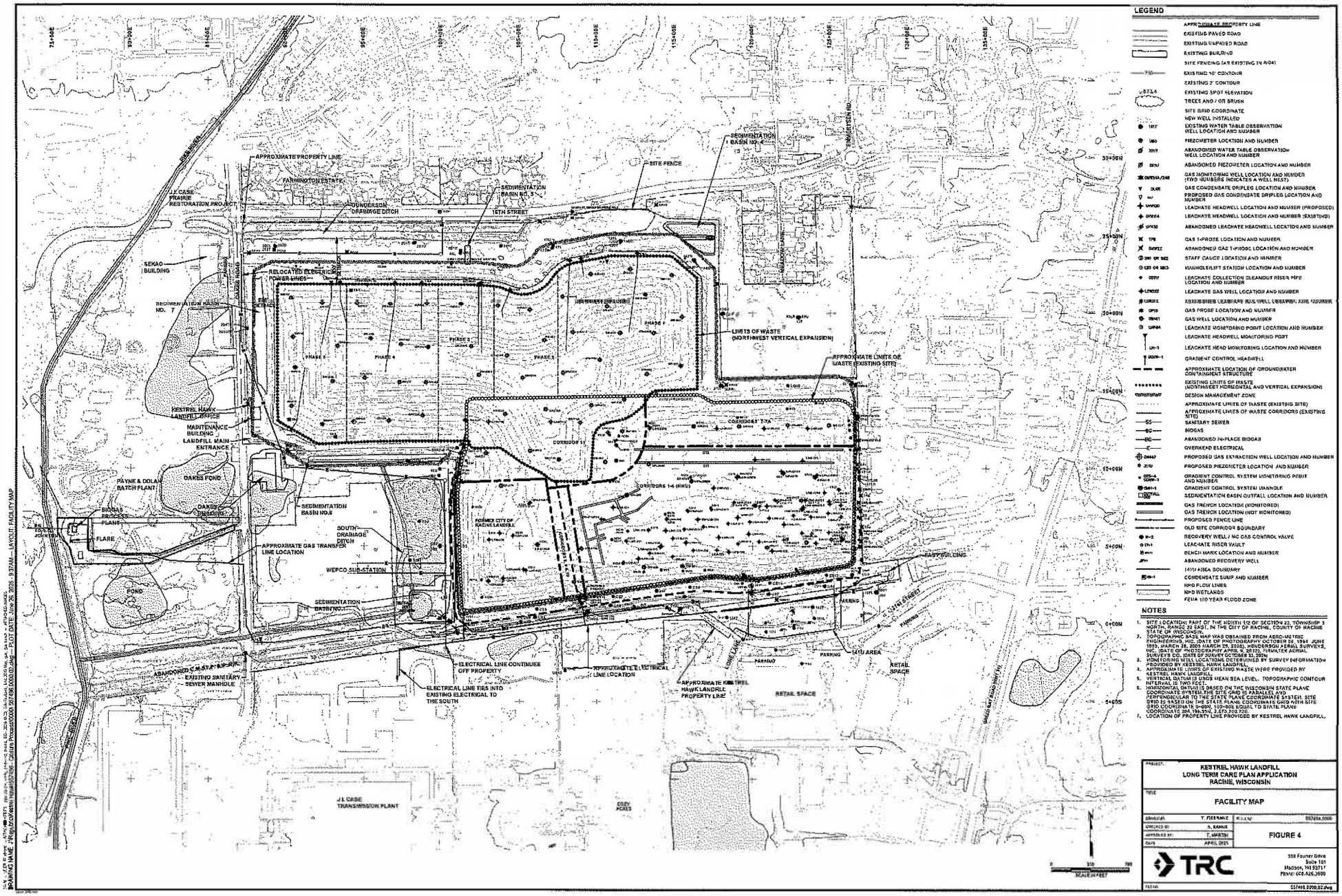


LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- SITE FENCING (AS EXISTING IN 2021)
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- SITE GRID COORDINATE
- NEW WELL INSTALLED
- EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- PIEZOMETER LOCATION AND NUMBER
- ABANDONED WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- ABANDONED PIEZOMETER LOCATION AND NUMBER
- GAS MONITORING WELL LOCATION AND NUMBER (TWO NUMBERS INDICATES A WELL NEST)
- GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- PROPOSED GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- LEACHATE HEADWELL LOCATION AND NUMBER (PROPOSED)
- LEACHATE HEADWELL LOCATION AND NUMBER (EXISTING)
- ABANDONED LEACHATE HEADWELL LOCATION AND NUMBER
- GAS T-PROBE LOCATION AND NUMBER
- ABANDONED GAS T-PROBE LOCATION AND NUMBER
- STAFF GAUGE LOCATION AND NUMBER
- MANHOLE/LIFT STATION LOCATION AND NUMBER
- LEACHATE COLLECTION CLEANOUT RISER PIPE LOCATION AND NUMBER
- LEACHATE GAS VENT LOCATION AND NUMBER
- ABANDONED LEACHATE BUILDING LOCATION AND NUMBER
- GAS PROBE LOCATION AND NUMBER
- GAS WELL LOCATION AND NUMBER
- LEACHATE MONITORING POINT LOCATION AND NUMBER
- LEACHATE HEADWELL MONITORING POST
- LEACHATE HEAD MONITORING LOCATION AND NUMBER
- GRADIENT CONTROL HEADWELL
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
- EXISTING LIMITS OF WASTE (NORTHWEST HORIZONTAL AND VERTICAL EXPANSION)
- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SS — SANITARY SEWER
- BG — BIOGAS
- ABG — ABANDONED IN-PLACE BIOGAS
- E — OVERHEAD ELECTRICAL
- PROPOSED GAS EXTRACTION WELL LOCATION AND NUMBER
- PROPOSED PIEZOMETER LOCATION AND NUMBER
- GRADIENT CONTROL SYSTEM MONITORING POINT AND NUMBER
- GRADIENT CONTROL SYSTEM MANHOLE
- SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- GAS TRENCH LOCATION (MONITORED)
- GAS TRENCH LOCATION (NOT MONITORED)
- PROPOSED FENCE LINE
- OLD SITE CORRIDOR BOUNDARY
- RECOVERY WELL / MG GAS CONTROL VALVE
- LEACHATE RISER VAULT
- BENCH MARK LOCATION AND NUMBER
- ABANDONED RECOVERY WELL
- 141U AREA BOUNDARY
- CONDENSATE SUMP AND NUMBER
- NMD FLOW LINES
- NMD WETLANDS
- FEMA 100-YEAR FLOOD ZONE

NOTES

1. SITE LOCATION: PART OF THE NORTH 1/2 OF SECTION 22, TOWNSHIP 3 NORTH, RANGE 23 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 08, 1994, JUNE 1995, MARCH 8, 2003 MARCH 29, 2006), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), PERMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM. THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS BASED ON THE STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE (-600N, 100-60E EQUAL TO STATE PLANE COORDINATE 196,354.2, 2,673,700.70).
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.

PROJECT: KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

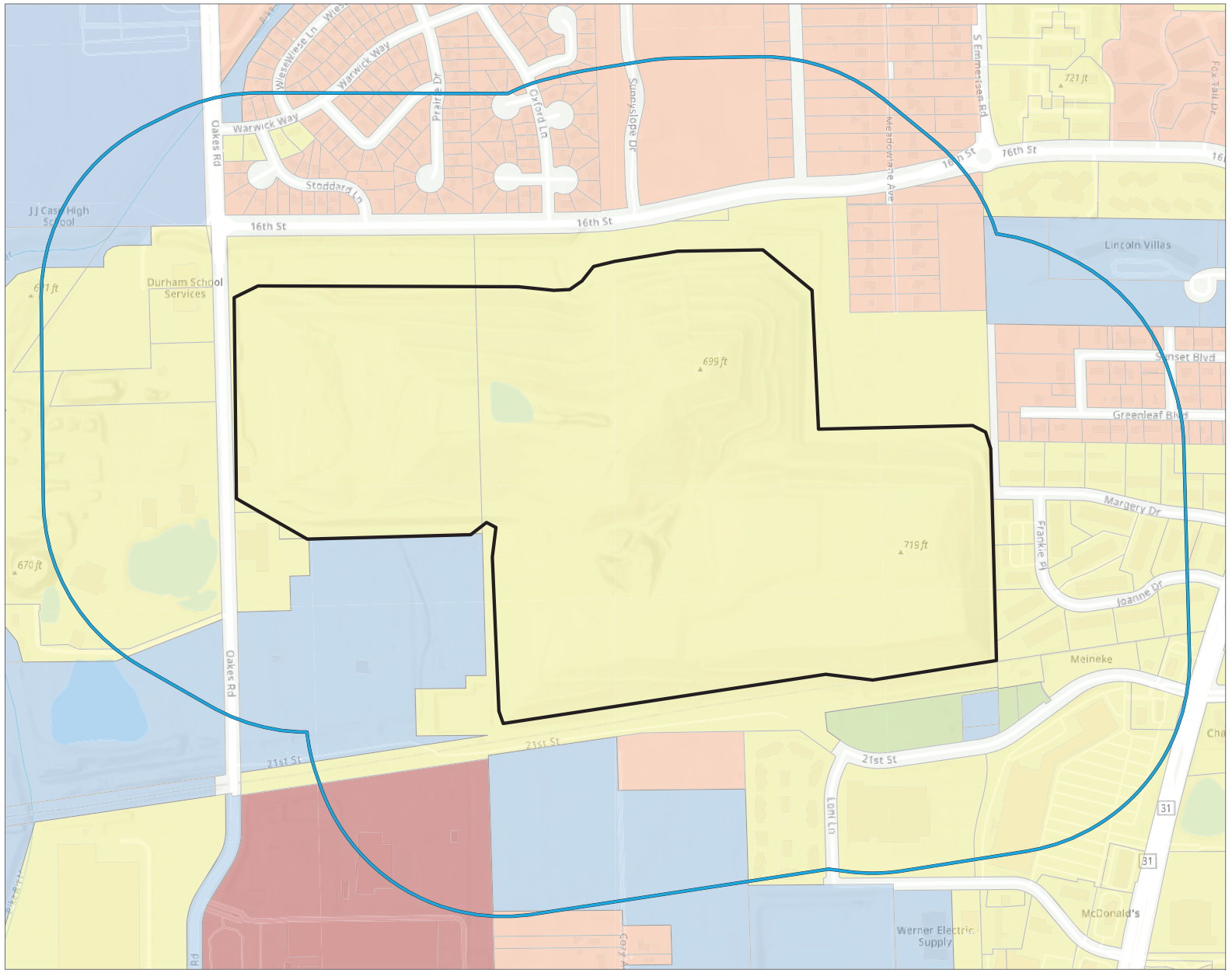
TITLE: FACILITY MAP

DRAWN BY:	T. FISHKANZ	FILE NO:	557458.0000
CHECKED BY:	S. RANUE	FIGURE 4	
APPROVED BY:	T. MARTIN		
DATE:	APRIL 2025		

TRC
550 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO: 557458.0000.02.dwg

DRAWING NAME: J:\Projects\Kestrel Hawk\557458 - 2024 LTCP Update\557458.0000.02.dwg - PLOT DATE: June 26, 2025 - 9:37AM - LAYOUT: FACILITY MAP



1,000 FT SITE BUFFER

LIMITS OF WASTE

Class of Property (DESCRIPTION)

1: RESIDENTIAL

2: COMMERCIAL

3: MANUFACTURING

Class of Property - Tax-Exempt or Special Classification (DESCRIPTION)

X3: COUNTY LAND

X4: OTHER EXEMPT LAND

NOTES:

BASE MAP: GOOGLE EARTH PRO IMAGERY, MAY 2023.
DATA SOURCE: TRC, WISCONSIN STATE CARTOGRAPHER'S OFFICE

1:6,000
1" = 500'
0 500 FEET

PROJECT:
KESTREL HAWK LANDFILL
LONG-TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE:
SURROUNDING LAND USE

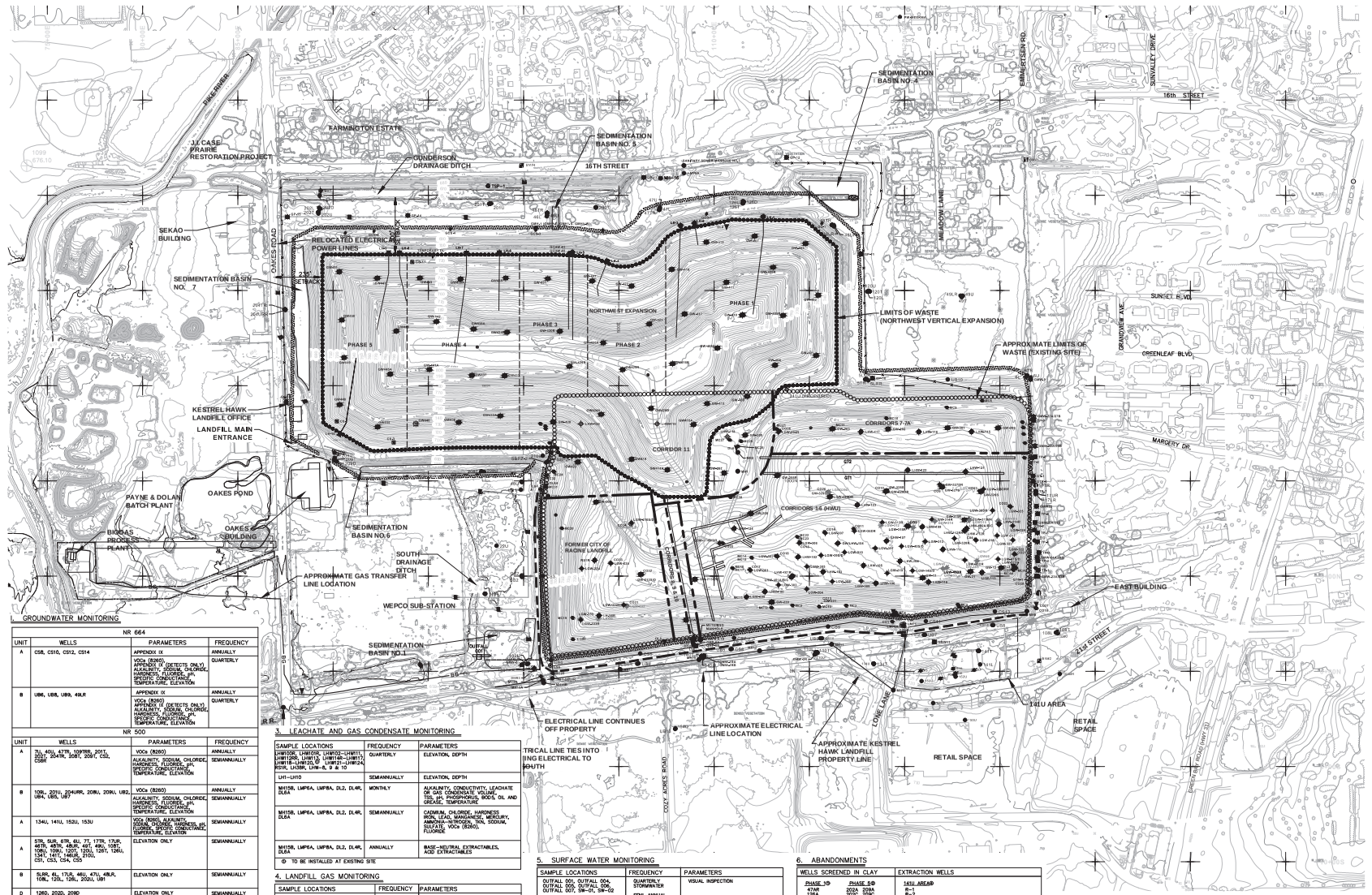
DRAWN BY:	A. FOJTIK	PROJ. NO.:	557469
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIT		
DATE:	JUNE 2025		

FIGURE 4A

TRC
999 FOURIER DRIVE
SUITE 101
MADISON, WI 53717
PHONE: 608.826.3663

FILE: 557469 KestrelHawkLF.aprx

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet Map Rotation: 0
Saved By: AFOJTIK on 6/25/2025, 16:46:25 PM File Path: T:\-PROJECTS\Republic\KestrelHawk\LF2-APRX\557469_KestrelHawkLF.aprx Layout Name: 557469_KestrelHawkLF_fig4



LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- SITE FENCING (AS EXISTING IN 6/04)
- 710 EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 873.4 EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- 310+000N SITE GRID COORDINATE
- 16T EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- U85 PIEZOMETER LOCATION AND NUMBER
- 205T ABANDONED WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- 205U ABANDONED PIEZOMETER LOCATION AND NUMBER
- GW24A/24B GAS MONITORING WELL LOCATION AND NUMBER (TWO NUMBERS INDICATES A WELL NEST)
- DL4R GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- DL2 PROPOSED GAS CONDENSATE DRIPLEG LOCATION AND NUMBER
- LHW20 LEACHATE HEADWELL LOCATION AND NUMBER (PROPOSED)
- LHW14 LEACHATE HEADWELL LOCATION AND NUMBER (EXISTING)
- LW38 ABANDONED LEACHATE HEADWELL LOCATION AND NUMBER
- TP9 GAS T-PROBE LOCATION AND NUMBER
- GMW22 ABANDONED GAS T-PROBE LOCATION AND NUMBER
- SW1 OR SG2 STAFF GAUGE LOCATION AND NUMBER
- LS5 OR MH3 MANHOLE/LIFT STATION LOCATION AND NUMBER
- CO7N LEACHATE COLLECTION CLEANOUT RISER PIPE LOCATION AND NUMBER
- LGW322 LEACHATE GAS WELL LOCATION AND NUMBER
- LGW31 ABANDONED LEACHATE GAS WELL LOCATION AND NUMBER
- GP10 GAS PROBE LOCATION AND NUMBER
- GW41 GAS WELL LOCATION AND NUMBER
- LMW8A LEACHATE MONITORING POINT LOCATION AND NUMBER
- LHW PORT LEACHATE HEADWELL MONITORING PORT
- LH-1 LEACHATE HEAD MONITORING LOCATION AND NUMBER
- GCHW-1 GRADIENT CONTROL HEADWELL
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
- PROPOSED LIMITS OF WASTE (NORTHWEST HORIZONTAL AND VERTICAL EXPANSION)
- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SS SANITARY SEWER
- BG BIOGAS
- BG ABANDONED IN-PLACE BIOGAS
- E OVERHEAD ELECTRICAL
- GW47 PROPOSED GAS EXTRACTION WELL LOCATION AND NUMBER
- 21U PROPOSED PIEZOMETER LOCATION AND NUMBER
- GCS-4 GCHW-1 GRADIENT CONTROL SYSTEM MONITORING POINT AND NUMBER
- GMH-1 GRADIENT CONTROL SYSTEM MANHOLE
- OUTFALL 002 SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- GAS TRENCH LOCATION (MONITORED)
- GAS TRENCH LOCATION (NOT MONITORED)
- PROPOSED FENCE LINE
- OLD SITE CORRIDOR BOUNDARY
- R-2 RECOVERY WELL / MC GAS CONTROL VALVE
- LH-1 LEACHATE RISER VAULT
- BM=0 BENCH MARK LOCATION AND NUMBER
- R-1 ABANDONED RECOVERY WELL
- CS-1 CONDENSATE SUMP AND NUMBER

NOTES

1. SITE LOCATION PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM ABRO METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 26, 1994, JUNE 1995, MARCH 28, 2005, MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM. THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS BASED ON THE STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE 0+00N, 10K+00E EQUAL TO STATE PLANE COORDINATE 264,136.93N, 2,373,700.72E.
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.
8. LOCATION OF PRIVATE RESIDENCE WELLS PROVIDED BY KESTREL HAWK LANDFILL.

