	CHECKED
10/1/14	DCV	GC

SCALE: 1" = 30'

SHEET TITLE
Portion of the Lands of Town of Olive Landfill

PROJECT NUMBER
11255.00

1 of 1
DRAWING NUMBER

Drawing Name: G:\PROJECTS\Town of Olive\ACAD\SITE PLAN\SURVEY_2014-09-18.dwg Date last accessed: 10/7/2014 2:05 PM Date last plotted: 10/7/2014 2:08 PM Plotted By: David Vogel

Clark Patterson Lee
DESIGN PROFESSIONALS

103 Executive Drive Suite, 202 New Windsor 12553 NEW YORK 12550, 845-567-6700

ENGINEERS DAILY CONSTRUCTION REPORT

9/8 2014	JOB NO. 11255.02	CONTRACTORS FORCES & EQUIPMENT IN USE					
Project Town of Olive Land Fill		NO.	EQUIPMENT TYPE	HRS.	NO.	MANPOWER	HRS.
Location Beaverkill Rd. Town of Olive			IHI ic100			Track Dump with operator	
Contractor T/O Olive Highway Department			Massey Ferguson Backhoe			Operator/Laborer	
Weather	Temp At Sunny 60 AM ° Sunny 75 PM °		Takeunchi T10 (bobcat)			Front end track loader with operator	
Superintendent James Fugel			Hand tools			Operator	
Hours Worked 8	Owner T/O Olive						

WORK PERFORMED: Site safety meeting prior to start of work item mentioned; possibility of methane gas explosive limit 5-15% in air, hydrogen sulfide, caution around machinery, slips trips and falls.

Pulled tie distances to find broken vent pipe. Flagged one erosion depression 80 linear feet and one erosion depression 208 linear feet. These areas of erosion were weed wacked for ease of work.

The 80 linear foot erosion depression was excavated approximately 1 foot. Barrier protection soil was delivered to this area with the track dump; this minimized the compaction of the top vegetated layer. T rex green mesh was placed on top of this. Finished cover is 80' long x 12' wide.

Three broken gas vent pipes were excavated to a depth of 5.5' to 6'. Each gas vent on the surface slide horizontally downhill approximately 12' from the 6"x6"x4"x4" cross tee. The cross tee was found below the filter fabric in the crushed stone layer.

At the bottom of each gas vent pipe repair (-6'± from ground surface) a Fern co rubber coupling will be used to connect the new 6" PCV SCH 80 vertical gas vent pipe to the top of the existing cross tee. Crushed stone will be placed around the fern co coupling to secure the connection. Next geo textile will be placed. Next the clay that came out will go back in and be compacted. Next plastic sheeting will be placed, followed by the barrier protection layer soil, then the topsoil, and finally topsoil with Trex green erosion control mesh.

All gas vents and erosion was located with Global positioning system.

Please see photos attached.

SIGNED: _____
Superintendent or Foreman

SIGNED: Tim Moot & David Vogel
Resident Engineer of Field Representative

JCB
2014. 9. 8 9:40

2014. 9. 8 10:09

TL10
TAKEUCHI
2014. 9. 8 10:07

2014. 9. 8 10:42

2014. 9. 8 10:56

Turf Reinforcement Erosion Control Solution®
PERMANENT HP TRM
patented product.
ROLL SIZE: 12'X70'
93.3sqyd
T-RECS
TECHNOLOGY
TURF REINFORCEMENT EROSION CONTROL SOLUTION
EAST COAST
erosion blankets
WWW.EASTCOASTEROSION.COM
443 Bricker Road • Bernville, PA 19506 • +1 610.488.8496
2014. 9. 8 11:58

2014. 9 8 12:03

2014 9 8 12:21

2014. 9. 8 13:54

2014. 9. 8 14:21

Clark Patterson Lee
DESIGN PROFESSIONALS

103 Executive Drive Suite, 202 New Windsor 12553 NEW YORK 12550, 845-567-6700

ENGINEERS DAILY CONSTRUCTION REPORT

Page No.: 1

9/9 2014	JOB NO. 11255.02	CONTRACTORS FORCES & EQUIPMENT IN USE					
Project Town of Olive Land Fill		NO.	EQUIPMENT TYPE	HRS.	NO.	MANPOWER	HRS.
Location Beaverkill Rd. Town of Olive			IHI ic100			Track Dump with operator	
Contractor T/O Olive Highway Department			Massey Ferguson Backhoe			Operator/Laborer	
Weather	Temp At Sunny 60 AM ° Partly Sunny75 PM °		Takeunchi T10 (bobcat)			Front end track loader with operator	
Superintendent James Fugel			Hand tools			Operator	
Hours Worked 8	Owner T/O Olive						

WORK PERFORMED: Site safety meeting prior to start of work item mentioned; possibility of methane gas explosive limit 5-15% in air, hydrogen sulfide, caution around machinery, slips trips and falls.