1. GROUNDWATER MONITORING

UNIT	WELLS	PARAMETERS	FREQUENCY
NR 664			
A	C58, C510, C512, C514	APPENDIX IX	ANNUALLY
		VOCs (8260), APPENDIX IX (DETECTS ONLY), ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	QUARTERLY
B	U86, U88, U89, 49LR	APPENDIX IX	ANNUALLY
		VOCs (8260) APPENDIX IX (DETECTS ONLY), ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	QUARTERLY
NR 500			
UNIT	WELLS	PARAMETERS	FREQUENCY
A	7U, 40U, 47R, 109TRR, 201T, 202T, 204TR, 208T, 209T, C52, C588	VOCs (8260)	ANNUALLY
		ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
B	109L, 201U, 204URR, 208U, 209U, U82, U84, U85, U87	VOCs (8260)	ANNUALLY
		ALKALINITY, SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
A	134U, 141U, 152U, 153U	VOCs (8260), ALKALINITY, SODIUM, CHLORIDE, HARDNESS, IRON, FLUORIDE, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
A	57R, 5UR, 6TR, 6U, 7T, 17TR, 17UR, 46TR, 48TR, 48UR, 49T, 49U, 108T, 108U, 109U, 120T, 120U, 126T, 126U, 134T, 141T, 146UR, 210U, C57, C57D, C58, C59, C510	ELEVATION ONLY	SEMIANNUALLY
B	5LRR, 6L, 17LR, 46U, 47U, 48LR, 108L, 120L, 126L, 202U, U81	ELEVATION ONLY	SEMIANNUALLY
D	126D, 202D, 209D	ELEVATION ONLY	SEMIANNUALLY
SUBTITLE D			
UNIT	WELLS	PARAMETERS	FREQUENCY
B	49LR, 204URR, 208U, 209U	VOCs (8260)	SEMIANNUALLY
		VOCs (8260), SODIUM, CHLORIDE, HARDNESS, FLUORIDE, pH, SPECIFIC CONDUCTANCE, TEMPERATURE, ELEVATION	SEMIANNUALLY
NON-NR 140 COMPLIANCE WELLS			
UNIT	WELLS	PARAMETERS	FREQUENCY
A	C57, C59, C511, C513	SPECIFIC CONDUCTANCE, ELEVATION	QUARTERLY
	C59, C513	VOCs (8260)	ANNUALLY

2. GRADIENT CONTROL SYSTEM MONITORING

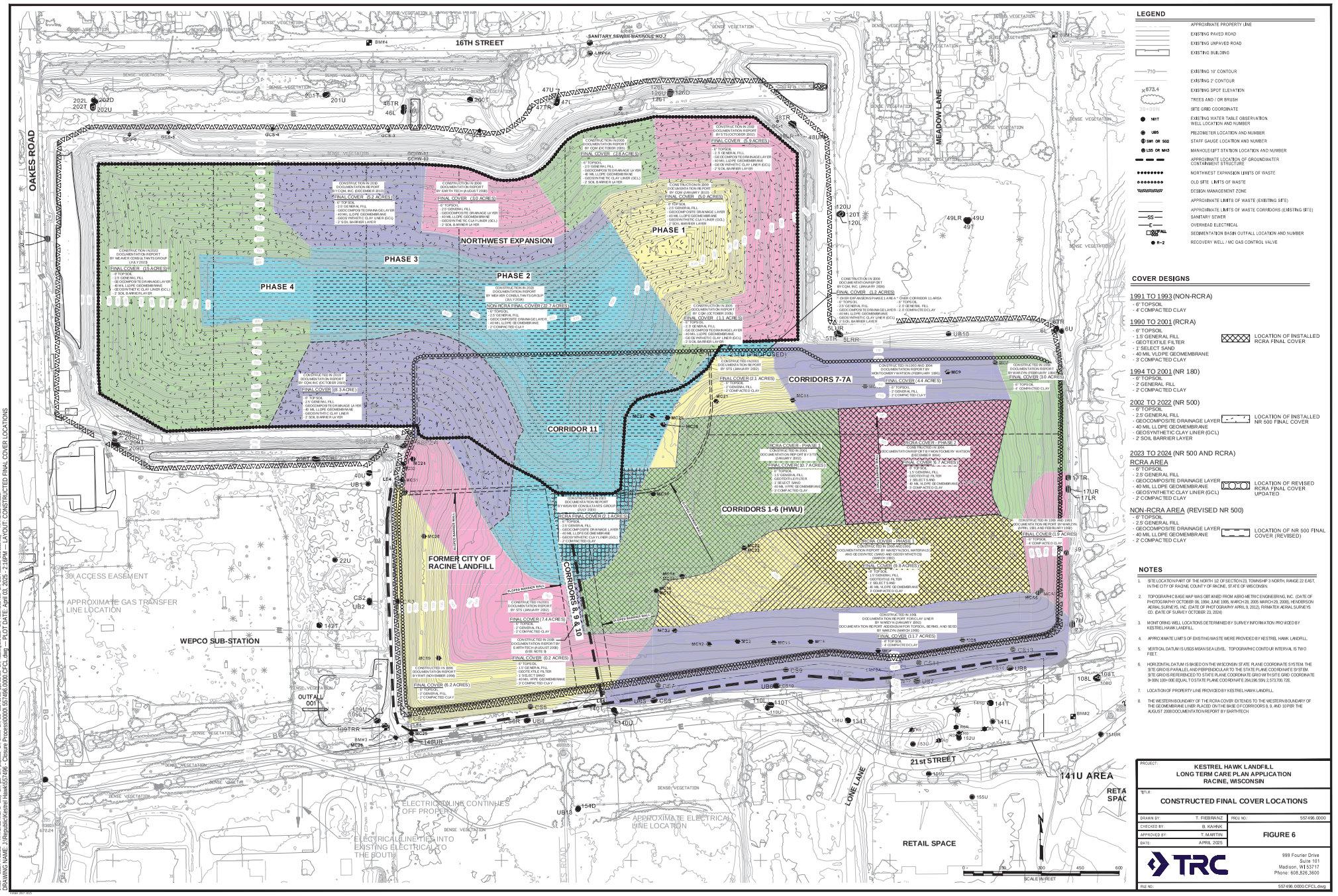
SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
GMH EAST, GMH SOUTH, GMH WEST	QUARTERLY	CONDUCTIVITY, TSS, pH, BOD5, TEMPERATURE
GMH-1	MONTHLY	VOLUME--PUMPED
GCHW-1, GCHW-2	MONTHLY	ELEVATION

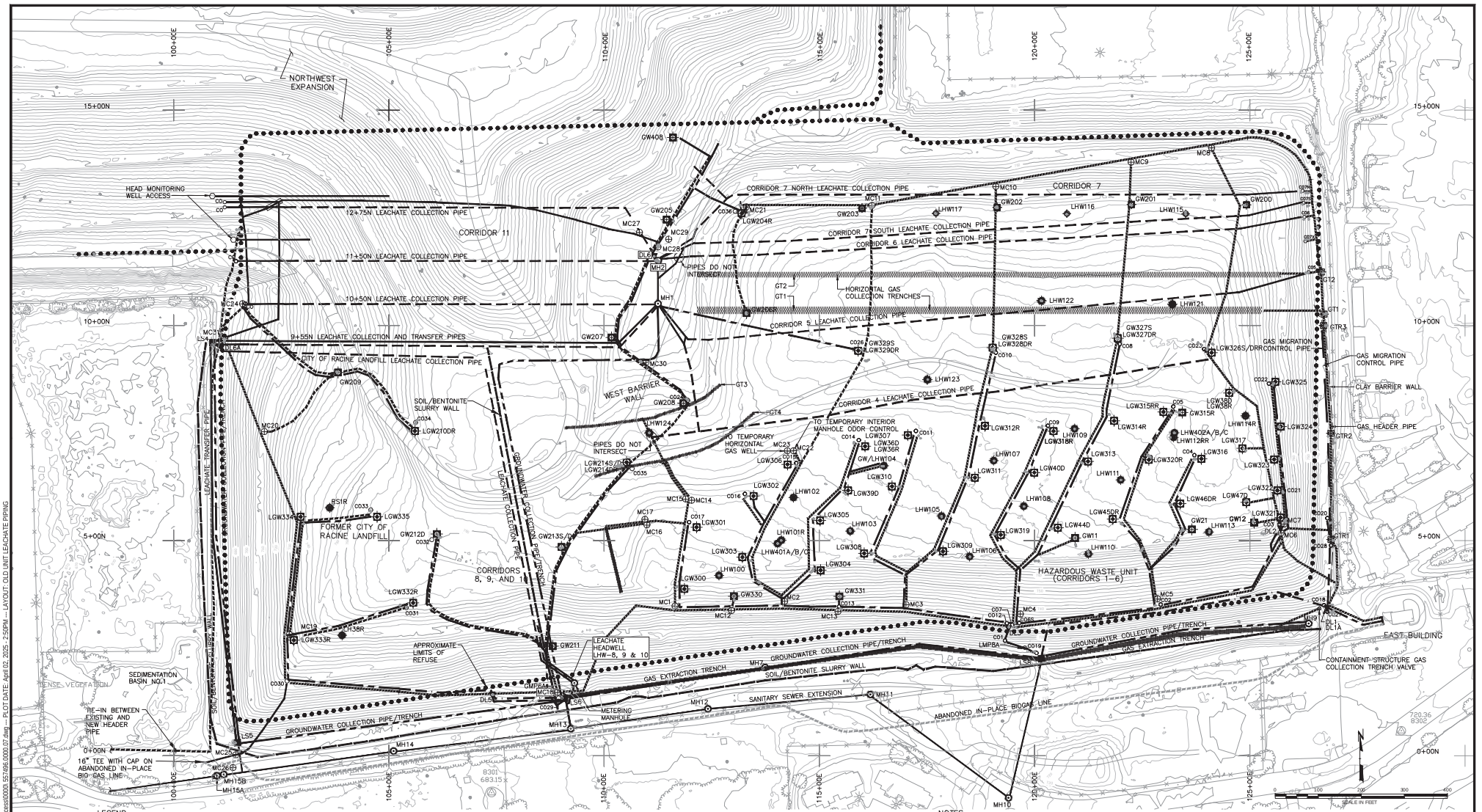
3. LEACHATE AND GAS CONDENSATE MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
LHW20R, LHW21R, LHW22--LHW31, LHW120R, LHW13, LHW14R--LHW17, LHW18--LHW20, 21, 22, LHW121--LHW124, RSIR, LH38R, LHW-8, 9 & 10	QUARTERLY	ELEVATION, DEPTH
LH1--LH10	SEMIANNUALLY	ELEVATION, DEPTH
MH15R, LMP6A, LMP8A, DL2, DL4R, DL8A	MONTHLY	ALKALINITY, CONDUCTIVITY, LEACHATE TDS, LEL, PHOSPHOROUS, BOD5, OIL AND GREASE, TEMPERATURE
MH15R, LMP6A, LMP8A, DL2, DL4R, DL8A	SEMIANNUALLY	CADMIUM, CHLORIDE, HARDNESS IRON, LEAD, MANGANESE, MERCURY, AMMONIA--NITROGEN, TKN, SODIUM, TOTAL PHENOLICS, VOCs (8260), FLUORIDE
MH15R, LMP6A, LMP8A, DL2, DL4R, DL8A	ANNUALLY	BASE--NEUTRAL EXTRACTABLES, ACID EXTRACTABLES
① TO BE INSTALLED AT EXISTING SITE		

4. LANDFILL GAS MONITORING

SAMPLE LOCATIONS	FREQUENCY	PARAMETERS
GW20R, GW21R, GW22--GW31, GW33--GW39, GW41--GW47, GW49--GW53, GW55--GW57, GW59--GW62, GW64--GW67, GW69--GW72, GW74--GW77, GW79--GW82, GW84--GW87, GW89--GW92, GW94--GW97, GW99--GW102, GW104--GW107, GW109--GW112, GW114--GW117, GW119--GW122, GW124--GW127, GW129--GW132, GW134--GW137, GW139--GW142, GW144--GW147, GW149--GW152, GW154--GW157, GW159--GW162, GW164--GW167, GW169--GW172, GW174--GW177, GW179--GW182, GW184--GW187, GW189--GW192, GW194--GW197, GW199--GW202, GW204--GW207, GW209--GW212, GW214--GW217, GW219--GW222, GW224--GW227, GW229--GW232, GW234--GW237, GW239--GW242, GW244--GW247, GW249--GW252, GW254--GW257,


16TH STREET
SANITARY SEWER MANHOLE NO.7
MEADOW LANE
OAKES ROAD
NORTHWEST EXPANSION
PHASE 1
PHASE 2
PHASE 3
PHASE 4
CORRIDOR 11
CORRIDORS 7-7A
CORRIDORS 1-6 (HWU)
CORRIDORS 8, 9 & 10
FORMER CITY OF RACINE LANDFILL
WEPCO SUB-STATION
30' ACCESS EASEMENT
APPROXIMATE GAS TRANSFER LINE LOCATION
OUTFALL 001
ELECTRICAL LINE CONTINUES OFF PROPERTY
ELECTRICAL LINE TIES INTO EXISTING ELECTRICAL TO THE SOUTH
APPROXIMATE ELECTRICAL LINE LOCATION
21st STREET
LOWE LANE
141U AREA
RETAIL SPACE
RETA SPAC
FINAL COVER (5.9 ACRES)
FINAL COVER (2.8 ACRES)
FINAL COVER (6.2 ACRES)
FINAL COVER (3.0 ACRES)
FINAL COVER (5.0 ACRES)
FINAL COVER (15 ACRES)
NON-RCRA FINAL COVER (22.7 ACRES)
FINAL COVER (1.1 ACRES)
FINAL COVER (1.2 ACRES)
FINAL COVER (8.3 ACRE)
FINAL COVER (2.1 ACRES)
FINAL COVER (4.4 ACRES)
FINAL COVER (30 ACRES)
RCRA FINAL COVER (2.1 ACRES)
FINAL COVER (30.7 ACRES)
FINAL COVER (0.7 ACRES)
FINAL COVER (7.4 ACRE S)
FINAL COVER (0.2 ACRES)
FINAL COVER (6.2 ACRES)
FINAL COVER (9.8 ACRES)
FINAL COVER (0.9 ACRES)
FINAL COVER (11.7 ACRES)
RCRA COVER - PHASE 1
RCRA COVER - PHASE 2
RCRA COVER - PHASE 3
SLOPED BARRIER WALL
LEGEND
APPROXIMATE PROPERTY LINE
EXISTING PAVED ROAD
EXISTING UNPAVED ROAD
EXISTING BUILDING
EXISTING 10' CONTOUR
EXISTING 2' CONTOUR
EXISTING SPOT ELEVATION
TREES AND / OR BRUSH
SITE GRID COORDINATE
EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
PIEZOMETER LOCATION AND NUMBER
STAFF GAUGE LOCATION AND NUMBER
MANHOLE/LIFT STATION LOCATION AND NUMBER
APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
NORTHWEST EXPANSION LIMITS OF WASTE
OLD SITE LIMITS OF WASTE
DESIGN MANAGEMENT ZONE
APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
SANITARY SEWER
OVERHEAD ELECTRICAL
SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
RECOVERY WELL / MC GAS CONTROL VALVE
COVER DESIGNS
1991 TO 1993 (NON-RCRA)
- 6" TOPSOIL
- 4' COMPACTED CLAY
1990 TO 2001 (RCRA)
- 6" TOPSOIL
- 1.5' GENERAL FILL
- GEOTEXTILE FILTER
- 1' SELECT SAND
- 40 MIL VLDPE GEOMEMBRANE
- 3' COMPACTED CLAY
LOCATION OF INSTALLED RCRA FINAL COVER
1994 TO 2001 (NR 180)
- 6" TOPSOIL
- 2' GENERAL FILL
- 2' COMPACTED CLAY
2002 TO 2022 (NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' SOIL BARRIER LAYER
LOCATION OF INSTALLED NR 500 FINAL COVER
2023 TO 2024 (NR 500 AND RCRA)
RCRA AREA
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' COMPACTED CLAY
LOCATION OF REVISED RCRA FINAL COVER UPDATED
NON-RCRA AREA (REVISED NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- 2' COMPACTED CLAY
LOCATION OF NR 500 FINAL COVER (REVISED)
NOTES
1. SITE LOCATION PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM ABRO METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 26, 1994, JUNE 1995, MARCH 28, 2005, MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM. THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS REFERENCED TO STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE 0-00N, 100+00E EQUAL TO STATE PLANE COORDINATE 264,186.59N, 2,573,700.72E.
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.
8. THE WESTERN BOUNDARY OF THE RCRA COVER EXTENDS TO THE WESTERN BOUNDARY OF THE GEOMEMBRANE LINER PLACED ON THE BASE OF CORRIDORS 8, 9, AND 10 PER THE AUGUST 2008 DOCUMENTATION REPORT BY EARTHTECH
SCALE IN FEET
0
150
300
450
600
PROJECT: KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN
TITLE: CONSTRUCTED FINAL COVER LOCATIONS
DRAWN BY: T. FIEBRANZ
CHECKED BY: B. KAHNK
APPROVED BY: T. MARTIN
DATE: APRIL 2025
PROJ. NO.: 557496.0000
FIGURE 6
TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600
FILE NO.: 557496.0000.CFCL.dwg
DRAWING NAME: J:\Republic\Kestrel Hawk\557496\0000.CFCL.dwg -- PLOT DATE: April 03, 2025 - 2:16PM -- LAYOUT: CONSTRUCTED FINAL COVER LOCATIONS
24x36 -- USER: TFiebranz -- ATTACHED XREFS: utility - CR; gas - CR; proposed - CR; bound - CR; EG - 2004-10-23; plat.dat.dat - CR; hatching and color - CR; Hatch area Trail - CR; Site Features; Text; 2010 Mylar -- ATTACHED IMAGES:



LEGEND

- SPOT ELEVATION
- GROUND CONTOUR
- ACCESS ROAD
- FENCE
- TREES AND/OR SHRUBS
- APPROXIMATE LIMITS OF REFUSE
- UTILITY TOWER
- SITE DRAINAGE FLOW
- HORIZONTAL GAS EXTRACTION TRENCH
- SOIL/BENTONITE SLURRY WALL
- COMPACTED CLAY BARRIER WALL
- LEACHATE COLLECTION PIPE (PERFORATED)
- LEACHATE TRANSFER PIPE (NON-PERFORATED)
- GROUNDWATER COLLECTION PIPE/TRENCH
- HDPE GAS HEADER PIPE
- DOUBLE-WALLED LEACHATE/CONDENSATE CONVEYANCE PIPE
- GRAVITY LEACHATE CONVEYANCE PIPE
- COMBINED GAS AND LEACHATE HEADER PIPE
- ABANDONED IN-PLACE BIOGAS LINE
- GAS MIGRATION CONTROL PIPE
- LEACHATE HEADWELL LOCATION AND NUMBER
- LEACHATE/GAS EXTRACTION WELL LOCATION AND NUMBER
- GAS EXTRACTION WELL LOCATION AND NUMBER
- GAS TRENCH RISER LOCATION AND NUMBER
- GAS EXTRACTION TRENCH WELLHEAD LOCATION AND NUMBER
- MANHOLE LOCATION AND NUMBER
- CLEANOUT LOCATION AND NUMBER
- LIFT STATION LOCATION AND NUMBER
- MONITORING AND CONTROL ASSEMBLY LOCATION AND NUMBER
- DRIPLEG LOCATION AND NUMBER
- HEAD MONITORING WELL ACCESS
- CONTAINMENT STRUCTURE GAS COLLECTION TRENCH VALVE

NOTES

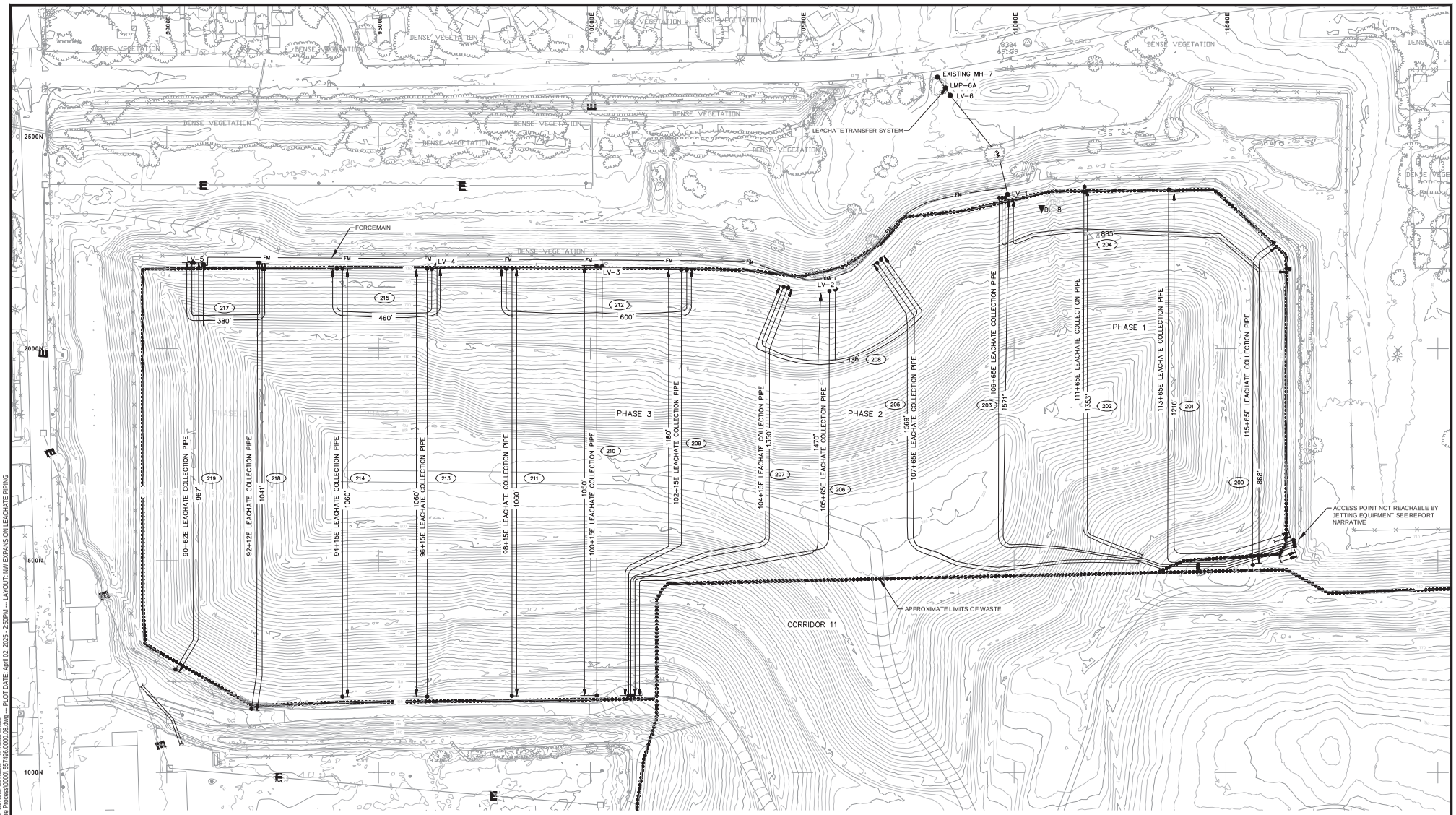
1. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPH): OCTOBER 6, 1994, JUNE 1995, MARCH 28, 2005, MARCH 29, 2008). TOPO SURVEY BY FIRMATEK ON OCTOBER 23, 2024
2. PIPING AND APPURTENANCE LOCATIONS WERE OBTAINED FROM MONTGOMERY WATSON DRAWING 1272013.250903Z0-01, DATED MARCH 1997.
3. LOCATIONS OF PIPING AND APPURTENANCES ARE APPROXIMATE AND WILL REQUIRE FIELD VERIFICATION PRIOR TO FUTURE CONSTRUCTION ACTIVITIES.
4. GAS EXTRACTION WELL LOCATION AND LEACHATE/GAS EXTRACTION WELL LOCATIONS FOR GW205, GW207, GW208, GW212S/D, GW213S/D, LGW214S/D, GW408, LGW210S/D, LGW332, LGW335, AND ASSOCIATED PIPING TO THESE WELLS WERE OBTAINED FROM CONSTRUCTION DOCUMENTATION REPORT FOR 2001 LEACHATE/GAS SYSTEM IMPROVEMENTS PREPARED BY EMCON/OWT, DATED DECEMBER 2001, DRAWING NUMBERS 2 AND 3 FOR PROJECT NUMBER 821679.
5. DUAL EXTRACTION WELLS LGW45DR, LGW46DR, LGW204R, LGW315RR, LGW329DR WERE INSTALLED IN 2003. THE CONSTRUCTION WAS DOCUMENTED BY EARTH TECH INC., REPORT DATED JUNE 2004, PROJECT NUMBER 69974.
6. LGW-326DRR – OCTOBER 2004
   LHW-401 & 402 – BY RMT INC.
7. LGW 36S/D, LGW 38S/D, GW45S, GW46S REMOVED IN 2008.
8. LGW 36R, LGW 38R, LGW 320R, AND LGW 214DR INSTALLED IN 2008.
9. LGW314 WAS REPLACED WITH LGW314R IN 2010.
10. LGW-210DR, LGW-333R, LGW 332R, LHW 112RR AND LHW 114R WERE INSTALLED IN 2012.
11. GAS EXTRACTION WELL LOCATION GW206R WAS OBTAINED FROM THE 2015 LANDFILL GAS SYSTEM SOUTH PLAN VIEW DRAWING BY CQM, INC. DATED FEBRUARY 2016.

PROJECT:	KESTREL HAWK LANDFILL LONG TERM CARE PLAN APPLICATION RACINE, WISCONSIN
TITLE:	OLD UNIT LEACHATE PIPING
DRAWN BY:	T. FIEBRANZ
CHECKED BY:	B. KAHNK
APPROVED BY:	T. MARTIN
DATE:	APRIL 2025
PROJ. NO:	557496.0000
	FIGURE 7

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILENO: 557496.0000.07.dwg

2436 — ATTACHED XREFS: EG: 2024-09-23, Site Features — ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\557496.0000.07.dwg — PLOT DATE: April 02, 2025 - 2:58PM — LAYOUT: OLD UNIT LEACHATE PIPING



LEGEND

- x747.2 — SPOT ELEVATION
- 730 — GROUND CONTOUR
- ACCESS ROAD
- FENCE
- TREES AND/OR SHRUBS
- UTILITY TOWER
- LEACHATE COLLECTION PIPE (PERFORATED)
- LEACHATE TRANSFER PIPE (NON-PERFORATED)
- FM — DOUBLE-WALLED LEACHATE FORCEMAIN TRANSFER PIPE
- LV-1 — MANHOLE LOCATION AND NUMBER
- CLEANOUT LOCATION
- 1053' — PIPE DISTANCE
- 200 — ANNUAL PIPE CLEANING I.D. NUMBER, REFER TO TABLE 1 IN APPENDIX G OF THE ACCOMPANYING REPORT
- DL-8 — DRIPLEG LOCATION AND NUMBER
- APPROXIMATE LIMITS OF WASTE

NOTES

1. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM AERO-METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 08, 1994; JUNE 1995; MARCH 28, 2005 MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)

2. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 1 WERE OBTAINED FROM RMT, INC., PLAN SHEET 9 OF 22, PROJECT NO. 21739.39, DATED DECEMBER 1997. GRADE CONTOURS PIPING AND APPURTENANCE LOCATION FOR PHASE 2 WERE OBTAINED FROM RMT, INC., PLAN SET 6 OF 13, PROJECT NO. 4865.05, DATED AUGUST 2000. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 3 WERE OBTAINED FROM RMT, INC., PLAN SHEET 6 OF 13 PROJECT NO. 4865.85, DATED JUNE 2001. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 4 WERE OBTAINED FROM THE CONSTRUCTION DOCUMENTATION REPORT, DATED MAY 2005, CQM, INC. PLAN SHEET 13 OF 15. PIPING AND APPURTENANCE LOCATIONS FOR PHASE 5 WERE OBTAINED FROM THE CONSTRUCTION DOCUMENTATION REPORT, DATED OCTOBER 2013. CQM, INC, PLAN SHEET A-10.

0 100 200 300 400
SCALE IN FEET

PROJECT: KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE: NW EXPANSION LEACHATE PIPING

DRAWN BY:	T. FIEBRANZ	PROJ NO:	557496.0000
CHECKED BY:	B. KAHNK	FIGURE 8	
APPROVED BY:	T. MARTIN		
DATE:	APRIL 2025		

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILENO: 557496.0000.08.dwg

24.00 — USER: TFiebranz — ATTACHED XREFS: proposal_xsc_pipe_xsc_utility_EG - 2024-10-23, Site Features — ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000 557496.0000.08.dwg — PLOT DATE: April 02, 2025 - 2:50PM — LAYOUT: NW EXPANSION LEACHATE PIPING

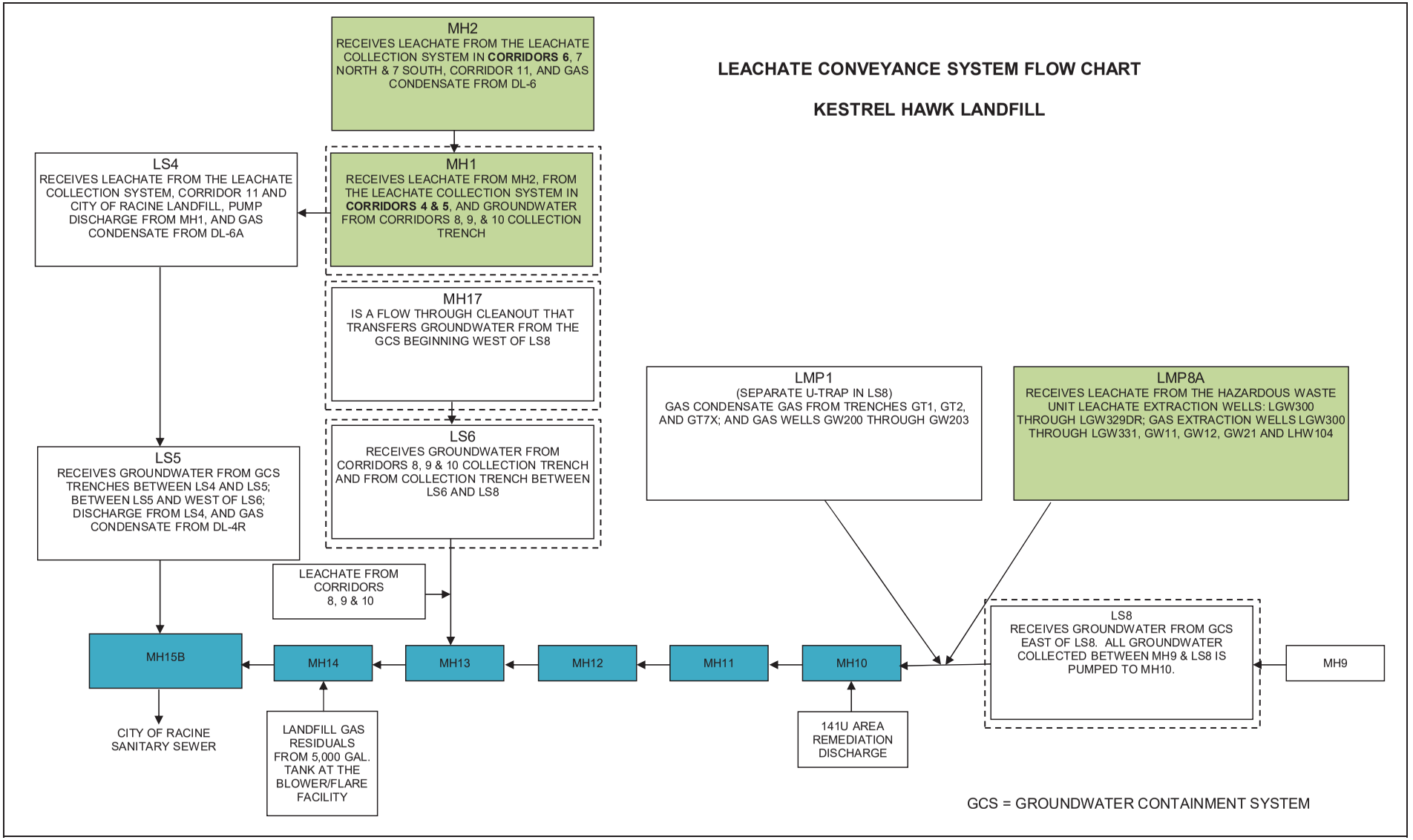
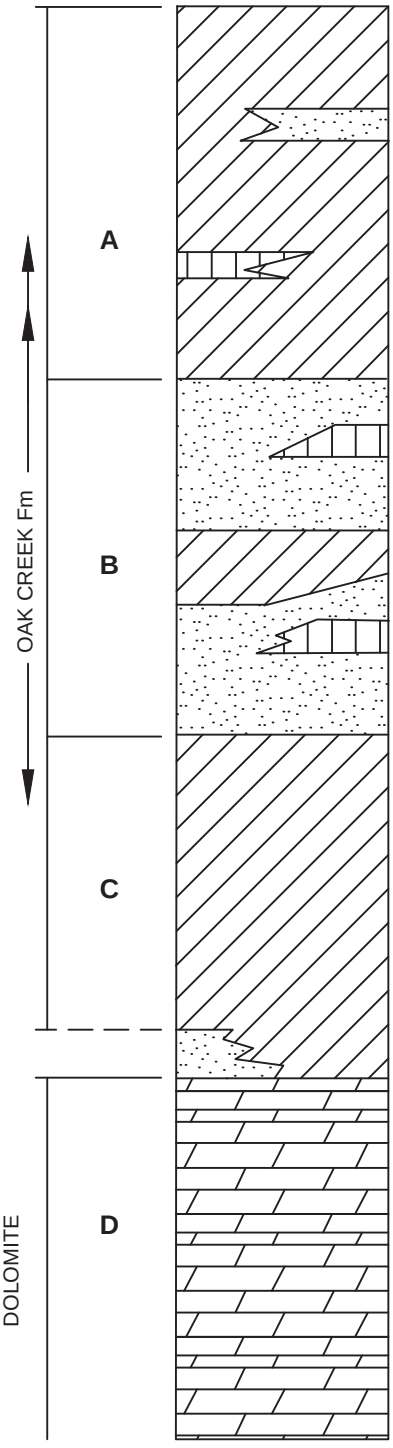


FIGURE 9

J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\Source Files\Tables\557496 - Figure 9 11/6/2024



UNIT	THICKNESS	USCS [1] CLASSIFICATION	SOIL DESCRIPTION
A	25 FT TO 80 FT THICK, SAND/SILT SEAMS UP TO 14 FT THICK	CL WITH SOME CL-ML, ML, SM AND SP	CLAY WITH SOME SILT, WITH OCCASIONAL SILT AND SAND SEAMS
B	35 FT TO 69 FT THICK WITH CLAY SEAM(S) UP TO >30 FT THICK	SM AND ML WITH SOME CL AND CL-ML	SILTY SAND TO SANDY SILT WITH CLAY SEAM(S)
C	20 FT TO 50 FT THICK WITH 15 FT SAND/SILT SEAMS	CL WITH SW AND GW OVERLYING THE BEDROCK	CLAY, SOME SILT
(BASAL COARSE-GRAINED MATERIAL LIKELY NEW BERLIN Fm)			
D	APPROXIMATELY 200 FT THICK		

NOTE [1] UNIFIED SOIL CLASSIFICATION SYSTEM

TRC
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Suite 101
Madison, WI 53717
Phone: 608.826.3600

PROJECT:
KESTREL HAWK LANDFILL
LONG TERM CARE PLAN APPLICATION
RACINE, WISCONSIN

TITLE:
GENERALIZED STRATIGRAPHIC COLUMN OF GEOLOGIC UNITS

DRAWN BY:	T. FIEBRANZ
CHECKED BY:	B. KAHNK
APPROVED BY:	T. MARTIN
DATE:	APRIL 2025
PROJ. NO.:	557496.0000
FILE:	557496.0000.10.dwg

FIGURE 10

8.5x11 -- ATTACHED XREFS: -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000\557496.0000.10.dwg -- PLOT DATE: April 02, 2025 - 2:50PM -- LAYOUT: GENERALIZED STRATIGRAPHIC COLUMN OF GEOLOGIC UNITS

Appendix A: Communication

- A.1 – Closure/Long-Term Care Approval and Licensing Process Guidance Document – November 29, 2022
- A.2 – Kestrel Hawk Landfill – Industrial Wastewater Discharge Permit (Permit #1007-L), December 16, 2024
- A.3 – Kestrel Hawk Landfill (Lic# 0572) – Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b), and (c) of the December 15, 2004 Stipulation and Order for Judgement – December 28, 2005
- A.4 – General Permit to Discharge (Tier 2 Industrial Facilities) – WPDES Permit No. WI-S067857-5 – May 14, 2021
- A.5 – Conditional Plan Modification Approval for Annual Reporting Requirements for Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License #0572, Racine, Wisconsin – August 30, 2017
- A.6 – Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License #0572, Racine, WI – March 12, 1991
- A.7 – Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC," Land Reclamation Company Landfill, EPA ID# WID076171008 – February 7, 1994
- A.8 – Addendum to Notice of Noncompliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – September 16, 2020
- A.9 – Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #0572 – August 23, 2024
- A.10 – Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill – August 30, 1996
- A.11 – Conditional Close Out – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – June 4, 2021
- A.12 – Notice of Non-Compliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 – December 9, 2019

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Appendix A.1
Closure/Long-Term Care Approval and Licensing Process Guidance Document
November 29, 2022

© Republic Services of Wisconsin, Limited Partnership 2025

November 29, 2022

Closure/Long-Term Care Approval and Licensing Process

Landfills Regulated for Solid Waste and Hazardous Waste (NR 500- and 600-series regulations)

Definitions and Key Regulatory References

- NR 500 Closure: See NR 506.08 for closure requirements. The following forms are required:
  - DNR Form 4400-117 (R-1/15), Solid Waste Facility Closure and Long-Term Care License Application
  - DNR Form 4400-067, Solid Waste Land Disposal Site Affidavit
- NR 664 Closure: See NR 664.0115 and 664.0116 for requirements related to closure certification.
- NR 500 LTC License: See NR 520.04(3) for "licensure during the closure and long-term care period". (Note that current operating license 1099 will remain in effect until closure is approved and LTC licensing occurs).
- NR 600 LTC License: See NR 670.001(3), NR 670.014(1) and NR 670.028. NR 670.28 details the information needed for a long-term care license.
- NR 664 LTC Notice: NR 664.0119(1) requires a notice to the department (and to the local zoning authority) regarding the type, location and quantity of hazardous wastes disposed.
- NR 664 LTC Deed Notation: NR 664.0119(2) requires certification to the department that a deed notation has been filed, including a copy the notation document.

Steps

1. If it has not already done so, facility submits to the department (regional staff) a notice of landfill closure. The notice is either:
   a. 120-day closure notice submitted by landfill owner or licensee (as required under s. NR 506.08(1), Wis. Adm. Code), or
   b. Non-renewal box is checked in Section II of the Solid Waste Tonnage/Capacity Certification/License Renewal Form 4400-123
2. Facility submits the NR 500 closure documentation report for the recently completed cap construction along with a summary of past closure reports and approvals.
   a. We recommend that the facility combine this with an NR 664 closure certification report as a single report.
   b. Assuming that all required construction documentation reports and approvals have been previously submitted/issued for all of the previously-capped areas of the site, the closure certification report can simply discuss and list to previous construction documentation submittals and their related approvals rather than regurgitating the contents of these documents. The list should include the title and date of each document and the number of acres that it addresses.
   c. A description of past capping and separation barriers for the HWU should be provided.
   d. A figure or figures should also be provided which identifies the landfill areas associated with each documentation report.
   e. The NR 664 LTC Notice is required to be provided to the department within 60 days of closure certification. This can be included with the NR 664 closure certification report or the NR 670 LTC license application.
   f. Certification of (and a copy of) the NR 664 Deed Notation is required to be provided to the department within 60 days of closure certification. This can be included with the NR 664 closure certification report or the NR 670 LTC license application.
3. DNR regional staff will conduct a final inspection of the facility, alerting the facility of any outstanding closure work/documentation requirements.
4. DNR central office staff will send the following information to the facility (upon their request):
   a. Solid Waste Facility Closure and Long-Term Care License Application – DNR Form 4400-117.

b. Solid Waste Land Disposal Site Affidavit - DNR Form 4400-067.

5. DNR approves the closure documentation/certification report(s), conditioned on:
   a. submittal of a complete NR 500 closure license application;
   b. submittal of a complete NR 670 LTC license application;
   c. any other technical conditions.
6. The facility submits the NR 500 LTC license application and the NR 670 LTC license application. The NR 600 LTC license application must contain all of the information specified in NR 670.028. It is recommended that this application take the form of a revised LTC Plan, thus establishing one stand-alone document for future review and consultation. Attachment A identifies the specific minimum information required by NR 670.028 and the LTC Plan. Attachment B provides recommendations regarding the organization/formatting of this information. Attachment C provides guidance regarding submittal logistics.
   [Note that Attachment B recommends that the information required for the NR 670 LTC license application be presented in the form of a revised LTC Plan, which could also be proposed to serve as the NR 500-series LTC Plan. In this way, all facility LTC information would be documented in one place for future reference].
7. The facility pays the one-time license fees specified in NR 520 Table 3 ($6,600) and NR 670, Appendix II ($80,000)
8. DNR issues one LTC approval letter (for both programs) and issues two separate licenses (NR 500-series LTC license and NR 670 LTC license).
   [Note that in accordance with NR 670.050, the NR 670 LTC license would be issued for 10-year term, and will establish a license renewal application process for subsequent terms not to exceed 10-years].
9. The facility requests, and DNR releases, closure financial assurance.

Attachment A

Long-Term Care License Information Identified in NR 670

Section NR 670.028, Wis. Adm. Code, states, "Information requirements for long-term care licenses. For long-term care licenses, the owner or operator shall submit only the information specified in ss. NR 670.014 (2) (a), (d) to (f), (k), (m), (n), (p) and (s), (3) and (4), unless the department determines that additional information from s. NR 670.014, 670.016, 670.017, 670.018 or 670.021 is necessary...". Each of these elements is identified below and is part of the minimum required elements to be addressed in the long-term care (LTC) license application. This Attachment A is provided for the purpose of providing regulatory citations for the information identified in Attachment B (later), which presents a summary of the information needed in the LTC license application and formatting suggestions.

1. NR 670.014(2)(a), *"A general description of the facility"*.

2. Security- and inspection-related information:
   a. NR 670.014(2)(d), "*A description of the security procedures and equipment required by s. NR 664.0014*".
   b. NR 670.014(2)(e), "*A copy of the general inspection schedule required by s. NR 664.0015 (2)…*"

3. NR 670.014(2)(f), "*A justification of any request for a waiver of the preparedness and prevention requirements of subch. C of ch. NR 664"* (if applicable).

4. NR 670.014(2)(k), floodplain information.

5. The first part of NR 670.014(2)(m) begins with, *"A copy of the closure plan and, where applicable, the long-term care plan required by ss. NR 664.0112, 664.0118 and 664.0197."*
   a. A copy of the long-term care plan is required. (A copy of the closure plan is not needed).
   b. NR 664.0112 also involves future closure-related information, which is not applicable.
   c. The <u>first</u> part of NR 664.0118 requires the inclusion of "*activities that will be carried on after closure of each disposal unit and the frequency of these activities*". This should include:
      (i) A description of the existing systems that require long-term care (e.g. final cover, leachate collection systems. run-on control systems, run-off control systems, monitoring systems, etc.) and describe associated routine and contingent LTC activities.
      (ii) A description of the activities to comply with other applicable requirements of NR 664, including for example:
         - NR 664.0014, Security.
         - NR 664.0015, General inspection requirements.
         - NR 664.0016, Personnel training.
         - NR 664, Subchapter C, Preparedness and Prevention.
         - NR 664, Subchapter D, Contingency Plan and Emergency Procedures.
         - The operating record requirements of NR 664.0073.
         - Annual reporting requirements of NR 664.0075.
   d. The <u>second</u> part of NR 664.0118 goes on to require "*at least all of the following*":
      (i) NR 664.0118(2)(a), regarding monitoring: This should describe the groundwater monitoring and corrective action program and describe how it complies with the requirements of NR 664, Subchapter F.
      (ii) NR 664.0118(2)(b). This should include the planned maintenance activities and frequencies to ensure integrity of the cap and final cover or other containment systems (such as leachate collection systems and cut-off wall-related liquid collection systems) and the function of the monitoring equipment.
      (iii) NR 664.0118(2)(c), facility contact information.

(iv) NR 664.0118(2)(d), alternate requirements for monitoring and LTC financial assurance (probably not applicable)

e. NR 664.0197 involves contingent long-term care for and cost estimates for tank systems.

6. The last part of NR 670.014(2)(m) goes on to require, "*Include, where applicable, as part of the plans, specific requirements in ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 and 664.0603*". (Note that most of these sections are not applicable because they relate to units other than landfills). NR 664.0310(2) applies to landfill long-term care below (for ease of reference, each of these requirements is labelled below with bold font as 6 and 6.a through 6.f):

   (6) "After final closure, the owner or operator shall comply with all long-term care requirements contained in ss. NR 664.0117 to 664.0120, including maintenance and monitoring throughout the long-term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:
   (**6.a**) (a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.
   (**6.b**) (b) Continue to operate the leachate collection and removal system until leachate is no longer detected.
   (**6.c**) (c) Maintain and monitor the leak detection system in accordance with ss. NR 664.0301 (3) (c) 4. and (d) and 664.0303 (3), and comply with all other applicable leak detection system requirements of this chapter.
   (**6.d**) (d) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.
   (**6.e**) (e) Prevent run-on and run-off from eroding or otherwise damaging the final cover.
   (**6.f**) (f) Protect and maintain surveyed benchmarks used in complying with s. NR 664.0309."

7. NR 670.014(2)(n): *"…documentation that notices required under s. NR 664.0119 have been filed.*"
   a. NR 664.0119(1): Submit a record of the type, location and quantity of hazardous wastes disposed of within each cell, to be submitted to the local land use authority.
   b. NR 664.0119(2)(a): File a notation on the property's deed regarding hazardous waste management, restriction of use, and survey plan information.
   c. NR 664.0119(2)(b): Certification of the deed notation, to be provided to the department.

8. NR 670.014(2)(p) relates to closure costs and is not applicable.

9. NR 670.014(2)(p): *"…the most recent long-term care cost estimate for the facility prepared according to s. NR 664.0144 plus a copy of the documentation required to demonstrate financial assurance under s. NR 664.0145."*

10. NR 670.014(2)(s): *"A topographic map showing a distance of 1,000 feet around the facility…"*. This section goes on to establish the specifications and minimum contents of the map.