Topsoil was removed from the lower 1/3 of the longest erosion trench, farthest south.

Yesterday three (3) broken gas vents cross tees in a north south direction were exposed 6'± below grade. Work stated on the middle broken gas vent pipe that was exposed yesterday. Both the gas vent pipe and cross tee were cleaned free from dirt and debris. Then the (7" x 6" reducer) fern co coupling was attached to the top of the cross tee and then bottom gas vent riser. A steel fence post was driven into the ground adjacent to the cross tee. The vertical gas riser and the metal fence post were attached with rope. The rope was then covered in duct tape. This was done to stabilize the 6" vertical gas vent pipe during soil placement.

The bottom of excavation was compacted with track hoe bucket. Next the clay that came out went back in and was compacted in lifts. A jumping jack tamper was used for maximum compaction. Next plastic sheeting was placed, followed by the barrier protection layer which was also compacted in lifts. The plastic 6 mil polyethylene sheeting was slit and duct taped to the 6" vertical gas vent pipe. Barrier protection soil was spread with the small track skid steer front end loader, which also compacted the soil.

Please see photos attached.

SIGNED: _____
Superintendent or Foreman

SIGNED: David Vogel
Resident Engineer of Field Representative

JCB
2014. 9. 9 9:08

2014. 9. 9 9:38

2014. 9. 9 10:19

2014. 9. 9 10:34

2014 9 9 12 14

2014. 9. 9 12:16

2014 9. 9 . 12 17

2014. 9. 9 12:18

2014. 9. 9 12:25

60132
POLY-COVER
6X8-C
CLEAR
6 MIL X 8FT X 100FT
NET WEIGHT 23.0 LB
(2.6 YD X 33.3 YD)(800 SQ FT)
(152um x 2.4m x 30.4m)(74.3 sq m)(10.4 kg)
POLYETHYLENE SHEETING
COMPLIES WITH ASTM
D-4397 & PS-17-69
WARP BROS.
CHICAGO, IL 60651
2014. 9. 9 12:58

2014. 9 9 13:14

2014. 9. 9 13:17

2014. 9. 9 13:19

TL10
JCB
2014. 9. 9 13:54

Clark Patterson Lee
DESIGN PROFESSIONALS

103 Executive Drive Suite, 202 New Windsor 12553 NEW YORK 12550, 845-567-6700

ENGINEERS DAILY CONSTRUCTION REPORT

Page No.: 1

9/10 2014	JOB NO. 11255.02	CONTRACTORS FORCES & EQUIPMENT IN USE					
Project Town of Olive Land Fill		NO.	EQUIPMENT TYPE	HRS.	NO.	MANPOWER	HRS.
Location Beaverkill Rd. Town of Olive			IHI ic100			Track Dump with operator	
Contractor T/O Olive Highway Department			Massey Ferguson Backhoe			Operator/Laborer	
Weather	Temp At Sunny 60 AM ° Partly Sunny75 PM °		Takeunchi T10 (bobcat)			Front end track loader with operator	
Superintendent James Fugel			Hand tools			Operator	
Hours Worked 8	Owner T/O Olive						

WORK PERFORMED: Site safety meeting prior to start of work item mentioned; possibility of methane gas explosive limit 5-15% in air, hydrogen sulfide, caution around machinery, slips trips and falls.

Topsoil was begun to be spread on the northern most scour. The topsoil was spread to approximately 12 feet in width with a small track front end loader (bobcat).

The remaining two broken gas vents cross tees were repaired.

The gas vent pipe and cross tee were cleaned free from dirt and debris. Then the (7" x 6" reducer) fern co coupling was attached to the top of the cross tee and then bottom gas vent riser. A steel fence post was driven into the ground adjacent to the cross tee. The vertical gas riser and the metal fence post were attached with rope. The rope was then covered in duct tape. This was done to stabilize the 6" vertical gas vent pipe during soil placement.

The clay layer was placed back in the excavation and compacted in lifts. The clay was returned to the original elevation as seen on the side of the excavation. Plastic was placed on top of the gray clay.

Please see photos attached.