11. NR 670.014(3): This establishes the required information regarding protection of groundwater. NR 670.014(3)(b) through (h) identifies the detailed groundwater-related information required to be provided for the regulated unit(s), such as:
    a. NR 670.014(3)(b) is not applicable.
    b. NR 670.014(3)(b) specifies hydrogeologic information.
    c. NR 670.014(3)(c) specifies groundwater-related information to be presented in maps.
    d. NR 670.014(3)(d) specifies groundwater contamination-related information
    e. NR 670.014(3)(e) requires "Detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet s. NR 664.0097"
    f. NR 670.014(3)(f) requires information regarding the detection monitoring program (if applicable).
    g. NR 670.014(3)(g) requires information regarding the compliance monitoring program (if applicable).
    h. NR 670.014(3)(h) requires information regarding the compliance monitoring program (if applicable).

12. NR 670.014(4): This establishes the required information regarding solid waste management units.
    a. NR 670.014(4)(a)1. through (a)5. includes information regarding SWMUs.
    b. NR 670.014(4)(a)6. requires past and future corrective action information (if applicable):
    c. NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units.
    d. NR 670.014(4)(c) refers to completion of a RCRA Facility Assessment. The facility should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, the corrective actions taken to date, and future corrective actions planned.

13. The final part of NR 664.028 goes on further to allow the department to determine that additional information related to NR 670.014 (General Requirements), 670.016 (Tanks), 670.017 (Surface Impoundments), 670.018 (Waste Piles) or 670.021 (Landfills) is necessary. The department has currently identified the following additional informational requirements that should be included in a long-term care application:
    a. From NR 670.014, General Requirements
        (i) NR 670.014(2)(g), a copy of the contingency plan.
        (ii) NR 670.014(h)2., runoff controls
        (iii) NR 670.014(h)3., how contamination of water supplies is prevented
        (iv) NR 670.014(h)4., how equipment failure and power outages are mitigated
        (v) NR 670.014 (h)5., how personnel are protected
        (vi) NR 670.014(h)6., how releases to atmosphere are prevented
        (vii) Per NR 670.014(2)(L), an outline of both the introductory and continuing training programs.
    b. From NR 670.021, Landfills. Most of these additional informational requirements generally relate to active landfill operations and closure, which do not need to be addressed. However, NR 670.021(5) requires "*…a description of how each landfill will be maintained and monitored after closure according to s. NR 664.0310(2).*" This is covered in item 6 above.

14. Part A Application: NR 670.001(2) states, "*A license application consists of two parts, part A (see s. NR 670.013) and a feasibility and plan of operation report (see s. NR 670.014 and applicable sections in ss. NR 670.015 to 670.029*". [Note that a feasibility and plan of operation report (FPOR) is generally not needed for closed facilities; rather, the LTC license application; rather, for the purposes of s. NR 670.014, Wis. Adm. Code, the long-term care license application will constitute the facility's FPOR]. The following Part A application information specified in NR 670.013 should be included in the LTC license application:

    a. NR 670.013(1) The activities conducted by the applicant which require it to obtain a license.
    b. NR 670.013(2) Name, mailing address and location, including latitude and longitude of the facility for which the application is submitted.
    c. NR 670.013(4) The operator's name, address, telephone number, ownership status and status as federal, state, private, public, or other entity.
    d. NR 670.013(5) The name, address, and phone number of the owner of the facility.
    e. NR 670.013(6) Whether the facility is located on Indian lands.
    f. NR 670.013(8) For existing facilities, all of the following:
    (a) A scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas.
    (b) Photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.
    g. NR 670.013(9) A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items.
    a. NR 670.013(10) A specification of the hazardous wastes listed or designated under ch. NR 661 to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed annually, and a general description of the processes to be used for the wastes.

b. NR 670.013(11) A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.
c. NR 670.013(12) A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.
d. NR 670.013(13) A brief description of the nature of the business.

15. Please note that the department reserves the right to request additional information in the LTC license application.

Attachment B
NR 670 Long-Term Care License Application Contents

This attachment synthesizes the minimum information requirements for a long-term care (LTC) license application under ch. 670, Wis. Adm. Code, and provides the recommended contents and format for the application. For many of the items outlined below, a code is provided that identifies the source(s) of the requirement within the Attachment A regulatory citations (e.g., code "A.2" refers to section 2 of Attachment A, located immediately before this Attachment B).

While there is no standard format prescribed for the long-term care application, the department recommends that the facility incorporate all required application information into its proposed long-term care plan (LTCP), thus establishing one stand-alone document for future review and consultation. Also, the LTCP can consolidate LTC requirements established under the NR 500- and NR 600-series of regulations.

This Attachment B presents a recommended organizational format for the NR 670 information within a revised LTC Plan.

Long-Term Care Plan (A.5.a)

1. General Facility Description

A description of the facility and history (A.1 and A.14). This should be written to assist the unindoctrinated reader with understanding the key aspects of the facility and its hazardous waste requirements. At a minimum, this should be sure to include:

a. A brief description of the property, location, and current status of the facility (A.1). The property description information should and briefly describe the history of the development of the facility's various landfill areas. A property map(s) depicting these areas and other key appurtenant improvements (e.g. the landfill gas control units, key leachate management components, corrective action components, office, and maintenance buildings, fencing and access points, etc.) should be included. The location information should include the address, the name of the local municipality in which it is located (and any affected municipalities), and the latitude/longitude (A.14.b). This should also address Indian lands (A.14.e) and floodplain information (A.4).
b. Facility owner, operator, and contact information (A.5.d.iii, A.14.c, A.14.d.).
c. A brief history of the hazardous waste management activities at the facility that may be relevant to current hazardous waste requirements, such as the types, approximate quantities, locations, and timeframe of hazardous wastes disposed (A.1, A.14.a, A.14.h), the disposal methods used (e.g. the use of trenches dug into previously-landfilled solid wastes) and the different parts of the HWU that were used for hazardous waste disposal.
d. A summary of capping units and segregation layers that were installed (A.5.b).
e. A brief description of any other environmental licenses, permits, or authorizations that relate in any way to the HWU (A.14.i).
f. Maps and drawings, which include maps/drawings that are needed to support the general description of the facility and that are:
    (i) required in NR 670.014(2)(s) (A.10). Note that if certain detailed NR 670.014(2)(s) mapping requirements are pertinent or not of value, the applicant should identify them and state the reason they are not needed.
    (ii) required as part of the groundwater monitoring plan (A.11.b).
    (iii) required for the Part A application (A.14.f and A.14.j). Note that if certain NR 670.013 detailed mapping requirements are not of value, the applicant should identify them and state the reason they are not needed.

g. Photos (A.14.f). Please describe the purpose of the photo, and indicate the date, location from which the photo was taken, and the direction faced.
h. If corrective action requirements in NR 664.0100 and NR 664.0101 are occurring the facility description briefly describe the program.

2. Long-Term Care Summary

a. Identification of the components and systems that require or facilitate long-term care (e.g. final cover, leachate and gas collection, conveyance and control systems, run-on control systems, run-off control systems, monitoring systems and components, etc.). (A.1) (A.5.c.i) (A.5.d.i) (.5.d.ii) (6.c)
b. A description of long-term leachate management and extraction goals/requirements.
c. A general summary of the site maintenance and repair program activities for these systems and components. (A.5.c.i) (A.5.d.ii) (A.6) (A.6.a through e)
d. A general description of LTC-related environmental monitoring programs (A.5.d.i) (A.6.d)
e. The minimum and remaining estimated duration of LTC and corrective action `activities.

Details of these components and their associated LTC activities should be addressed as discussed in section 3 below.

3. Long-Term Care Details

This should include a detailed description of each of the existing systems that require or facilitate long-term care and the detailed site maintenance and repair program activities. All discrete tasks and subtasks should be broken out and separately described such that they support the LTC cost estimate.

a. Final Cover (A.5.c.i) (A5.d.ii) (A.6.a) (A.6.e)

This should include a detailed description of the final cover/cap system, and drawings/schematics that depict its key components and location(s). Different caps placed in different areas should be addressed. Separation barriers and cover systems that were left in place to separate and or/create barriers between landfill sections this should be described. This should also address any perimeter berms that provide structural support.

A detailed description of the routine and contingent operational and maintenance activities of the final cover systems should be provided.

b. Leachate Management (A.5.c.i) (A.5.d.ii) (A.6.b) This should include a detailed description of leachate containment systems for the facility (such a liners, documented base, cutoff walls, etc. regarding the old east hill, west hill, and saddle area) and the leachate/gas collection systems used for these areas. It should also provide This should include a detailed description of the standards to be met for leachate extraction activities, the rationale for the standards, and associated reporting activities.

f. Run-on and Run-off Controls (A.5.c.i, A.5.d.ii, A.6.e, A.13a.ii)

This should include a detailed description of the run-on and run-off control system(s), drawings/schematics that depict its key components, and all routine and contingent operational and maintenance activities.

g. Groundwater Monitoring Program (A.5.d.i) (A.6.d) (A.11) (A.13.a.iii)

This should include a detailed description the groundwater monitoring program, drawings/schematics that depict its key components, and all routine and contingent activities.

The facility has indicated it is currently implementing a detection monitoring program per ss. NR 664.0091(1)(d) and NR 664.0098, Wis. Adm. Code for the HWU, so this should be articulated along with the basis for this status. The plan should then identify and describe how each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099 are met, including but not limited to requirements for well network/layout, parameters, frequencies, points of compliance, data evaluation, concentration limits, reporting, etc.); more information is presented in subsection C below. The plan should briefly address the triggers for moving into compliance monitoring.

(i) We recommend that the groundwater monitoring plan address the applicable requirements of NR 507. The plan may be written and organized in a manner typical of other monitoring plans (such as NR 507 plans) but must and address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099.

(ii) Note that NR 670.014(3) requires information regarding protection of groundwater and the monitoring plan, including for example site hydrogeologic information, a map, and specific details regarding the monitoring program. Please see section 11 of Attachment A (A.11) for more information.

(iii) The plan should address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099. We recommend that the plan include a "crosswalk" that identifies where each of these requirements is addressed. The following is list of examples of these requirements for facilities in detection monitoring:

NR 664.0091(1)(e) Certified lab use
NR 664.0091(2) Specific program elements
NR 664.0092 Groundwater protection standard(s)
NR 664.0093(1), (2), and (2m) Hazardous constituents that apply
NR 664.0093(3) Groundwater use/exempted aquifers
NR 664.0094(1), (2), (2m) Concentration limits
NR 664.0094(3) Groundwater use/exempted aquifers
NR 664.0095 Point of standards application
NR 664.0097(1) Number, location, and depth of wells (background, POS, and detection)
NR 664.0097(3) Casing
NR 664.0097(4) Sampling and analysis procedures
NR 664.0097(5) Sampling and analysis methods
NR 664.0097(6) GW elevation
NR 664.0097(7) Sampling procedures (including establishment of background)
NR 664.0097(8) and (9) Data evaluation and methods
NR 664.0097(10) Recordkeeping and reporting

The plan should clearly identify and justify any alternative requirement proposed pursuant to s.NR 664.0090(6), Wis, Adm. Code.

(iv) Certain parts of NR 664.0091 through NR 664.0099 refer to requirements to be established in the license and/or by the department. The groundwater monitoring program plan presented by the facility should identify and propose these requirements for the department's consideration in reviewing and approving the plan as part of the re-issued LTC license.

h. Benchmarks: Please describe the locations of surveyed benchmarks and how they are protected and maintained (A.6.f).

i. Corrective Action: Please describe in detail the corrective actions taken to date, and future corrective actions planned. Include descriptions of equipment, operations, and monitoring related to the corrective action program.

j. Please address any other facility components and systems identified in section 2 above that require or facilitate long-term care.

4. Other Applicable NR 664 Requirements

This should describe how the following requirements are to be met:

e. Security procedures and equipment (A.2.a) (A.5.c.ii)

f. Equipment failures (A.13.a.iv)

g. Inspection program (A.2.b) (A.5.c.ii) (A.6). This should include documentation forms and protocols for maintaining the operating record.
   (i) The inspection program should include all the components fitting within NR 664.0015(2)9(a), which includes "monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards". This would also include, for example, monitoring wells, fencing/gates, run-off controls, etc.
   (ii) The inspection program should identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection, per NR 664.0015(2)(c).
   (iii) The inspection program should describe the frequencies of inspections, per NR 664.0015(2)(d).
   (iv) In addition to meeting NR 664.0015(4), the inspection forms should match with the LTC plan's inspection program description. clearly identify the item(s) that are inspected.
   (v) The inspection forms should provide for documentation of remedies/repairs per NR 664.0015(3).

h. Personnel training program (A.5.c.ii) (A.13.a.vii). This should describe the training program and associated documentation/records. At and minimum, the program should describe training that is necessary or appropriate for proper contingency plan implementation, and necessary for proper inspections and repairs to occur, and awareness training such that key facility components (e.g. the cap and monitoring equipment) are not inadvertently damaged by personnel doing work at the facility. The program should describe who (which positions or roles) receives the training and the training frequency.

i. The Contingency Plan (A.5.c.ii) (A.13.a.i). which should also address all applicable preparedness and prevention requirements in subch. C of ch. NR 664, Wis. Adm. Code.

j. How personnel are protected (A.13.a.V)

k. How releases to the atmosphere are prevented (A.13.a.vi)

l. The contingent long-term care plan (and cost estimates) for tank systems per NR 664.0197 (A.5.e). Note that this may not apply because of the WWTU exclusion, which exempts certain units from NR 664 and NR 670 requirements; see NR 664.0001(7)(f); if this exclusion applies the facility should assert this, and identify the tank system components to which it applies.

m. The operating record requirements of NR 664.0073. This should describe operating record and recordkeeping requirements, such as the following:
   (i) NR 664.0073(2)(d), contingency plan incident records

(ii) NR 664.0073(2)(e), inspection records
(iii) NR 664.0073(2)(h), LTC cost estimates
(iv) NR 664.0016(4), training records

n. The annual reporting requirements per s. NR 664.0075, Wis. Adm Code.

o. Documentation that demonstrates compliance with the requirements for long-term care notices per s. NR 664.0119(1) , Wis. Adm. Code (A.7.a) and the deed notice/certification per s. NR 664.0119(1), Wis. Adm. Code (A.7.b and c)

5. Long-Term Care Cost Estimate (A.9)

The long-term care cost estimate should be certified by a qualified professional engineer and/or qualified professional geologist. The cost estimate should be summarized in tabular form showing tasks and subtasks in rows, and units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks, and provide sufficient detail and support to ensure that they:

a. estimate LTC and corrective action costs for the duration of the long-term care period;
b. are based on and present costs for each of the discreet tasks and subtasks described in the work descriptions contained in the LTC Plan. An example of a task may be groundwater monitoring, with example subtasks for sampling, lab analyses, data review, reporting, etc.;
c. for each discrete task and sub-task, include units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks.
d. for each quantity and unit cost, provide the source of or basis for the numbers;
e. are based on exclusive use of a third parties to perform the work, and include costs to procure, administer and manage the third-party work;
f. include a minimum 10% contingency for unforeseen activities;
g. clearly show the basis year of the cost estimate (costs “as of” year, e.g. “all costs are in 2021 dollars”); and
h. cover all costs until the end of the minimum 40-year long-term care financial assurance period.

The department recommends that the LTC Plan discuss a minimum “rolling 30-year window” (i.e. to begin during Year 10 of the LTC period) for its LTC cost estimate (and associated financial assurance) that annually maintains financial assurance for the following 30 years, until the facility demonstrates (and the department approves) that a shorter time period is justified.

6. Long-Term Care Financial Assurance (A.9)

This should address documentation to demonstrate the establishment of LTC and corrective action financial assurance.

7. Solid Waste Management Units and Corrective Action (A.12)

This should identify and describe all SWMUs (A.12.a - c). Note that NR 670.014(4)(a)1. through (a)5. specifies minimum information to be provided for each SWMU (A.12.a). Also note that that NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units (A.12.c). Note that the facility may refer to previous reports rather than repeating such information, to the extent the previous reports may provide some of this information. In particular, the facility should consider the waste disposal areas outside of the HWU, as well as any other SWMUs at the facility.

This section should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, and should describe in detail the corrective actions taken to date, and future corrective actions planned.

8. Other Hazardous Waste Requirements in NR 600-679

To memorialize other hazardous waste compliance details, the LTC Plan should include information assembled by KHL as part of the hazardous waste compliance assessment that concluded with the department's June 4, 2021 Conditional Close-Out letter, such as:

- Generator waste determinations
- Documentation regarding gas processing residuals, including condensate
- WWTU exemption support

Attachment C
NR 670 LTC License Application Submittal Logistics

1. Please provide a cover letter via email addressed to the assigned hazardous waste program licensing specialist (Mr. Coenen) that introduces the application submittal, and provides instructions for downloading any attachments/documents not emailed. Please cc the assigned WNDR solid waste program engineer and hydrogeologist on the cover letter via email.

2. The license application must be certified in accordance with s. NR 670.011, Wis. Adm. Code, which can be included as part of the cover letter. Per s. NR 670.010(2), Wis. Adm. Code, the signature requirements apply to the operator and to the owner. If these are separate entities, separate certifications and signatures are needed. Please ensure that the LTC license application describes the relationship between such multiple entities.

3. Rather than submitting hard (paper) copies: Provide a single portable document format (PDF) file. This can be provided using a file sharing web-site if the file is too large to transmit via email. (Paper copies of certain sections, or Word versions of certain sections, may be requested by the department to facilitate review).

4. Regarding the format of the PDF, please follow these guidelines:
    - The application should be submitted to the department in a single, combined PDF (including the transmittal or cover letter).
    - The single PDF should be built as a searchable/readable PDF, and/or ran through an optical character recognition (OCR) software such as Enhance Scans in Adobe Pro, to make the document a searchable/readable PDF.
    - All parts/sections/subsections (e.g., current Part 1.a.1) and attachments (e.g., appendences, sub-appendices, figures, tables) should be designated bookmarks in the PDF and the name of the bookmark should be the name of the section or attachment.
    - All cross-references to attachments should be internally hyperlinked to the appropriate attachment (e.g., all references to Appendix A in the body of the FPOR should include a hyperlink to Appendix A).
    - Please include a Table of Contents which also contains hyperlinks.
    - Please ensure that the PDF bookmarks are properly populated.

5. Please include a table of contents. Please use a page numbering system where every page is marked with the page number, including the chapter and the date so revised pages (in later versions) are clearly identified. For example, a page numbering system of 5-13 (rev. 12-23-21), indicates Chapter 5, page 13 including revisions made on December 23, 2021. Please refrain from the use of using roman numerals for numbering pages.

6. Some information may be most easily provided by referring to and/or providing copies of previous reports and correspondence, or parts of previous reports or correspondence. An example of such information is site hydrogeologic information. Please ensure that when only a part of previous correspondence is used in this way, the title and date of the original document is provided.

7. The department requests that the facility provides, along with its application, a “crosswalk” that points to the page or section of the application which addresses each informational element identified in Attachments A/B. This is intended assist both the facility and the department in assuring the application is complete. This can be provided with the cover letter.

8. Please note that previous submittals and approvals may establish applicable requirements that still remain in effect. We recommend that the facility carefully review these documents for such requirements. If the long-

term care application seeks to rescind or replace such requirements, it should specifically identify and propose these changes in the application, perhaps in the application's cover letter.

Appendix A.2
Kestrel Hawk Landfill – Industrial Wastewater Discharge Permit (Permit #1007-L)
December 16, 2024

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Anjuman A. Islam, Ph.D.
Water Utility Director

Nathaniel Tillis
Wastewater Utility Director

Water and Wastewater Utilities
RACINE ON THE LAKE
City of Racine, Wisconsin

Kenneth M. Scolaro
Administrative Manager

Chad W. Regalia, P.E.
Chief Engineer

December 16, 2024

RE: Renewal of the Local Limits Pretreatment Discharge Permit

Dear Local Industry:

Your application for an industrial user pretreatment permit has been reviewed and processed in accordance with Section 98-153 of the Racine Municipal Code.

The enclosed permit covers the wastewater discharge from the facility into the Racine Wastewater Utility sewerage system. All discharges from this facility and actions and reports relating thereto shall be in accordance with the terms and conditions of this permit.

This permit is effective for four years (January 1, 2025 to December 31, 2028). If there are any changes to flow volume, processes, or wastewater characteristics at any time during the duration of the permit, you must notify the Utility.

Complete reports need to be postmarked by January 15th and July 15th of each year. Reports postmarked after this date will result in a Notice of Noncompliance for late reporting. Any reports received 45 days after the due date will result in Significant Noncompliance.

If there is TTO testing listed in your permit, this is because one of the parameters that the Utility tested met the threshold for future monitoring. These samples will be collected by the Utility throughout the duration of the permit and sent in for analysis. You will be billed for this analysis but there is nothing further your facility needs to do. Note that if the results are above the TTO limit, it will result in a Notice of Noncompliance.

If you wish to appeal or challenge the effluent limitations, pretreatment requirements, or conditions imposed by the issued wastewater discharge permit, a petition shall be filed for appeal with the Utility Commission within 20 days from the issuance date for the permit as provided for in Section 98-153(a)(11) of the Municipal Code.

If you have any questions regarding your new permit, please contact Amanda Kaminski, Field Services Director directly.
[Email: Amanda.kaminski@cityofracine.org] [Phone: 262-497-5202 / 262-636-9528]

Sincerely,

Nate Tillis
Wastewater Director
Racine Wastewater Utility

Kestrel Hawk Landfill
Republic Services of Wisconsin, LLP
1969 Oakes Road
PERMIT #1007-L

INDUSTRIAL WASTEWATER DISCHARGE PERMIT
LOCAL LIMITS INDUSTRIES
DURATION OF PERMIT 2025 - 2028

RACINE ON THE LAKE
City of Racine, WISCONSIN

RACINE WASTEWATER UTILITY
800 Center Street - Room 227
Racine, Wisconsin 53403
Phone 262-636-9528

INDUSTRIAL USER PERMIT

In compliance with the provisions of Chapter 98 of the Code of General Ordinances of the City of Racine,

KESTREL HAWK LANDFILL-REPUBLIC SERVICES OF WISCONSIN, LLP
PERMIT # 1007-L

located at
1969 OAKES ROAD

is permitted to discharge from the above identified industrial facility and through the outfalls identified in this permit to the Racine Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements and other conditions set forth in this permit. Compliance with this permit does not relieve the permittee of its obligation to comply with any or all applicable pretreatment regulations, standards, or requirements under local, state and federal laws, including any such regulations, standards, requirements or laws that might become effective during the term of this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of, that authorized shall constitute a violation of the permit and the Racine Wastewater Utility Sewer Use Ordinance. This permit is issued to this specific user and may not be reassigned, transferred or sold.

This permit shall become effective January 1, 2025

This permit shall expire at midnight: December 31, 2028

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Chapter 98 of the Code of General Ordinances of the City of Racine, a minimum of 90 days prior to the expiration date.

By: Date: **December 16, 2024**

Nate Tillis
Wastewater Director
Racine Wastewater Utility

TABLE OF CONTENTS

SECTION 1: INDUSTRIAL CATEGORY AND LIMITS
- Description of sample site(s)
- Limits that apply to each site

SECTION 2: SELF MONITORING, SAMPLING, REPORTING, ADDITIONAL REQUIREMENTS
- Self-monitoring requirements
- Sampling techniques and preservation of samples
- Sampling frequency/type (grab, composite, flow-proportional composite), limits and/or BMPs
- Reporting: frequency and due dates
- Fees and costs
- Inspections

SECTION 3: REPORTING REQUIREMENTS
- Best Management Practice Reporting/Records Retention
- Reports of Changed Conditions and Self-Monitoring Results
- Violation Reporting and Automatic Resampling
- Hauled Waste Reporting
- Reports of Potential Problems / Slug Discharge Notification
- Batch Discharge Report
- Slug Discharge Plan
- Compliance Schedule Report
- Notification of Hazardous Waste Reporting
- Certification Statements for Reports
- Permits Issued/Permit Application

SECTION 4: GENERAL CONDITIONS
- Permit duration, continuation, conditions, modifications, revocation
- Appeal Procedure
- Permit Transfer
- Right of Revision
- Violations of permit terms
- Monitoring Facilities and Location, Inspection and Sampling, special warrants
- Change in Flow
- Bypass
- Dilution
- Pretreatment
- Compliance with Standards
- Sludges Generated
- POTW interference
- Falsifying Information
- Confidential Information
- Severability
- Enforcement
- Significant Noncompliance
- Emergency Suspensions, Termination of Discharge
- Legal Action, Criminal Liability, Penalties, Fees, Cost Recovery

SECTION 5: GENERAL DISCHARGE PROHIBITIONS
- Prohibited discharges

INDUSTRY: Kestrel Hawk Landfill-Republic Services of Wisconsin, LLP
PERMIT # 1007-L
ISSUED: 08/31/1985
REISSUED: 08/31/1989, 08/31/1993, 01/01/1997, 01/01/2001, 01/01/2005, 01/01/2009, 01/01/2013, 01/01/2017, 01/01/2021, **01/01/2025**
MODIFIED: N/A

SECTION 1: INDUSTRIAL CATEGORY AND LIMITS

1. INDUSTRIAL CATEGORY:

   - Non-Categorical (Local Limits)

2. DISCHARGE OUTFALLS AND LIMITS:

Upon receipt of this discharge permit, and during the period covered by this permit, all wastewater being discharged from this facility shall not exceed the following effluent limitations:

a. SAMPLE LOCATION: MANHOLE #6A – NORTH SIDE OF THE LANDFILL OFF 16TH STREET
b. SAMPLE LOCATION: MANHOLE #15B – SOUTH SIDE OF THE LANDFILL OFF 21ST STREET

- Local Limits
- Permit pollutants monitored and sampling frequency will be evaluated and may be amended as needed. Both of these sites will also be used for user charge monitoring for BOD, TSS, TP, etc. These parameters have no limit but are used to determine wastewater strength for invoicing. This sampling will be done by the Utility. Third party sampling is voluntary. If the Industry chooses to have their third-party sample for user charge parameters according to sample collection requirements in 40 CFR Part 136, these results must be turned into the Utility. The results will be averaged with the Utility results for invoicing.

POLLUTANT	DAILY MAXIMUM MG/L
CADMIUM (T)	0.70
CHROMIUM (T)	14.0
COPPER (T)	3.61
CYANIDE (T)	1.9
LEAD (T)	1.38
MERCURY	0.10
NICKEL (T)	4.1
ZINC (T)	7.1
pH (Local)	5.0 - 10.0
OIL & GREASE (Local)	200.0
TTO	2.13

SECTION 2: SELF MONITORING AND ANNUAL INSPECTION REQUIREMENTS

1. SELF MONITORING

All sampling and analysis required by this permit shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, otherwise approved by EPA, or as specified in this permit.

The required number of samples listed below shall be taken between the period of **January 1** to **June 30** of each year. The remaining samples shall be taken between **July 1** to **December 31** each year. Sample results should be reported to the Utility when completed. Reports for the first half of the year are due no later than July 15 each year and reports for the second half of the year are due no later than January 15. Any self-monitoring results which indicate a violation must be reported to the Utility within 24 hours of becoming aware of the violation. (See SECTION 3: REPORTING REQUIREMENTS).

The monitoring shall consist of sampling of the regulated wastewaters for those pollutants regulated under **SECTION 1** of this permit, reporting the results and notifying the Utility of any violation.

Composite samples shall be collected over the total discharge period (24 hours, 16 hours, 8 hours), during hours of production. Flow proportional samples shall be taken unless otherwise indicated. 24-hour flow shall be reported.

Grab samples must be taken for batch discharges. The grab sample must be representative of the total tank contents and shall be taken prior to batch discharging. The contents of the tank are to be mixed uniformly or subsamples of the top, middle and bottom of the tank shall be taken and composited.

2. SAMPLE COLLECTION TECHNIQUES

Pretreatment regulations require each significant industrial user to self-monitor semi-annually.

a. Composite Sampling: 24-hour flow-proportional composite samples are required (FPC) for metals.
b. Grab Sampling:

- Sampling for pH, cyanide, oil & grease requires manual collection of grab samples. Grab samples must be representative of the monitored discharge.
- pH must be analyzed immediately.

If an industry samples itself or if an independent company provides this service, the following sampling and preservation requirements should be followed. All sampling and analysis required by this permit shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, otherwise approved by EPA, or as specified in this permit. A DNR certified or registered laboratory should be used. Supply the laboratory with the appropriate parts of your permit. Obtain and use proper sample containers and proper preservation chemicals supplied by the laboratory. Changes in flow (+/- 20%) shall be reported to the Utility.

Parameter	Sample Type	Container	Preservative	Holding Time
pH	Grab	Polyethylene, Fluoropolymer/Teflon or glass (P,FP,G)	(Cannot be preserved)	Analyze immediately
Oil & Grease (HEM)	Grab	Glass	Cool, ≤6°C, HCL or H_2SO_4 to pH<2	28 days
Cyanide, total	Grab	P,FP,G	Cool, ≤6°C, NaOH to pH>12 and reducing agent if residual chlorine is present	14 days
Metals (total)	FPC	P,FP,G	HNO_3 to pH<2	6 months
Mercury (Hg)	FPC	P,FP,G	HNO_3 to pH<2	28 days

3. SAMPLING FREQUENCY AND SAMPLE TYPE REQUIRED

a. Parameter Limitations for Sampling Manhole #6A (North) and #15B (South): Discharge from this facility must meet the following limitations. Flow proportional composite sampling (FPC) is required where indicated. The proper sampling location must be used as indicated in this permit, Manhole #6A (North) and 15B (South)

PARAMETER:	DAILY MAXIMUM MG/L (LOCAL)	January – June SAMPLING FREQUENCY	July - December SAMPLING FREQUENCY	SAMPLE TYPE
CADMIUM (Total)	0.70	One Sample at each Site	One Sample at each Site	FPC
CHROMIUM (Total)	14.0	One Sample at each Site	One Sample at each Site	FPC
COPPER (Total)	3.61	One Sample at each Site	One Sample at each Site	FPC
CYANIDE (Total)	1.9	One Sample at each Site	One Sample at each Site	GRAB
LEAD (Total)	1.38	One Sample at each Site	One Sample at each Site	FPC
MERCURY (Total)	0.10	One Sample at each Site	One Sample at each Site	FPC
NICKEL (Total)	4.1	One Sample at each Site	One Sample at each Site	FPC
ZINC (Total)	7.1	One Sample at each Site	One Sample at each Site	FPC
OIL & GREASE (HEM)	200	One Sample at each Site	One Sample at each Site	GRAB
PH	5.0 MINIMUM 10.0 MAXIMUM	One Sample at each Site	One Sample at each Site	GRAB – analyzed immediately

b. Additional Parameter Limitations for Sampling Manhole #6A (North) and #15B (South): Discharge from this facility must meet the following limitations.

PARAMETER:	January- March Sampling Frequency	April- June Sampling Frequency	July - September Sampling Frequency	October-December Sampling Frequency
Pollutants as listed in Section 11.1 of the Leachate Testing Agreement (Attached)	One Sample at each Site	One Sample at each Site	One Sample at each Site	One Sample at each Site

PARAMETER:	Sample Frequency
Pollutants as listed in Section 11.2 of the Leachate Testing Agreement EPA 129 Priority Pollutant Analysis (Attached)	One Sample at each Site taken Annually This sample may be taken in lieu of Section 11.1 testing for **one** quarter of the above requirements.

c. The Wastewater Director may develop best management practices (BMPs), by ordinance or in individual wastewater discharge permits, to implement local limits and general discharge prohibitions. Control mechanisms (permits) shall contain effluent limits, including best management practices, based on prohibited discharge standards, categorical pretreatment standards, local limits and state and local law.

d. *Daily Maximum Limit*—The maximum allowable discharge limit of a pollutant during a calendar day. Where daily maximum limits are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.

4. REPORTING: All monitoring results should include the full lab report, self-monitoring certification page and must be postmarked by the due date indicated in the table below. Any submitted report postmarked after the due date is a violation of this permit. Any submitted report postmarked more than 45 days after the due date will result in Significant Noncompliance and must be published by the City in the local newspaper as required by section 4 item 23(f) of this permit.

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

REPORT Signed and Certified	**JANUARY to JUNE Due July 15**	**JULY to DECEMBER Due January 15**
Self-monitoring lab report and signed certification for parameters listed in 3.a. above	One full lab report and signed certification form is required for each sample taken during this period.	One full lab report and signed certification form is required for each sample taken during this period.
Hauled Waste Summary	One Summary	One Summary
Flow Data	Measured or Estimated **Average** Daily Flow AND Measured or Estimated **Maximum** Daily Flow	Measured or Estimated **Average** Daily Flow AND Measured or Estimated **Maximum** Daily Flow
Slug Control Plan**	No Spill plan is required for this facility.	

** Following the slug control plan is a condition of the permit per Section 3.7 of this permit and NR 211.235; therefore, not following the most current slug control plan is a violation of permit requirements. The most current slug discharge control plan approved by the city is hereby incorporated into the permit as a permit requirement. The slug control plan will be reviewed annually at inspections to ensure compliance.

REPORT Signed and Certified	**January-March Due April 15**	**April-June Due July 15**	**July-September Due October 15**	**October-December Due January 15**
Agreement Section 11.1	One report for samples taken during this period	One report for samples taken during this period	One report for samples taken during this period	One report for samples taken during this period
Agreement Section 11.2	One report for priority pollutants taken during this annual period. Report is due January 15			

a. All significant industrial users shall, at a frequency determined by the Wastewater Director but in no case less than twice per year (in June and December), submit a report indicating the nature and concentration of pollutants in the discharge which are limited by pretreatment standards and the measured or estimated average and maximum daily flows for the reporting period. In cases where the pretreatment standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the user must submit documentation required by the Wastewater Director or the pretreatment standard necessary to determine the compliance status of the user. All periodic compliance reports must be signed and certified.
b. All wastewater samples must be representative of the user's discharge. Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. The failure of a user to keep its monitoring facility in good working order shall not be grounds for the user to claim that sample results are unrepresentative of its discharge.
c. If an industrial user subject to the reporting requirement in this section monitors any pollutant more frequently than required by the Wastewater Director, using the procedures prescribed, the results of this monitoring shall

be included in the report. Both categorical and non-categorical industrial users shall report all monitoring results.

5. FEES AND COSTS

All permittees are required to pay any fees, including administrative fees, analytical fees, sampling fees, fines and surcharge fees to the Utility as necessary to provide for the recovery of costs incurred for the implementation of the Pretreatment Program. All fees are due within 30 days of invoice.

a. Late fees and penalties will be assessed on any pretreatment fee and/or fine on an escalating basis up to and including termination of discharge privileges.
b. Failure to pay the annual Pretreatment Permit Fee will result in noncompliance penalties and fines in addition to increasing enforcement response up to and including rescinding the industry discharge permit and termination of discharge privileges.
c. Pretreatment Permit fees and Utility sampling frequency and associated costs may be increased by industrial non-compliance.

6. ANNUAL INSPECTION:

Control authorities are required to inspect all significant industrial user properties, Sec 98-137

a. At least once per year, Utility personnel will inspect this facility to update the classification of the site. More frequent inspections may be required. The inspection will include a thorough inspection of the site, a review of records including any hauled waste manifests, sampling records, slug control plans and any other review pertaining to wastewater discharge deemed necessary by the pretreatment inspector.
b. The Wastewater Director, members of the board of standards and other duly authorized employees of the city or utility bearing proper credentials and identification, shall be permitted to enter upon all properties connected to the wastewater works for the purpose of inspection and observation of the measurement, sampling and testing, in accordance with the provisions of this division, and to inspect the discharge to the sewers or natural outlets or wastewater treatment facilities. The Wastewater Director, or his authorized deputy, agent or representative, shall be permitted to enter any premises for the purpose of reviewing plant operations with designated plant personnel for the purpose of determining the scope of the waste control program, and any information so obtained shall be confidential, provided that any review of trade secrets or proprietary processes shall be limited to any discharge therefrom that flows into a public sewer.

SECTION 3: REPORTING REQUIREMENTS

1. BEST MANAGEMENT PRACTICES REPORTS/RECORDS RETENTION

In cases where the pretreatment standard requires compliance with a Best Management Practice (BMP) or pollution prevention alternative, the user must submit documentation required by the Wastewater Director or the pretreatment standard necessary to determine the compliance status of the user. All periodic compliance reports must be signed and certified.

In accordance with NR 211.15 (8) (c) Any industrial user subject to the reporting requirements established in this section shall retain for a minimum of 3 years all records of monitoring activities and results, whether or not such monitoring activities are required, and shall make such records available for inspection and copying by EPA, the Wisconsin Department of Natural Resources, and the receiving POTW. This period for retaining records shall be extended during the pendency of any litigation to which the industrial user or the POTW into which the industrial user discharges is a party, or when requested by the Wisconsin Department of Natural Resources or EPA.
Records shall include the date, exact place, method, and time of sampling, and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used, and the results of such analyses. The retention period shall be automatically extended for the duration of any litigation concerning the user or Wastewater Director, or where the user has been specifically notified of a longer retention period by the Wastewater Director.

2. REPORTS OF CHANGED CONDITIONS AND SELF-MONITORING RESULTS

Each user must notify the Wastewater Director of any planned significant changes to the user's operations or system which might alter the nature, quality, or volume of its wastewater at least twenty (20) days before the change.

a. The Wastewater Director may require the user to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application.
b. The Wastewater Director may issue a wastewater discharge permit or modify an existing wastewater discharge permit in response to changed conditions or anticipated changed conditions.
c. For purposes of this requirement, significant changes include but are not limited to, flow increases of 20 percent or greater, and the discharge of any previously unreported pollutants.

All Industrial Users are *required* to report, during the months of July and January, the self-monitoring results of their wastewater discharge(s). Reports for the first half of the year are due no later than July 15th each year and reports for the second half of the year are due no later than January 15th each year. The report shall indicate the nature and concentration of all pollutants in the effluent for which sampling and analyses were performed including measured maximum and average daily flows during the reporting period.

Any self-monitoring results which indicate a violation must be reported to the Utility within 24 hours of becoming aware of the violation. Initial contact with the Utility should be by phone at 262-636-9550.

All analyses shall be performed and all collected samples properly preserved in accordance with the procedures contained in 40 CFR, PART 136 and amendments thereto or with any other test procedures approved by the EPA administrator. Sampling shall be performed in accordance with the techniques approved by the Administrator.
prescribed in 40 CFR Part 136 or amendments thereto, or otherwise approved by EPA or as specified in this permit, the results of such monitoring shall be included in any calculations of actual daily maximum or monthly average pollutant discharge and results shall be reported in the report submitted to the Racine Wastewater Utility.

3. VIOLATION NOTIFICATION AND AUTOMATIC RESAMPLING

Notice of violation/repeat sampling and reporting. If sampling performed by an industrial user indicates a violation, the user must notify the Wastewater Director within 24 hours of becoming aware of the violation. **Initial contact with the Utility should be by phone at 262-636-9550.** The user shall also repeat the sampling and analysis and submit the results of the repeat analysis to the Wastewater Director within 30 days after becoming aware of the violation. The user is not required to resample if the POTW monitors at the user's facility at least once a month, or if the POTW samples between the user's initial sampling and when the user receives the results of this sampling, or if the POTW has performed the sampling and analysis in lieu of the industrial user.

4. HAULED WASTE REPORTING:

Permittees who have (process) wastes hauled off site for disposal or treatment must have the waste manifested by a licensed waste hauler. Copies of the waste hauler's manifests must be submitted to the Utility semi-annually. The manifests to be submitted should be from the previous six month period and are due July 15 and January 15 each year. In lieu of submitting hauled waste manifests, a semi-annual summary of hauled wastes may be

submitted. In place of submittal, and when approved upon written request, the hauled waste manifests or summary of (process) hauled wastes may be provided at the time of any POTW inspection, or upon request from the POTW. All manifests must be available upon request from the POTW. Reports should indicate the source of the process waste, if categorical waste, what categorical process the waste originated from, the gallons, date hauled and destination of the waste.

5. REPORTS OF POTENTIAL PROBLEMS / SLUG DISCHARGE NOTIFICATION

Each industrial user shall provide protection from accidental discharge of prohibited materials or other substances regulated by the wastewater ordinance. Facilities to prevent accidental discharge of prohibited materials shall be provided and maintained at the user's own expense. Notification shall be immediately provided to the POTW of any discharge that could cause problems at the POTW. Initial contact with the Utility should be by phone at 262-636-9550.

In the case of any discharge, including, but not limited to, accidental discharges, discharges of non-routine, episodic nature, a non-customary batch discharge, or a slug load, that may cause potential problems for the POTW, such as any slug loading in violation of NR 211.10(2) and section 98-151(a) or (b) of the wastewater ordinance, or of any changes at the industrial users' facility affecting the potential for a slug discharge and the need for a slug control plan as required by NR 211.235(4)(a) and section 98-151(m) of the wastewater ordinance, the user shall immediately telephone 262-636-9550 and notify the Wastewater Director of the incident. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and corrective actions taken by the user.

A notice shall be permanently posted on the user's bulletin board or other prominent location advising employees whom to call in the event of a discharge described above. Employers shall ensure that all employees, who may cause such a discharge to occur, are advised of the emergency notifications procedure.

a. Slug or accidental discharges. Industrial users shall notify the utility immediately upon having a slug or accidental discharge of substances or wastewater in violation of this division in order to enable countermeasures to be taken by the utility to minimize damage to the POTW and the receiving waters. The notification shall include damage to the POTW and the receiving waters, location of discharge, type of waste, concentration and volume, and corrective actions. The utility may choose to immediately take action pursuant to section 98-155 of the wastewater ordinance (Enforcement).

b. Within five days following an accidental discharge, the industrial user shall submit to the Wastewater Director a detailed written report describing the cause of the discharge and the measures to be taken by the industrial user to prevent similar future occurrences. Such notification shall not relieve the industrial user of any expense, loss, damage, or other liability that may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property; nor shall such notification relieve the industrial user of any fines, civil penalties, or other liability that may be imposed by this division or other applicable law. After receipt and review of the written report, the utility may choose to take no further action or to take action in accordance with section 98-155 of the wastewater ordinance.

c. *Operating upsets report.* For the purposes of this section, upset means an exceptional incident in which there is unintentional and temporary noncompliance with categorical pretreatment standards because of factors beyond the reasonable control of the user. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. Any categorical industrial user which experiences a temporary state of noncompliance with this section or a wastewater discharge permit issued pursuant hereto shall inform the utility thereof within 24 hours of first awareness of the commencement of the upset. The utility may choose to immediately take action pursuant to section 98-155. Where such information is given orally, the user shall file a written follow-up report with the utility within five days. The report shall specify:

    i. Description of the upset, the cause thereof, and the upset's impact on a user's compliance status.

    ii. Duration of noncompliance, including exact dates and times of noncompliance and if the noncompliance continues, the time by which compliance is reasonably expected to occur.

    iii. All steps taken or to be taken to reduce, eliminate, and prevent recurrence of such an upset or other conditions of noncompliance.

A documented and verified bona fide operating upset shall be an affirmative defense to any enforcement action brought by the utility against a user for any noncompliance with the section or any wastewater discharge permit issued pursuant hereto, which arises out of violations alleged to have occurred during the period of the upset. Such notification shall not relieve the user of any expense, loss, damage, or other liability that may be incurred as result of damage to the POTW, fish kills, or any other damage to person or property; nor shall such notification relieve the user of any fines, civil penalties, or other liability that may be imposed by this division or other applicable law. After

receipt and review of the written report, the utility may choose to take no further action or to take action in accordance with section 98-155 of the wastewater ordinance.

6. **BATCH DISCHARGE REPORT/SLUG DISCHARGE NOTIFICATION:**
The Wastewater Director may require a user to notify the utility five days prior to discharging the contents of any tank with a batch discharge. Included in this report shall be the volume of all batch discharges recorded for each discharge event and batch tank volumes. The Wastewater Director may require that batch discharges or tank contents to be discharged must be analyzed by procedures outlined under the self-monitoring reports section, and must be found to be in compliance with all discharge limits that are in effect before discharge may occur. Grab samples must be taken for batch discharges. The grab samples must be representative of the monitored discharge or total tank contents and shall be taken prior to batch discharging. The contents of the tank are to be mixed uniformly or subsamples of the top, middle and bottom of the tank shall be taken and composited.