SIGNED: _____
Superintendent or Foreman

SIGNED: David Vogel
Resident Engineer of Field Representative

2014. 9. 10. 8:51

2014. 9. 10. 8:59

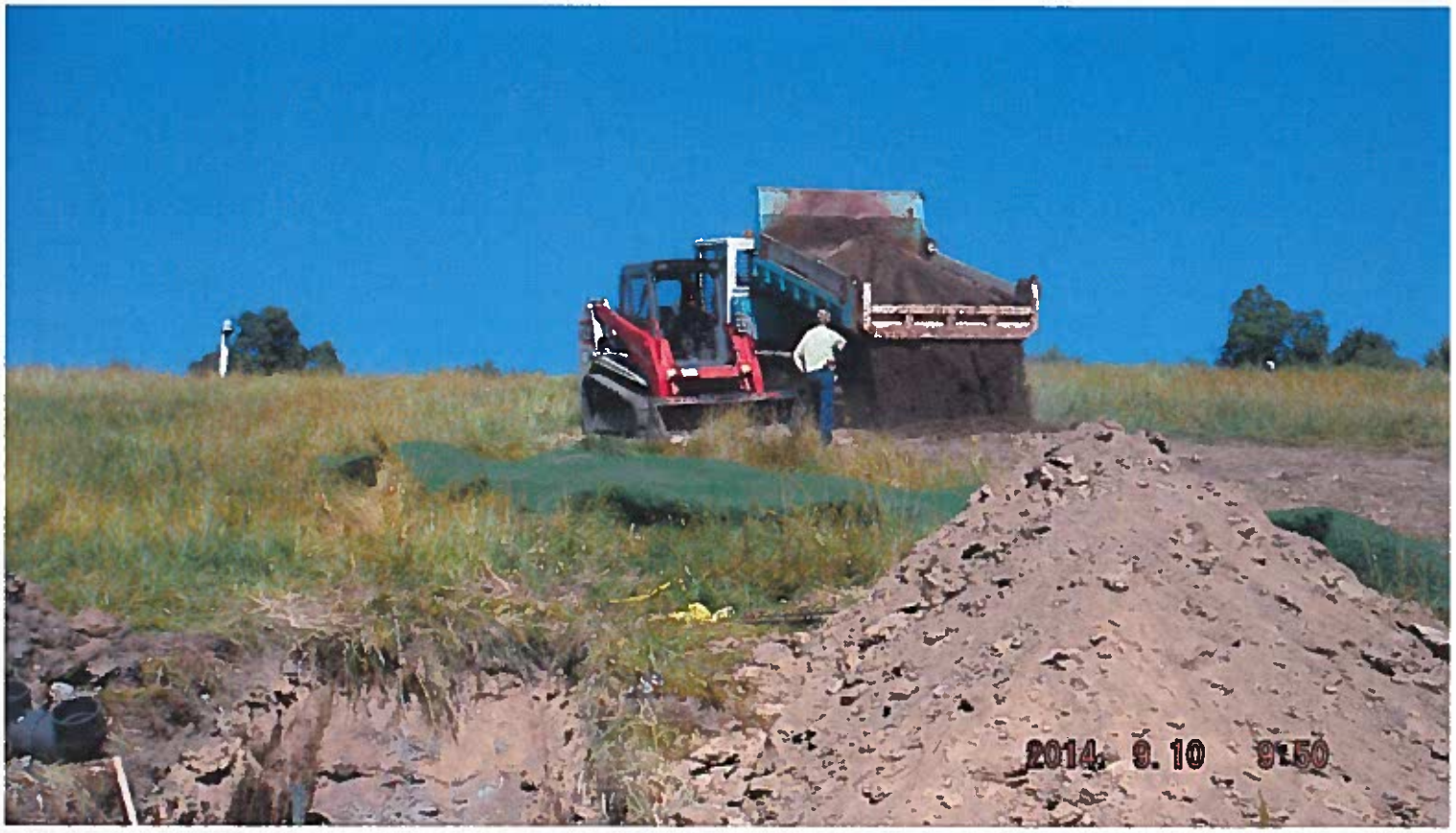
2014. 9. 10 9:05

2014. 9. 10 9:05

POLY-COYD
2014 9 10 9 10

2014 9 10 9 12

2014 9 10 9:25


2014. 9. 10 9:50

TAKEUCHI
2014 9 10 9 52

2014 9 10 10:12

2014 9 10 10:29

2014. 9. 10 10:30

2014. 9. 10 10:50

2014. 9. 10 11:17

2014. 9. 10 11:33

Clark Patterson Lee
DESIGN PROFESSIONALS

103 Executive Drive Suite, 202 New Windsor 12553 NEW YORK 12550, 845-567-6700

ENGINEERS DAILY CONSTRUCTION REPORT

Page No.: 1

9/18 2014	JOB NO. 11255.02	CONTRACTORS FORCES & EQUIPMENT IN USE					
Project Town of Olive Land Fill		NO.	EQUIPMENT TYPE	HRS.	NO.	MANPOWER	HRS.
Location Beaverkill Rd. Town of Olive							
Contractor T/O Olive Highway Department							
Weather	**Temp** At Sunny 60 AM ° Partly Sunny75 PM °						
Superintendent							
Hours Worked 8	**Owner** T/O Olive						

WORK PERFORMED: Site survey using a Global Poisoning System.

Please see photos attached.

SIGNED: _____
Superintendent or Foreman

SIGNED: David Vogel
Resident Engineer of Field Representative

2014 9 18 12:1

2014 9 18 12:1

2014. 9. 18 12:3

2014. 9. 18 13:0

2014. 9. 18 16:

2014. 9. 18 14:4