7. **SLUG DISCHARGE CONTROL PLAN**
The Wastewater Director shall evaluate whether each significant industrial user needs an accidental discharge/slug control plan or other action to control slug discharges [NR 211.235] Significant industrial users shall be evaluated within 1 year of being designated as significant industrial users. The Wastewater Director may require any user to develop, submit for approval, and implement a slug discharge control plan; see 98-151(m) for approved slug plan. Alternatively, the Wastewater Director may develop such a plan for any user. An accidental discharge/slug control plan shall follow the approved format outlined below:

INDUSTRIAL USER (IU) SPILL/SLUG CONTROL PLAN

- GENERAL INFORMATION: Name and Address, Contact Person, Discharge Practices, facility layout, Security Provisions and Employee Training (SECTION 1)
- MATERIAL INVENTORY: Types, volumes, containers, etc. (SECTION 2)
- SPILL/SLUG REPORTING: Description of procedures for notifying POTW (SECTION 3)
- SPILL AND LEAK PREVENTION: Procedures to prevent spills, maintain chemical storage, transfer materials, site run-off and training. (SECTION 4)
- EMERGENCY RESPONSE EQUIPMENT AND PROCEDURES: Inventory and location of equipment; and procedures (SECTION 5)
- DAMAGE CONTROL: Limiting damage to the environment and the wastewater treatment plant. (SECTION 6)
- TRAINING: Providing employee training. (SECTION 7)
- CERTIFICATION: A certification that the Plan is being implemented to prevent and control slugs and spills. (SECTION 8)

SECTION 1: GENERAL INFORMATION

A. Slug/Spill Control Plans must include enough information to allow the Utility to:
1) categorize and restrict the industry's potential for a slug discharge; and
2) respond promptly and efficiently in an emergency.
   a) Name
      Address
      Industry description
      Contact person
      Location of Slug/spill plan
   b) Previous spills and actions taken
   c) General layout of the facility indicating location of chemicals, chemical storage, drains, loading and unloading areas, and pretreatment facilities.
   d) Discharge practices, continuous, occasional, no-discharge, drains with plugs

SECTION 2: MATERIALS INVENTORY

A. The facility should provide data on all materials of concern used and stored on site. This may include those materials for which the Utility has established local limits. This information is useful in determining the origin of a slug or spill, potential hazards and appropriate response procedures. A chart format works well:

Chemical	Location	Volume present in facility	Type of container	Transfer areas and practices	Remarks

1) Materials - Both chemical and trade names should be listed (OSHA SDSs may be used).
2) Location – This will assist personnel in locating areas affected by a spill.
3) Container Volume - Useful in determining the potential impact of a slug/spill.

4) Container Description - The type of container (e.g. steel drum, fiberglass tank, etc.) and the presence of any valves, pumps, transfer pipes, etc.
5) Transfer/Transport Areas – To assess spill potential, possible effects on the treatment plant.
6) Additional Remarks - Information on the physical, chemical, and toxicological effects of each material, and special precautions to prevent contact between incompatible materials.

B. Each facility must demonstrate that the following aspects have been considered:
1) construction of the container;
2) other materials in the immediate vicinity; and
3) surrounding environment

SECTION 3: SPILL REPORTING

A. Reporting and documenting spills and slug discharges should be described.
1) Time, date, and cause of the incident;
2) impact of the spill on the treatment plant and the environment;
3) extent of injury and/or damage; and
4) how future incidents can be avoided.
5) A description of clean-up and disposal procedures must be included where applicable. Reports should address the following questions regarding plan adequacy:
a) Was the safety of personnel and the surrounding community ensured throughout the incident?
b) Were personnel working near the spill provided with access to protective equipment?
c) Was the spill confined quickly?
d) Was fire extinguishing equipment adequate and readily available?
e) Did secondary containment structures remain intact? Were they properly sized?
f) Were appropriate authorities immediately notified of the incident?

B. Recommendations for improvement in spill response should be included.
The investigation report should be available to the Utility, fire, and insurance firms (if applicable) to assist these agencies in their investigations. Copies of forms used for reporting and a list of appropriate response agencies and phone numbers should be included in the Plan.

SECTION 4: SPILL AND LEAK PREVENTION

This subsection is divided into a discussion of equipment and procedures. Information that a Slug Control Plan could contain are listed here.

A. Existing and Proposed Spill Prevention and Containment Equipment
1) This section should identify all existing equipment and systems that are in place.
2) If equipment needs to be purchased, the expected purchase dates should be provided.

B. Equipment to Prevent or Detect Spills
1) Chemical storage, process tanks, holding tanks, use compatible materials in construction; underground seepage protection; cathodic protection; level sensing devices; overflow, temperature, pressure alarms; heating coils; collision protection; secondary containment; diversionary structures.
2) Drums: drum construction; storage areas; secondary containment; diversionary structures; collision protection; drum handling equipment; drip pans
3) Pipes, Valves, Fittings, Pumps, Electrical and Mechanical Equipment: seals; valve stem packing; gaskets; cathodic protection; vehicular traffic warning signs
4) Loading Stations: fill safeguards; curbs and drains; warning signs/improper disconnect protection; secondary containment
5) Alarm Systems: to detect unauthorized discharge flows, pH excursions, etc.

C. Equipment to Contain Spills
1) Booms, barriers, sweeps, and fenders; surface collecting agents; absorbent materials; skimmers, oil/water separators; sumps; sewer plugs.
2) Address secondary containment system. A facility which has spill potential should provide secondary containment systems wherever possible.
a) Diking is the most effective secondary containment for bulk chemical storage. Dikes can be constructed from concrete, cinder blocks, or earth. They should contain 110% of the largest tank capacity, or water from a maximum 24 hour/ten year rainfall event, whichever is greater. Design of the dike should include the containment of a spraying leak from the side of the tank or baffles could be installed on top of the dike to deflect spray and cause it to drop into the containment area.
b) Diversion of flow of spilled material away from its naturally expected path can also be an effective means of secondary containment. Diversionary structures consist of curbs, sumps or gutters which divert spilled material to the collection tank.

D. Procedures
1) Many operation and maintenance procedures are common-sense and should be included in the Plan.

Good housekeeping includes chemical storage and prompt spill cleanup to prevent reaching the sewage system. Preventive maintenance includes periodic inspections and equipment testing, adjustment, repair, or parts replacement. A security system to prevent facility site entry would reduce the risk of illegal activities that could cause a slug or spill.

2) Examples of operating and maintenance procedures are listed below:
    a) Inspect chemical storage vessels, and process vessels and fittings (pumps, valves, piping): Appropriate materials of construction are to be used that are compatible with chemicals being processed. Inspections and monitoring frequencies should be listed.
    b) Inspect foundations and supports of large tanks, vessels, and piping:
    c) Above-ground vessels should be protected with truck guards. Underground vessels and pipes should be protected from physical and corrosion damage.
    d) Liquid level control devices placed on open tanks, use grounding apparatus (where necessary): Overflow, temperature and pressure alarms should be installed.
    e) Use proper drum handling equipment: No scooping drums with forks of a fork truck. Use pallets. Oil dispensing racks should be provided with drip pans.
    f) Secure loading/unloading pump station controls: Warning signs or crossing gates should be used to prevent trucks from driving away while the loading hose is connected.
    g) Eliminate all unnecessary cross connections: Unnecessary floor drains should be plugged, especially in high-risk areas.
    h) Utilize automatic storm water and/or sewer sampling systems to monitor for spills: Systems can have automatic shut-off devices to prohibit discharge.

SECTION 5: EMERGENCY RESPONSE EQUIPMENT AND PROCEDURES

Information in this section of the Plan includes an inventory of available emergency response equipment and a description of emergency response procedures.

A. Equipment
    1) Communication equipment and alarms: Phone, intercom, radio, alarm, etc.
    2) Spill containment and control equipment and tools: Absorbent materials and dry chemicals.
    3) Spilled material storage containers: Spills must be contained and removed as soon as possible to prevent spreading into other areas.
    4) Protective clothing and respirators (if needed):
        - flameproof protective clothing
        - rubber gloves
        - apron
        - goggles/face mask
        - hard hat
        - self-contained breathing apparatus
    5) First aid kits: Immediately available for use if necessary. State the location of first aid kits.
    6) Ventilation equipment: Tests should be made for explosive atmosphere, toxic gases and oxygen deficiency. Ventilate area if needed.
    7) Decontamination equipment: Appropriate protective clothing and monitoring equipment should be used for radioactive material.
    8) Fire extinguishing systems: Locations should be posted throughout the plant.

B. Procedures: Spill plans should contain a spill response description. Procedures should minimize danger to human health and to assist in containment and cleanup of a spill.
    1) Notification of proper facility personnel: The proper qualified person should respond to a spill. This person(s) should be familiar with the Plan and have the authority to initiate emergency response procedures. Signs indicating this contact and their phone number should be posted.
    2) Evacuation procedures: An evacuation plan should be posted. The plan should contain: (1) a map of evacuation routes, (2) a map of alternative evacuation routes, and (3) a description of signals used to begin and conduct an evacuation.
    3) Notification of response agencies and contractors: A list of spill response agencies and phone numbers should be posted. In the event of a spill, the appropriate response agency should be notified immediately.
    4) Spill assessment and response procedures: Those designated to carry out spill response procedures should assess the spill. The origin of the spill and the impact should be assed. Spill response procedures that should be included in the plan:
        a) Notification of facility personnel by activating the communication and/or alarm system
        b) Begin evacuation procedures if necessary
        c) Notification of appropriate local, state, and federal agencies
        d) Stop the flow by shutting off pumps or closing valves
        e) Prevent contact between incompatible materials
        f) Commence clean-up activities

g) Submit necessary reports

5) Procedures for clean-up, treatment, and/or disposal of spilled materials: Spilled material should be treated or disposed of to eliminate health and safety hazards. Information pertaining to treatment and disposal methods used by the facility should be included in the Plan. If outside contractors and/or consultants are utilized in clean-up, treatment, or disposal, the plan should include the company name, contact person and phone number.

These procedures should be consistent with the ones established in the facility's OSHA Emergency Action Plan, as required by 29 CFR §1910.38

SECTION 6: DAMAGE CONTROL

Information in this section of the plan should describe how the facility plan will limit damage to the environment and the wastewater treatment plant.

SECTION 7: TRAINING PROGRAM

A. The Plan should contain an outline of the training program given to employees. Specialized training should also be provided to each employee or group of employees that handle potentially dangerous chemicals.

B. Periodic training sessions should be conducted to assure understanding of the Plan.
   1) New employees should be trained immediately upon employment.
   2) Employees should also be notified and retrained with any Plan changes.
   3) Training records should be maintained and kept three years from the date the employee last worked at the facility.
   4) Periodic drills should be set up. The purpose and frequency of drills should be indicated in the Plan.

SECTION 8: CERTIFICATION

BASED ON MY INQUIRY OF THE PERSON OR PERSONS DIRECTLY RESPONSIBLE FOR MANAGING COMPLIANCE WITH THE SLUG/SPILL CONTROL MEASURES IN THE SLUG/SPILL PLAN, I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS FACILITY IS IMPLEMENTING THE SLUG CONTROL PLAN SUBMITTED TO THE RACINE WASTEWATER UTILITY.

_____ _____

NAME DATE

_____

TITLE OF AUTHORIZED REPRESENTATIVE

8. COMPLIANCE SCHEDULE REPORT:

An industrial user subject to a compliance schedule shall submit to the Utility, not later than 14 days following each date in the compliance schedule, a progress report. The report must indicate whether or not the increment of progress was met on the date, the reason for delay, and the steps taken by the permittee to return to the established schedule.

Compliance schedule progress reports: The following conditions shall apply to the compliance schedule required by section 98-153(b)(1)b.7. of the wastewater ordinance:

a. The schedule shall contain progress increments in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the user to meet the applicable pretreatment standards (such events include, but are not limited to, hiring an engineer, completing preliminary and final plans, executing contracts for major components, commencing and completing construction, and beginning and conducting routine operation);
b. No increment referred to above shall exceed nine months; The Wastewater Director may reduce any increment referred to above pending the severity of the noncompliance and compliance history of the user;
c. The user shall submit a progress report to the Wastewater Director no later than 14 days following each date in the schedule and the final date of compliance including, as a minimum, whether or not it complied with the increment of progress, the reason for any delay, and, if appropriate, the steps being taken by the user to return to the established schedule; and
d. In no event shall more than nine months elapse between such progress reports to the Wastewater Director.

9. NOTIFICATION OF HAZARDOUS WASTES IN DISCHARGE REPORT

An industry which discharges any amount of acute hazardous waste according to s. NR 661.30 (4) or 661.33 (5); or more than 15 kilograms per calendar month of any substance that would be hazardous waste according to ch. NR 661 if otherwise disposed, to the sanitary sewer shall notify the POTW, the WDNR's Bureau of Solid Waste and the EPA Region V Waste Management Division Director in writing, of any discharge into the POTW of a substance

which, if otherwise disposed of, would be a hazardous waste under 40 CFR Part 261. Such notification must include the name of the hazardous waste, the EPA hazardous waste number and the type of discharge (batch, continuous or other); and submit a certification that the industrial user has a program in place to reduce to the extent economically practicable the volume and toxicity of the generated hazardous wastes. If the user discharges more than one hundred (100) kilograms of such waste per calendar month to the POTW, the notification also shall contain the following information to the extent such information is known and readily available to the user: an identification of the hazardous constituents contained in the wastes, an estimation of the mass and concentration of such constituents in the wastestream discharged during that calendar month, and an estimation of the mass of constituents in the wastestream expected to be discharged during the following twelve (12) months. All notifications must take place no later than one hundred and eighty (180) days after the discharge commences. Any notification under this section needs to be submitted only once except for notification of changed discharge in section 98-153(b)(5). The notification requirement in this section does not apply to pollutants already reported by users subject to categorical pretreatment standards under self-monitoring requirements. In the case of any new regulations under section 3001 of RCRA identifying additional characteristics of hazardous waste or listing any additional substance as a hazardous waste, the user must notify the Wastewater Director, the EPA Regional Waste Management Waste Division Director, and State hazardous waste authorities of the discharge of such substance within ninety (90) days of the effective date of such regulations.

10. CERTIFICATION STATEMENTS for REPORTS:

All wastewater discharge permit applications, baseline monitoring reports, 90-day compliance reports categorical industrial user periodic reports on continued compliance and any other user reports containing analytical data, including reports from non-categorical permitted industrial users must be signed by an authorized representative of the user as specified, as follows, and contain the following certification statement:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

AUTHORIZED REPRESENTATIVE DEFINITION – for signing reports:

a. If the industrial user is a corporation, the certification shall be signed by:
   i. A president, secretary, treasurer, vice-president in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation;

   ii. The manager of one or more manufacturing facilities provided the manager is authorized to make decisions which govern the operation of the facility, make major capital investment recommendations, initiate and direct comprehensive measures to assure long-term compliance with environmental laws, can ensure the necessary systems are established to gather complete and accurate information for the report and where authority to sign documents has been delegated to the manager according to the corporation's procedures; or

   iii. A representative of a person described above if the representative has been authorized according to d. below.

b. If the industrial user is a partnership, the certification statement shall be signed by either a general partner of a representative authorized according to d. below.
c. If the industrial user is a sole proprietorship, the certification statement shall be signed by either the proprietor or a representative authorized according to d. below.
d. Authority to sign the certification statement may be delegated if:
   The person to whom authority is delegated is an individual or occupies a position with responsibility for:
   - The overall operation of the facility from which the discharge occurs, such as a plant manager; or
   - The overall environmental matters for the company, such as a corporate environmental officer; and
   - A written authorization is submitted to the control authority. If circumstances change so that an authorization is no longer accurate, the industrial user shall submit a new authorization before or along with the submission of any report signed by a new representative.
e. Signed statements shall be submitted to the following address:

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

11. PERMITS ISSUED

All significant users are required to obtain a wastewater discharge permit. All new users proposing to connect to or to contribute to the wastewater works shall be surveyed to determine their need to obtain a wastewater discharge permit before connecting to or contributing to the POTW. All significant users that have facilities in more than one geographic location will be issued separate wastewater discharge permits for each facility. An individual wastewater discharge permit shall include such conditions as are deemed reasonably necessary by the Wastewater Director to prevent pass-through or interference, protect the quality of the receiving water, protect worker health and safety, facilitate sludge management and disposal, and protect against damage to the POTW. All permits must contain:

a. A statement that indicates the wastewater discharge permit issuance date, expiration date and effective date;
b. A statement that the wastewater discharge permit is issued to a specific industrial user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new significant user without the written permission of the Utility.
c. Effluent limits, including Best Management Practices, based on applicable Pretreatment Standards and local limits;
d. Self-monitoring, sampling, reporting, notification, and record-keeping requirements. These requirements shall include an identification of pollutants (or best management practice) to be monitored, sampling location, sampling frequency, and sample type based on Federal, State, and local law.
e. A new wastewater discharge applicant or industry user applying for permit renewal shall sample for suspected TTO compounds. Any toxic organic compound found in the user's discharge at a concentration greater than 0.01 mg/l will be summed for a determination of compliance with the TTO limit specified in section 98-151(d). If an individual identified TTO is below 0.01 mg/l, no sampling for that TTO compound will be required for the duration of the permit.
f. A statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable federal, state, or local law.
g. Requirements to control slug discharge, if determined by the Wastewater Director to be necessary.

Other permits. The Wastewater Director may require other users to obtain wastewater discharge permits as necessary to carry out the purpose of this division. Industries that do not discharge process waste, or discharge minimal amounts of wastewater, but are still considered by the Wastewater Director to have the potential to impact the POTW, may be issued a minimal or no-discharge permit. This permit is approved only after the Wastewater Director has inspected the facility. A slug discharge plan must be on file with the utility. The facility will be inspected annually to confirm the no discharge status of the facility. Groundwater discharge permits may be required in accordance with Chapter 98-151(o).

h. Excepting that upon finding that a user meeting the criteria of a significant non-categorical user has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Wastewater Director may at any time, on its own initiative or in response to a petition received from a user, and in accordance with procedures in 40 CFR 403.8(f)(6), determine that such user should not be considered a significant industrial user. Such user shall be classified as a non-significant industrial user.

12. PERMIT APPLICATION

Application: Users required to obtain a wastewater discharge permit shall complete and file with the utility an application in the form prescribed by the utility, and accompanied by a permit fee as specified in section 98-154 of the wastewater ordinance. Significant users shall submit a permit application for a wastewater discharge permit within 90 days after the effective date of this division, and proposed new significant users shall submit a permit application at least 90 days prior to connecting to or contributing to the POTW. Users which plan to become significant users by changing their wastewater volume and/or characteristics shall submit a permit application at least 90 days before the proposed process wastewater is discharged to the sewerage system. A 180-day baseline report may be substituted for the permit application. New users shall submit estimates for those required items where actual data is not yet available. The permit application shall be signed by an authorized representative of the industrial user, and certified by a qualified professional. In support of the application, the significant user shall submit, in units and terms appropriate for evaluation, the following information:

a. Name, address and location for each facility (if different from the address), including the name of the operator

and owner;

b. Contact information, description of activities, facilities and plant production processes on the premises;
c. Any environmental control permits held by or for the facility;
d. SIC number according to the Standard Industrial Classification Manual, Bureau of the Budget, 1972, as amended; or NAICS code according to the North American Industrial Classification System (1997);
e. Description of operations:
    i. A brief description of the nature, activities, average rate of production (including each product produced by type, amount, processes, and rate of production). This description should include a schematic process diagram, which indicates points of discharge to the POTW from the regulated processes.
    ii. Types of waste generated, and a list of all raw materials and chemicals used or stored at the facility which are, or could accidentally or intentionally be, discharged to the POTW; a spill plan may be required if deemed necessary for permit approval. The spill plan shall meet all requirements as found in section 98-151(m).
    iii. Number and type of employees, hours of operation, and proposed or actual hours of operation;
    iv. Type and amount of raw materials processed (average and maximum per day);
    v. Site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, floor drains, and appurtenances by size, location, and elevation, and all points of discharge, and all connections to the municipal sanitary sewer system by size and location;

f. Wastewater constituents and characteristics for each facility, including but not limited to, those standards mentioned in section 98-151 of this division as determined by a reliable analytical laboratory; sampling and analysis if required by categorical pretreatment standards shall be performed in accordance with procedures established by the EPA pursuant to section 304(h) of the Act and contained in 40 CFR, part 136, as amended. In the case of new industrial users, item 3 shall mean projected wastes;
g. Times and duration of wastewater contribution for each facility;
h. The location for monitoring all wastes covered by the permit.
i. Flow measurement. Information showing the measured average daily and maximum daily flow in gallons per day, to the POTW from regulated process streams and other streams, as necessary, to allow use of the combined wastestream formula (40 CFR 403.6(e));
j. Measurement of pollutants.
    i. If any categorical pretreatment standard is applicable, each regulated process and any new categorically regulated processes for existing sources.
    ii. The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by any city, state, or national categorical pretreatment standard or by the Wastewater Director, of regulated pollutants in the discharge from each regulated process.
    iii. Instantaneous, daily maximum and long-term average concentrations, or mass, where required, shall be reported.
    iv. Analysis of suspected TTO compounds shall be reported. If an identified TTO compound is below 0.01 mg/l, no sampling for that TTO compound will be required for the duration of the permit.
    v. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in section 98-153(b)(9) of the code. Where any pretreatment standard requires compliance with a BMP or pollution prevention alternative, the industrial user shall submit documentation as required by the Wastewater Director or the applicable pretreatment standard to determine compliance with the standard.
    vi. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in section 98-153(b)(9) of the code. Where any pretreatment standard requires compliance with a BMP or pollution prevention alternative, the industrial user shall submit documentation as required by the Wastewater Director or the applicable pretreatment standard to determine compliance with the standard.
    vii. Sampling must be performed in accordance with procedures set out in section 98-153(b) reporting requirements and 98-153(b)(10) sample collection, of the code.
    viii. Sampling must be performed in accordance with procedures set out in section 98-153(b) reporting requirements and 98-153(b)(10) sample collection, of the code.
    ix. The nature and concentration of any pollutants in the discharge which are limited by any city, state, or national categorical pretreatment standards, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional operation and maintenance and/or additional pretreatment is required for the significant user to meet applicable categorical pretreatment standards at each facility;
k. If additional pretreatment and/or operation and maintenance will be required to meet the categorical pretreatment standards, the significant user shall submit the shortest schedule by which the significant user will provide such additional treatment. The completion date in this schedule shall not be later than the compliance

date established for the applicable categorical pretreatment standard. The following conditions shall apply to this schedule:

i. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the significant user to meet the applicable categorical pretreatment standards (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.). No increment shall exceed nine months.

ii. Not later than 14 days following each date in the schedule and the final date for compliance, the significant user shall submit a report to the Wastewater Director if the significant user has not complied with the increment of progress to be made on such date, the date on which the significant user expects to comply with this increment of progress, the reason for delay, and the steps being taken by the significant user to return the construction to the schedule established.

l. Conditions. Wastewater discharge permits shall be expressly subject to all provisions of the wastewater ordinance and all other applicable regulations, user charges and fees established by the utility. Permits shall contain the following:

i. Requirements for installation and maintenance of inspection and sampling facilities and equipment, including flow measurement devices;

ii. Requirements for installation and maintenance of pretreatment facilities or technology, pollution control, or construction of appropriate containment designed to reduce, eliminate or prevent the introduction of pollutants into the POTW;

iii. Requirements for notification to the utility of any new introduction of wastewater constituents or any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater treatment system;

iv. Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the utility, and affording utility access thereto;

v. Requirements for the development and implementation of spill control plans or other special conditions including management practices necessary to adequately prevent accidental, unanticipated, or non-routine discharges per section 98-151(m); and notification of slug discharges as per section 98-153(b)(6);

vi. A statement that indicates wastewater discharge permit duration, which in no instance shall exceed five years;

vii. Effluent limits based on applicable pretreatment standards;

viii. Self-monitoring, sampling, reporting, notification, and recordkeeping requirements. These requirements shall include an identification of pollutants to be monitored, sampling location, sampling frequency, and sample type based on federal, state, and local law;

ix. A statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedule may not extend the time for compliance beyond that required by applicable federal, state, or local law; and

x. Other conditions as deemed appropriate by the utility to ensure compliance with this division.

m. Timing. Written reports will be deemed to have been submitted on the date postmarked. For reports that are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report shall govern.

All the above reports shall be signed and sworn to by a principal executive officer, or his designee as described in SECTION 3, part 15.

All reports shall be submitted to the following address:

Amanda Kaminski
Field Services Director
Racine Wastewater Utility
800 Center Street
City Hall Annex, Room 227
Racine, Wisconsin 53403

SECTION 4: GENERAL CONDITIONS

Wastewater discharge permits are subject to the provisions of Chapter 98 of the Code of General Ordinances of the City of Racine. The Industrial Discharge Permit contains key elements of the Code. The entire Code is available on the City of Racine website.

1. **PERMIT DURATION:**
Permits shall be issued for a period not to exceed five years. A significant user shall apply for permit reissuance a minimum of 90 days prior to the expiration of the user's existing permit. The terms and conditions of the permit may be subject to modifications by the utility during the term of the permit as limitations or requirements identified in section 98-151 are modified or as other just causes exist. A significant user shall be informed of any proposed changes in its permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance. All wastewater discharge permits issued to a particular user are void upon the issuance of a new wastewater discharge permit to that user. Expired discharge permits remain in effect until the new permit is issued by the utility.

2. **CONTINUATION OF EXPIRED PERMITS:**
An expired permit will continue to be effective and enforceable until the permit is reissued if:
   a. The permittee has submitted a complete permit application at least ninety (90) days prior to the expiration date of the user's existing permit.
   b. The failure to reissue the permit, prior to expiration of the previous permit, is not due to any act or failure to act on the part of the permittee.

3. **PERMIT CONDITIONS:**
   a. REISSUANCE. Permitted industrial users with an expiring permit shall apply for a wastewater discharge permit reissuance by submitting a complete permit application a minimum of 90 days prior to the expiration of the existing discharge permit.
   b. DISCHARGE PERMIT DECISION. Within 30 days of receipt of a complete wastewater discharge permit application, the Wastewater Director will determine whether or not to issue a wastewater discharge permit. The Wastewater Director will evaluate the data furnished by the user and may require additional information. The Wastewater Director may deny any application for a wastewater discharge permit.
   c. ANALYTICAL REQUIREMENTS. All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR, Part 136 and amendments thereto, unless otherwise specified in an applicable categorical pretreatment standard. If 40 CFR, Part 136 does not contain sampling or analytical techniques for the pollutant in question, sampling and analyses shall be performed in accordance with procedures approved by EPA. Where an industrial user requires compliance with a Best Management Practice or pollution prevention alternative, the user shall submit documentation as required by the POTW or the applicable standard to determine compliance.
   d. SAMPLE COLLECTION. Sampling and analysis shall be performed by all significant industrial users (categorical and non-categorical) to identify the concentration or mass of regulated pollutants in the discharge from each regulated process, according to the requirements of the applicable categorical pretreatment standard and the utility. Both daily maximum and average values shall be reported.
      - Except as indicated below, the user shall collect wastewater samples using 24-hour flow proportional composite collection techniques. In the event flow proportional sampling is not feasible, the Wastewater Director may authorize the use of time proportional sampling or grab samples where the user demonstrates that this will provide a representative sample of the effluent being discharged. Sampling requirements are documented in each individual industrial discharge permit.
      - In addition, grab samples may be required to show compliance with instantaneous discharge limits. Samples for oil and grease, temperature, pH, cyanide, phenols, sulfides, and volatile organic compounds shall be obtained using grab collection techniques. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grabs samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or the field. Composite samples for other parameters unaffected by the compositing procedures documented in approved EPA methodologies may be authorized by the utility, as appropriate.
      - For sampling required in support of baseline monitoring and 90-day compliance reports [40 CFR 403.12(b) and (d)], a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist.
      - For facilities for which historical sampling data are available, the Wastewater Director may authorize a lower minimum of one grab sample of each parameter where grab samples are required.

- For the periodic reports required by the industrial user discharge permit, the industrial user is required to collect the number of grab samples necessary (as indicated by discharge permit) to assess and assure compliance by with applicable pretreatment standards and requirements.

4. **PERMIT MODIFICATION:**

Any significant user with an existing wastewater discharge permit shall submit to the Wastewater Director within 180 days after the promulgation of an applicable national categorical pretreatment standard the information required by section 98-153(a)(4) Application. Where a significant user, subject to national categorical pretreatment standards, has not previously submitted an application for a wastewater discharge permit, the significant user shall apply for a wastewater discharge permit within 180 days after the promulgation of the applicable national categorical pretreatment standards.

The Wastewater Director may modify a wastewater discharge permit for good cause, including, but not limited to the following reasons:

a. To incorporate any new or revised federal, state, or local pretreatment standards or requirements;
b. To address significant alterations or additions to the user's operation, processes, or wastewater volume or character since the time of wastewater discharge permit issuance;
c. A change in the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge;
d. Information indicating that the permitted discharge poses a threat to the utility's POTW, personnel, or the receiving waters, or the beneficial use of treatment plant sludge;
e. Violation of any terms or conditions of the wastewater discharge permit;
f. Misrepresentations or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting;
g. Revision of or a grant of variance from categorical pretreatment standards pursuant to 40 CFR 403.13;
h. To correct typographical or other errors in the wastewater discharge permit;
i. Upon request of the user, provided such request does not create a violation of any applicable requirements, standards, laws, or rules and regulations.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

5. **REVOCATION OF WASTEWATER DISCHARGE PERMIT**

Any industrial user which violates the following conditions of this division, or applicable state and federal regulations, is subject to having its individual wastewater discharge permit revoked in accordance with the procedures of section 98-155. The Wastewater Director may revoke a wastewater discharge permit for good cause, including, but not limited to, the following reasons:

- Failure to notify the Wastewater Director of significant changes to the wastewater prior to the changed discharge;
- Failure to provide prior notification to the Wastewater Director of changed conditions pursuant to section 98-153(b)(5) of the wastewater ordinance;
- Misrepresentation or failure to fully disclose all relevant facts in the wastewater discharge permit application;
- Falsifying self-monitoring reports and certification statements;
- Is found tampering or to have tampered with sampling or flow measurement equipment, samples, and/or analyses being conducted by or at the direction of the utility. ;
- Refusing to allow the Wastewater Director timely access to the facility premises and records;
- Failure to meet effluent limitations;
- Failure to pay fines;
- Failure to pay sewer charges;
- Failure to meet compliance schedules;
- Failure to complete a wastewater survey or the wastewater discharge permit application;
- Failure to provide advance notice of the transfer of business ownership of a permitted facility;
- Violation of any pretreatment standard or requirement, or any terms of the wastewater discharge permit or this division;
- Failure of an industrial user to factually report the wastewater constituents and characteristics of its discharge;
- Failure of the industrial user to report significant changes in operations, or wastewater constituents and characteristics.
- The utility may also revoke the wastewater treatment service and/or a wastewater discharge permit when such revocation is necessary, in the opinion of the utility, in order to stop an actual or threatened discharge which presents or may present an imminent or substantial endangerment to the health or

welfare of persons, to the environment, causes interference to the POTW or causes the utility to violate any condition of its WPDES permit.

6. **APPEALS PROCEDURE:**
A user desiring to appeal regarding the wastewater discharge permit denial or conditions shall, not more than 20 days after the user receives notice of denial or receives the wastewater discharge permit with conditions, file a petition for appeal with the wastewater commission for referral to the board of standards. If the user does not file a petition for appeal within said time, the action on the wastewater discharge permit is final. In its petition, the appealing party shall indicate the wastewater discharge permit action or provisions objected to, the reasons for the objection, and the alternative conditions, if any, it seeks to place in the wastewater discharge permit. The effectiveness of the wastewater discharge permit shall not be stayed pending the appeal.

7. **PERMIT TRANSFER:**
Wastewater discharge permits are issued to a specific significant user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred or sold to a new significant user without the written permission of the Utility.

8. **UTILITY'S RIGHT OF REVISION:**
The Utility reserves the right to establish by ordinance more stringent limitations or requirements on discharges to the POTW if deemed necessary to comply with the objectives presented in Section 98-150 of the Racine wastewater ordinance.

9. **VIOLATIONS**
Any violation of the terms and conditions of a wastewater discharge permit shall be deemed a violation of the wastewater ordinance and subjects the wastewater discharge permittee to the sanctions set out in the ordinance. Obtaining a wastewater discharge permit does not relieve a permittee of its obligation to comply with all federal and state pretreatment standards or requirements or with any other requirements of state, federal, and local law.

10. **MONITORING FACILITIES:**
The industrial user is required to provide and operate at its own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the building sewer and/or internal drainage systems. The monitoring facility should be situated on the industrial user's premises, but, when such a location would be impractical or cause undue hardship on the industrial user, the facility may be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles and comply with Wis. Stats. § 66.0425. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility shall be maintained at all times in a safe and proper operating condition at the expense of the industrial user. Whether conducted on public or private property, the sampling and monitoring facilities shall be provided in accordance with the utility's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the utility, unless a time extension is otherwise granted by the utility.

11. **CHOICE OF MONITORING LOCATION:**
Where a treated regulated process waste stream is combined prior to treatment with wastewaters other than those generated by the regulated process, monitoring of either the segregated process waste stream or the combined waste stream for the purpose of determining compliance with applicable Pretreatment Standards is allowed. If monitoring the segregated process waste stream, the applicable categorical Pretreatment Standard will apply. If monitoring the combined waste stream, an alternative discharge limit calculated using the combined wastestream formula will apply.
Monitoring points may change only after receiving approval from the Racine Wastewater Utility.

12. **INSPECTION AND SAMPLING:**
The utility shall inspect the facilities of any industrial user to ascertain whether the purpose of Chapter 98 is being met and all requirements are being complied with. Persons or occupants or premises where wastewater is created or discharged shall allow the utility or their representative ready access at all reasonable times to all parts of the premises for the purposes of inspection, sampling, records examination, or in the performance of any of their duties. The utility, DNR, and EPA shall have the right to set up on the industrial user's property such devices as are necessary to conduct sampling inspection, compliance monitoring, and/or metering operations; as well as facility and documentation inspection to assess compliance with Best Management Practices, including, but not limited to, mercury reduction, kitchen FOG management, and vehicle service fluid and vehicle wash management. Where an industrial or commercial user has security measures in force which would require proper identification and clearance before entry into their premises, the industrial or commercial user shall make necessary arrangements

with its security guards so that upon presentation of suitable identification, personnel from the utility, DNR, and EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

a. The Wastewater Director shall have the right to set up on the user's property, or require installation of, such devices as are necessary to conduct sampling and/or metering of the user's operations.
b. The Wastewater Director may require the user to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the user at its own expense. All devices used to measure wastewater flow and quality shall be calibrated to ensure their accuracy.
c. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall promptly be removed by the user at the written or verbal request of the Wastewater Director and shall not be replaced. The costs of clearing such access shall be born by the user.
d. Unreasonable delays in allowing the Wastewater Director access to the user's premises shall be a violation of this division.
e. Monitoring points may change only after receiving written approval from the Wastewater Director.

13. SPECIAL INSPECTION WARRANTS:

If the Wastewater Director has been refused access to a building, structure, or property, or any part thereof, and is able to demonstrate probable cause to believe that there may be a violation of this division, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this division or any permit or order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the Wastewater Director may seek issuance of a special inspection warrant from an appropriate court.

12. CHANGE IN FLOW AND WASTEWATER CHARACTERISTICS:

The permittee shall inform the Racine Wastewater Utility at least 90 days before the initiation of any new introduction of wastewater constituents or any substantial change in the volume (+ or – 20%) or character of the wastewater constituents being introduced into the Racine POTW.

13. BYPASS OF TREATMENT FACILITIES:

Bypass means the intentional diversion of wastestreams from any portion of the user's treatment facility

Bypass is prohibited unless it is unavoidable to prevent loss of life, personal injury, or severe property damage or there are no feasible alternatives; and

The permittee may allow bypass to occur which does not cause effluent limitations to be exceeded, but only if it is also for essential maintenance to assure efficient operation;

NOTIFICATION OF BYPASS:

a. Anticipated bypass. If the permittee knows in advance of the need for bypass, it shall submit prior written notice, at least ten days before the date of the bypass, to the wastewater utility.
b. Unanticipated bypass. The permittee shall submit oral notice within 24 hours from the time the user becomes aware of the bypass to the wastewater utility and submit a written notice to the utility within five days. This report shall specify:
    i. A description of the bypass and its cause, including its duration, including exact dates and times;
    ii. Whether the bypass has been corrected, and, if the bypass has not been corrected, the anticipated time it is expected to continue, and
    iii. The steps being taken or to be taken to reduce, eliminate and prevent a reoccurrence of the bypass.
    iv. The Wastewater Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

14. EXCESSIVE DISCHARGE (DILUTION):

No user shall ever increase the use of process or potable water or attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the categorical pretreatment standards or this division. The Wastewater Director may impose mass limitations on users that are using dilution to meet applicable pretreatment standards or requirements or in other cases when the imposition of mass limitations is appropriate. Mass limit determination shall be in accordance with Chapter 98-151(d)b.

15. PRETREATMENT:

Users shall provide wastewater treatment as necessary to comply with the wastewater ordinance and shall achieve compliance with all categorical pretreatment standards, local limits, and the prohibitions set out in section 98-151 of the wastewater ordinance within the time limitations specified by EPA, the state, or the Wastewater Director, whichever is more stringent. Any facilities necessary for compliance shall be provided, operated, and maintained at

the user's expense. Detailed plans describing such facilities and operating procedures shall be submitted to the WDNR and Wastewater Director for review, and shall be acceptable to the WDNR and Wastewater Director before such facilities are constructed. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying such facilities as necessary to produce a discharge acceptable to the utility under the provisions of this division. No person shall do such work that is within the purview of the city building, plumbing or electrical code without first obtaining required permits.

16. **COMPLIANCE WITH APPLICABLE PRETREATMENT STANDARDS AND REQUIREMENTS:**
Compliance with this permit does not relieve the permittee from its obligations regarding compliance with any and all applicable local, state and federal pretreatment standards and requirements including any such standards or requirements that may become effective during the term of this permit.

17. **SLUDGES GENERATED:**
Sludges, floatables, skimmings, etc., generated by an industrial or commercial pretreatment system shall not be placed into the wastewater works. Such sludges shall be contained, transported, and disposed of by haulers in accordance with all federal, state and local regulations.

18. **POTW INTERFERENCE:**
No user shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which causes pass-through or will interfere with the operations or performance of the wastewater works. These general prohibitions apply to all such users of the wastewater works whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.

19. **FALSIFYING INFORMATION:**
The permittee shall not make any false statements, representation or certification on any application, record, report, plan, or other document filed or required to be maintained pursuant to Chapter 98 of the Code of General Ordinances, or wastewater discharge permit. The permittee shall not falsify, tamper with or knowingly render inaccurate any monitoring device or methods required by Chapter 98.

20. **CONFIDENTIAL INFORMATION:**
Information and data concerning a user which may be obtained from reports, surveys, wastewater discharge permit applications, wastewater discharge permits, and monitoring programs, and from the Wastewater Director's inspection and sampling activities, shall be available to the public without restriction, unless the user specifically requests, and is able to demonstrate to the satisfaction of the Wastewater Director, that the release of such information would divulge information, processes, or methods of production entitled to protection as trade secrets under applicable state law. Any such request must be asserted at the time of submission of the information or data. When requested and demonstrated by the user that such information should be held confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public, but shall be made available immediately upon request to governmental agencies for uses related to the WPDES program or pretreatment program, and in enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics and other "effluent data" as defined by 40 CFR 2.302 will not be recognized as confidential information and will be available to the public without restriction.

21. **SEVERABILITY:**
If any provision, paragraph, word, section or article of Chapter 98 is invalidated by any court of competent jurisdiction, the remaining provision, paragraphs, words, sections, and chapters shall not be affected and shall continue in full force and effect.

22. **ENFORCEMENT**

a. Notice of noncompliance. Whenever the utility finds that any industrial user has violated or is violating this division, wastewater discharge permit, or any prohibition, limitation or requirements contained here, including required Best Management Practices, the utility shall issue the permittee a "notice of noncompliance" for violations, except where serious noncompliance justifies immediate issuance of a notice of violation. The notice of noncompliance will explain the nature of the noncompliance and require that the permittee, within 45 days of the date of notice, file a plan for the correction of the noncompliance. The plan shall be reviewed by the utility and approved if the plan demonstrates that the proposed action will eliminate the violation. If the industrial user does not comply with an approved plan, the utility may take action in accordance with section 98-155.

b. Notice of violation. Whenever the utility finds that any industrial user has violated, continues to violate, or is violating this division, wastewater discharge permit, or any prohibition, limitation or requirements contained herein, including required Best Management Practices, the utility may serve upon such user a written notice of violation stating the nature of the violation. Within 45 days of the date of the notice, a plan for the satisfactory correction thereof shall be submitted to the utility by the industrial user. If the plan is satisfactory

to the utility and the industrial user complies with the plan, the utility may not take further action against the industrial user. Submission of this plan in no way relieves the user of liability for any violations occurring before or after the receipt of the "notice of violation." Nothing in this section shall limit the authority of the Wastewater Director to take any action, including emergency actions or any other enforcement action, without first issuing a notice of violation.

c. Show cause hearing.

i. Notice of hearing. The utility may order a user which has violated, or continues to violate, any provision of this ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other pretreatment standard or requirement, or allows an unauthorized discharge to enter the wastewater works to show cause before the board of standards why the proposed enforcement action should not be taken. A notice shall be served on the industrial user specifying the time and place of a hearing to be held by the board of standards regarding the violation, the reasons why the action is to be taken, the proposed enforcement action, and directing the industrial user to show cause before the board of standards why the proposed enforcement action should not be taken. The notice of the hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten days before the hearing. The notice of the hearing may be served on any agent or officer of a corporation.

ii. Hearing officials. The board of standards may itself conduct the hearing and take evidence, or may designate any of its members or any officer or employee of the utility to:

- Issue in the name of the board of standards notices of hearings requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;
- Take evidence;
- Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the board of standards for action thereon.

iii. Transcripts. At any hearing held pursuant to this division, testimony taken must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof.

d. Issuance of orders. After the board of standards has reviewed the evidence, it shall make a recommendation to the utility. Further orders and directives as are necessary and appropriate may be issued by the utility, including, but not limited to, a compliance order, a consent order, a cease and desist order, or other action as deemed necessary and appropriate. If the user violates an order or directive, the utility may take action in accordance with section 98-155.

The remedies provided for in this ordinance are not exclusive. The Wastewater Director may take any, all, or any combination of these actions against a noncompliant user. Enforcement of pretreatment violations will generally be in accordance with the utility's enforcement response plan. However, the Wastewater Director may take other action against any user when the circumstances warrant. Further, the Wastewater Director is empowered to take more than one enforcement action against any noncompliant user.

i. Consent orders. The Wastewater Director may enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with any user responsible for noncompliance. Such documents will include specific action to be taken by the user to correct the noncompliance within a time period specified by the document. Such documents shall have the same force and effect as the administrative orders and shall be judicially enforceable.

ii. Compliance orders. When the Wastewater Director finds that a user has violated, or continues to violate, any provision of this division, an individual wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, the Wastewater Director may issue an order to the user responsible for the discharge directing that the user come into compliance within a specified time. If the user does not come into compliance within the time provided, sewer service may be discontinued unless adequate treatment facilities, devices, or other related appurtenances are installed and properly operated. Compliance orders also may contain other requirements to address the noncompliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the sewer. A compliance order may not extend the deadline for compliance established for a pretreatment standard or requirement, nor does a compliance order relieve the user of liability for any violation, including any continuing violation. Issuance of a compliance order shall not be a bar against, or a prerequisite for, taking any other action against the user.

iii. Cease and desist orders. When the Wastewater Director finds that a user has violated, or continues to violate, any provision of this division, an individual wastewater discharge permit or order issued hereunder, or any other pretreatment standard or requirement, or that the user's past violations are

likely to recur, the Wastewater Director may issue an order to the user directing it to cease and desist all such violations and directing the user to:

- Immediately comply with all requirements; and
- Take such appropriate remedial or preventative action as may be needed to properly address a continuing or threatened violation, including halting operations and/or terminating the discharge.

Issuance of a cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the user.

23. SIGNIFICANT NONCOMPLIANCE/ANNUAL PUBLICATION:

The Wastewater Director shall publish annually, in a newspaper of general circulation that provides meaningful public notice in the area serviced by the utility, a list of users which, at any time during the previous 12 months, were in significant noncompliance with applicable pretreatment standards and requirements. Significant noncompliance means:

a. Chronic violations of wastewater discharge limits, defined here as those in which 66 percent or more of wastewater measurements taken during a six-month period exceed the daily maximum limit or average limit for the same pollutant parameter by any amount including an instantaneous limit
b. Technical Review Criteria (TRC) violations, defined here as those in which 33 percent or more of wastewater measurements taken for each pollutant parameter during a six-month period equals or exceeds the product of the daily maximum limit or the average limit, including an instantaneous limit, multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH; or exceed a pH limit by 0.4 standard units.)
c. Any other discharge violation that the Wastewater Director believes has caused, alone or in combination with other discharges, interference or pass-through, including endangering the health of POTW personnel or the general public because of a violation of a pretreatment standard or requirement
d. Any discharge of pollutant that has caused imminent endangerment to the public or to the environment, or has resulted in the Wastewater Director's exercise of its emergency authority to halt or prevent such a discharge;
e. Failure to meet, within 90 days of the scheduled date, a compliance schedule milestone contained in a wastewater discharge permit, compliance schedule or enforcement order for starting construction, completing construction, or attaining final compliance
f. Failure to provide within 45 days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical pretreatment standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules
g. Failure to accurately report noncompliance
h. Any other violation(s) that the Wastewater Director determines will adversely affect the operation or implementation of the local pretreatment program, including violation of best management practices.

24. EMERGENCY SUSPENSIONS

The Wastewater Director may immediately suspend a user's discharge, after informal notice to the user, whenever such suspension is necessary to stop an actual or threatened discharge which reasonably appears to present or cause an imminent or substantial endangerment to the health or welfare of persons. The Wastewater Director may also immediately suspend a user's discharge, after notice and opportunity to respond, that threatens to interfere with the operation of the wastewater works, or which presents, or may present, an endangerment to the environment.

a. Any industrial user notified of a suspension of the wastewater treatment service and/or the wastewater discharge permit shall immediately stop or eliminate the contribution. In the event of a failure of the industrial user to comply voluntarily with the suspension order, the utility shall take such steps as deemed necessary including immediate severance of the sewer connection, to prevent or minimize damage to the wastewater works or endangerment to any individuals. The utility may reinstate the wastewater discharge permit and/or the wastewater treatment service upon proof of the elimination of the noncomplying discharge.
b. A user that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement, describing the causes of the harmful contribution and the measures taken to prevent any future occurrence, to the Wastewater Director prior to the date of any show cause or termination hearing.

Nothing in this section shall be interpreted as requiring a hearing prior to any emergency suspension under this section.

25. TERMINATION OF DISCHARGE:

Any user which violates the following conditions is subject to termination of discharge privileges:

- Violation of individual wastewater discharge permit conditions;

- Failure to accurately report the wastewater constituents and characteristics of its discharge;
- Failure to report significant changes in operations or wastewater volume, constituents, and characteristics prior to discharge;
- Refusal of reasonable access to the user's premises for the purpose of inspection, monitoring, or sampling; or
- Violation of the pretreatment standards.

Such user will be notified of the proposed termination of its discharge and be offered an opportunity to show cause why the proposed action should not be taken. Exercise of this option by the Wastewater Director shall not be a bar to, or a prerequisite for, taking any other action against the user.

26. LEGAL ACTION

If any industrial user discharges sewage, industrial wastes or other wastes into the utility's wastewater works contrary to the provisions of this division, federal or state pretreatment requirements, or any order of the utility, the utility may commence an action for appropriate legal and/or equitable relief in the appropriate court. The utility may take further action pursuant to section 98-155 and/or section 98-156.

27. CIVIL AND CRIMINAL LIABILITY:

The Department of Natural Resources may seek civil and criminal penalties and injunctive relief from an industrial user or POTW, as necessary, if the WDNR deems that the POTW enforcement actions are insufficient [NR 211.32(2)].

28. PENALTIES, COSTS AND ACTIONS:

a. CIVIL PENALTIES. An industrial user which is found to have violated an order of the board of standards or which willfully or negligently failed to comply with any provision of the wastewater ordinance or any orders, rules, regulations or permits issued hereunder, shall forfeit civil or criminal penalties in at least the amount of $1,000.00 per day for each violation, plus costs for each offense. Each permit limit violation shall be considered a separate and distinct violation. Each day on which a violation shall occur or continue shall be deemed a separate and distinct offense. [NR 211.22(8)]

b. COSTS OF DAMAGE. An industrial user violating any division of the wastewater ordinance or which has a discharge that causes a deposit, obstruction, damage or other impairment to the wastewater works shall become liable to the utility for any expense, loss, or damage caused by the violation or discharge. The utility may add to the industrial user's charges and fees the costs assessed for any cleaning, repair, or replacement work caused by the violation or discharge. Failure to pay the assessed costs shall constitute a violation of this division.

c. FALSIFYING INFORMATION. Any person who knowingly makes any false statements, representation or certification on any application, record, report, plan or other document filed or required to be maintained pursuant to the wastewater ordinance, or wastewater discharge permit, or falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required under this division, shall, upon conviction, be punished by a forfeiture of not more than $1,000.00 per occurrence, plus court costs.

d. PENALTY ESCALATION. Unpaid charges shall, after 30 calendar days, be assessed an additional penalty of ten percent of the unpaid balance. Additional penalties, up to and including termination of sewer service, shall apply for continued unpaid fees or charges, or continued pretreatment program noncompliance, in accordance with the utility Enforcement Response Plan, as approved by the wastewater commission.

29. FEES:

a. The wastewater ordinance shall provide for the recovery of necessary costs from the users of the utility's POTW for the implementation of the programs established herein. The applicable charges or fees shall be set forth in the utility's schedule of charges and fees, to be prepared from time to time, by the Wastewater Director and approved by the wastewater commission. These fees relate solely to matters covered by this division and are separate from all other fees chargeable by the utility.

b. Charges and fees. The utility may adopt charges and fees that may include:

   i. Permit fee. The utility will charge an annual permit fee. Permit fees include the costs of processing applications, slug discharge plans, solvent management plans, inspections, reviewing monitoring reports and certification statements, responding to non-compliance issues and preparing semi-annual and annual reports to the WDNR. Permit fees are calculated and based upon categorical status, flow and compliance of a permitted user.

   ii. Sampling charge. The utility will assess a sampling charge for sampling a user's wastewater with utility equipment and manpower.

   iii. Laboratory analysis charge. The utility will assess a laboratory analysis charge to recover the utility's expenses to have the industrial wastewater samples analyzed for specific pollutants under categorical pretreatment standards or where specifically regulated by the utility.

c. Additional charges. Additional costs will be charged to industrial users on a case by case basis for the following items:
   i. Fees for filing appeals;
   ii. Fees for consistent removal (by the utility) of pollutants otherwise subject to categorical pretreatment standards where this is an additional cost to the utility; and
   iii. Other fees as the utility may deem necessary to carry out the requirements contained herein where there is an additional cost to the utility.

30. RECOVERY OF COSTS INCURRED:

In addition to civil and criminal liability, the permittee violating any of the provisions of this permit or ordinance or causing damage to or otherwise inhibiting the Racine Wastewater Utility shall become liable to the Utility for any expense, loss, or damage caused by such violation or discharge. The Racine Wastewater Utility may add to the industrial user's charges and fees the costs assessed for any cleaning, or repair, or replacement work caused by the violation or discharge. Refusal to pay the assessed costs shall constitute a separate violation of Racine's Wastewater Control Ordinance.

SECTION 5: GENERAL DISCHARGE PROHIBITIONS

Sec. 98-151. General Sewer Use Requirements.

1. *General discharge prohibitions.* No user shall contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which causes pass-through or will interfere with the operations or performance of the wastewater works. These general prohibitions apply to all such users of the wastewater works whether or not the user is subject to national categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.
2. *Specific discharge prohibitions.* A user may not contribute the following pollutants or substances to the wastewater works:
   (1) Any liquids, solids, or gases which by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the POTW or to the operation of the POTW. At no time shall two successive readings on an explosion hazard meter, at the point of discharge into the system (or at any point in the system), be more than 15 percent nor any single reading over 30 percent of the lower explosive limit (LEL) of the meter for that specific chemical. In addition, pollutants which create a fire or explosive hazard in the POTW, including but not limited to, wastestreams with a closed cup flash point of less than 140 degrees Fahrenheit (60 degrees Celsius) using the test methods specified in 40 CFR 261.21. Prohibited materials include, but are not limited to, gasoline, kerosene, naphtha, benzene, toluene, xylene, ethers, alcohols, ketones, aldehydes, peroxides, chlorates, perchlorates, bromates, carbides, hydrides, and sulfides and any other substances which the utility, the state, or EPA has notified the user is a fire hazard or a hazard to the system;

   (2) Solid or viscous substances which may cause obstruction to the flow in a sewer, but in no case solids greater than one (1) inch in any dimension or create interference with the operation of the wastewater treatment facilities or wastewater collection system such as, but not limited to: articles with sufficient dimensions or quantity either alone or in combination with other particles to obstruct the wastewater flow, , bones, hair, , whole blood, , ashes, cinders, sand, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, disposable diapers, paper hand towels, wipes, rags, cloth towels, clothing articles, , waste paper, wood, plastics, gas, tar, asphalt residues, residues from refining or processing of fuel or lubricating oil, construction materials, mud, or glass grinding residues, or polishing waste residues;

   (3) Any wastewater entering the municipal sanitary sewer system having a pH less than 5.0, or wastewater having any other corrosive property capable of causing damage or hazard to structures, equipment, and/or personnel of the POTW;

   (4) Any wastewater entering the municipal sanitary sewer system having a pH in excess of 10.0;

   (5) Pollutants, including oxygen-demanding pollutants (BOD, etc.), released in a discharge at a flow rate and/or pollutant concentration which, either singly or by interaction with other pollutants will cause interference with the POTW and/or which would constitute a slug;

   (6) Petroleum oil, nonbiodegradeable cutting oil, or products of mineral oil origin, in amounts that will cause interference or pass-through;

   (7) Trucked or hauled pollutants, except at the wastewater treatment plant discharge point, under permit as listed in section 98-151(n);

   (8) Any wastewater containing toxic pollutants in sufficient quantity, either singly or by interaction with other pollutants, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters of the POTW, or to exceed the limitation set forth in categorical pretreatment standard. A toxic pollutant shall include but not be limited to any pollutant identified pursuant to section 307(a) of the Act;

   (9) Any noxious or malodorous liquids, gases, or solids, which either singly or by interaction with other wastes are sufficient to create a public nuisance or hazard to life or are sufficient to prevent entry into the sewers for maintenance and repair;

   (10) Any substance which may cause the POTW's effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria, guidelines or regulations developed under section 405 of the Act; any criteria, guidelines, or regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Clean Air

Act, the Toxic Substances Control Act, or state or local criteria applicable to the sludge management method being used;

(11) Any substance which will cause the utility to violate its WPDES permit or the receiving water quality standards; Wastewater causing, alone or in conjunction with other sources, the treatment plant's effluent to fail a Whole Effluent Toxicity test;

(12) Any wastewater with objectionable color not removed in the treatment process, such as, but not limited to, ink residues, paint residues, dye wastes and vegetable tanning solutions;

(13) Any wastewater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference, but in no case wastewater with a temperature which is lower than 32 degrees Fahrenheit (0 degrees Celsius) at discharge point from the source to the sanitary sewer system. The temperature shall not exceed 104 degrees Fahrenheit (40 degrees Celsius) at the POTW wastewater treatment plant;

(14) Any unpolluted water including, but not limited to, cooling water, storm water, or groundwater;

(15) Wastewater containing inert suspended solids (such as, but not limited to, Fullers earth, lime slurries, and lime residues) or dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate) in such quantities that they would cause interference with the wastewater disposal system;

(16) Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established in compliance with applicable state or federal regulations;

(17) Any wastewater which causes a hazard to human life or creates a public nuisance;

(18) Sludges, screenings or other residues from the pretreatment of industrial wastes;

(19) Medical wastes, except as specifically authorized by the Wastewater Director in a wastewater discharge permit; and

(20) Detergents, surface-active agents, or other substances which may cause excessive foaming in the POTW.

Pollutants, substances or wastewater prohibited by this section shall not be processed or stored in such a manner that they could be discharged to the POTW.

When the Wastewater Director determines that a user is contributing to the POTW, any of the substances enumerated above in such amounts as to interfere with the operation of the POTW, the Wastewater Director shall:

(1) Notify user.

(2) Develop effluent limits, if possible, for such user(s) to correct the interference with the POTW.

(3) Take immediate action if necessary to eliminate interference.

Appendix A.3
Kestrel Hawk Landfill (Lic# 0572) – Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b), and (c) of the December 15, 2004 Stipulation and Order for Judgement December 28, 2005

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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December 28, 2005

FID # 252076990
SW/Approvals

Mr. Daniel Otzelberger, P.E.
Republic Services - Kestrel Hawk Recycling and Disposal Facility (RDF)
1989 Oakes Road
Racine, WI 53406

SUBJECT: Kestrel Hawk Landfill (Lic#: 0572) - Hazardous Waste Site Leachate Head Level Plan Modification Request and Conditions 1(a), (b) and (c) of the December 15, 2004 Stipulation and Order For Judgment

Dear Mr. Otzelberger:

We have completed our review of your report dated October 10, 2005 entitled " Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin" and your plan modification request dated October 8, 2005/October 10, 2005 to modify conditions 12, 18 and 19 of the March 12, 1991 plan of operation modification approval for the Kestrel Hawk Landfill.

With the submittal of your October 10, 2005 report detailing the hydrogeologic and leachate head level investigation that Republic Services, Inc. conducted in 2004 for the Hazardous Waste Unit at the Kestrel Hawk Landfill, the Department considers condition 1(a) of the December 15, 2004 Stipulation and Order For Judgment to be fulfilled.

Additionally, with the submittal of Republic's December 28, 2004 report containing monitoring point survey data and flow meter calibration verification, the Department considers conditions 1(b) and 1(c) of the December 15, 2005 stipulation to be fulfilled.

At this time nothing is required under 1(d) and therefore quarterly reporting under 1(e) for 1(d) is not required. If in the future remedial or corrective action is required under 1(d), the plan modification can impose any necessary quarterly reporting requirement.

Likewise the Department considers Notice of Violation (NOV) item #4 and Areas of Concern #96 and #97 in the February 25, 2003 NOV to be resolved.

After review and careful consideration of Republic's request to modify conditions 12, 18 and 19 of the March 12, 1991 approval the Department has determined that it is the best interest of human health and the environment to not remove or modify condition 18.

The Department has determined that condition 12 should be part of the overall monitoring and annual reporting approval for the landfill and therefore have modified the Department's conditional November 10, 2004 Environmental Monitoring and Annual Reporting Approval to include condition 12. Enclosed is a plan modification approval which incorporates condition 12 into the environmental monitoring and annual reporting requirements for the site.

The Department has also determined that condition 19 may be appended to in order to provide a clearer

understanding of what is expected regarding leachate removal with the existing leachate extraction system. Therefore the Department has determined that it is appropriate to observe the behavior of the current system with the upgrades to maintenance, which Republic started in the last 2 years.

As was proposed in Republic's October 10, 2005 plan modification request, the revised environmental monitoring and annual reporting approval requires an evaluation in 2010 by Republic to be submitted with the annual report, to evaluate the effectiveness of the current leachate extraction system. It is the Department's opinion that, if leachate levels do not change much in the next 5 years, another action may be necessary in addition to the existing leachate extraction system in order to protect the environment near the site. Information obtained in the 5-year report will be used to help determine if the more extensive measures are necessary.

This plan of operation modification approval contains two conditions which will need to be followed. The first condition appends to condition 19 of the Department's March 12, 1991 plan of operation modification approval and the second condition requires Republic Services, Inc. to remove the PCB oil product in those leachate extractions wells which contain oil product.

Additionally, as called out by Republic in the October 10, 2005 plan modification request, four leachate headwells in corridors 4, 5 and 6 will need to be installed.

The Department greatly appreciates the work and effort put forth by Republic Services, Inc. in the last 2 years to evaluate the current hydrogeologic and leachate head level conditions at the site, and Republic's improved commitment to adequately maintain the gas and leachate removal equipment and monitoring devices at the site.

If you have any questions, please feel free to call Joe Lourigan, Hydrogeologist, at (262) 884-2347.

Sincerely,

Frances M. Koonce

Frances M. Koonce
Supervisor – Waste Management Program
WDNR Southeast Region

c. Mr. Phil Peterson, Attorney - DOJ
John Oswald, RMT
Joe Lourigan, WA/Sturtevant

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
PLAN OF OPERATION MODIFICATION
HAZARDOUS WASTE UNIT – LEACHATE HEAD LEVEL PERFORMANCE
FOR THE KESTREL HAWK LANDFILL
LICENSE # 00572
FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. owns and operates the Kestrel Hawk Landfill (formerly owned by USA Waste Services and known as the Land Reclamation Company Landfill or LRC Landfill), a solid and hazardous waste disposal facility located in the N1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin.

2. On December 19, 1984 the Department issued a conditional Plan of Operation Approval for the facility with subsequent modifications.

3. On August 30, 1996 the Department issued a conditional plan of operation for the expanded Kestrel Hawk Landfill, referred to as the Kestrel Hawk Park Northwest Expansion Landfill, with subsequent modifications.

4. On March 12, 1991 the Department issued a conditional plan of operation modification approval to the Kestrel Hawk Landfill (formerly Land Reclamation Company Landfill or LRC Landfill) for the Gas and Leachate Extraction System, entitled "Modification to the Plan of Operation Approval For Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572., Racine, WI, WID: 076171008".

   a. Condition #18 of the March 12, 1991 approval states the following:

      Should the Department determine at a later date that the vertical leachate extraction system is not reducing leachate head levels at an acceptable rate or is otherwise not operating effectively, LRC shall supplement this system or implement an alternative system as directed by the Department.

   b. Condition #19 of the March 12, 1991 approval states the following:

      LRC shall remove leachate from all portions of the LRC landfill to the greatest extent possible on a seven day per week basis. No consideration shall be given to previously set leachate head maintenance levels.

5. On October 11, 2005 the Department received a plan of operation modification request from Republic Services, Inc., dated October 10, 2005, which is requesting to remove conditions 12, 18 and 19 in the Department's March 12, 1991 Plan Modification Approval; and replace the conditions with other performance measures and commitments as described in the plan modification request.

6. On February 14, 2005 the Department received a letter dated February 10, 2005 from Republic Services, Inc. which reported PCB concentrations in leachate samples collected from manhole 15B and attributes the PCB concentrations possibly from free PCB oil product found in LGW-3 02.

7. The Department's area of concern #83 in the February 25, 2003 Notice of Violation (NOV) identified other instances when PCBs were detected in leachate samples collected from the Kestrel Hawk Landfill.

8. Other documents or information which are directly related to the October 10, 2005 plan of operation modification request and were reviewed by the Department for this approval include the following:

   a. a report dated October 26, 2005 and received by the Department on October 27, 2005 prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled "Plan Modification Request for Old Site Leachate Extraction System, Additional Requested Information, Kestrel Hawk Recycling and Disposal Facility – Racine, Wisconsin, License No. 00572";

   b. a bound report with plan sheets dated October 10, 2005 and received by the Department on October 11, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   c. a memorandum dated and received by the Department on September 20, 2005 by e-mail, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled " Working Copy – Proposed Revisions to ' Plan Modification Request For Old Site Leachate Extraction System' ";

   d. a plan modification request dated and received by the Department on June 22, 2005 by e-mail, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled "Working Copy – Plan Modification Request For Old Site Leachate Extraction System, Kestrel Hawk Recycling and Disposal Facility, Racine, Wisconsin, License No. 00572";

   e. a meeting on May 26, 2005 with Republic Services, Inc., RMT, Inc. and the Department to discuss the May 20, 2005 bound report prepared by RMT, Inc., entitled "Working Copy - Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   f. a bound report with plan sheets dated May 20, 2005 and received by the Department on May 23, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Working Copy - Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin";

   g. a conference call on March 9, 2005 between Republic Services, Inc. staff (Michael Schaffer, Robert Vallis and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone, John Oswald, Tom Silverman) and Department staff (Joe Lourigan and Chris Carlson) to discuss the February, 2005 report prepared by RMT entitled "Phase I Summary, Old Site Hydrogeologic Evaluation, Kestrel Hawk Landfill";

   h. a bound report with plan sheets dated February, 2005 and received by the Department on February 23, 2005, prepared by RMT, Inc. on behalf of Republic Services, Inc., and entitled "Phase I Summary, Old Site Hydrogeologic Evaluation, Kestrel Hawk Landfill";

   i. a conference call on October 21, 2004 between Republic Services, Inc. staff (Michael Ettner, Robert Vallis and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone, John Oswald) and Department staff (Joe Lourigan and Chris Carlson) to discuss observations from the drilling of nested leachate headwells LHW-401 and LHW-402;

   j. field observations by Joe Lourigan, Department Hydrogeologist, on October 11, 2004 to observe the drilling of nested leachate headwell LHW-402 in the old Hazardous Waste Unit at the Kestrel Hawk Landfill;

k. field observations by Joe Lourigan, Department Hydrogeologist, on October 6, 2004 to observe the drilling of nested leachate headwell LHW-401 in the old Hazardous Waste Unit at the Kestrel Hawk Landfill;

l. a discussion on September 23, 2004 between RMT, Inc. staff (Galen Kenoyer and Joel Schittone) and Department staff (Joe Lourigan and Chris Carlson) regarding the plan for nested leachate headwell construction;

m. a technical memorandum dated September 15, 2004 and received by the Department on September 16, 2004, prepared by RMT, Inc. on behalf of Republic Services, Inc., entitled " Plan For Kestrel Hawk FieldWork – Well Locations, Schedule";

n. a bound report dated June 21, 2004 and received by the Department on June 22, 2004, submitted by Republic Services, Inc., and entitled " Old Site Hydrogeologic Evaluation Workplan – Addendum No. 1, Kestrel Hawk Landfill, Racine, Wisconsin";

o. a conference call on May 21, 2004 between Republic Services, Inc. staff (Michael Ettner, and Daniel Otzelberger); RMT, Inc. staff (Galen Kenoyer, Joel Schittone and John Oswald) and Department staff (Joe Lourigan and Chris Carlson) to discuss revised Hydrogeologic Evaluation Workplan, dated May 7, 2004;

p. a document dated May 7, 2004 and received on May 11, 2004 by the Department, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Old Site Hydrogeologic Evaluation Workplan (Revised), Kestrel Hawk Landfill, Racine Wisconsin";

q. a meeting on March 23, 2004 with Republic Services, Inc., RMT, Inc. and the Department to discuss the February 13, 2004 proposed workplan for the Hydrogeologic Evaluation at the Old Site (Hazardous Waste Unit) for the Kestrel Hawk Landfill;

r. a document dated February 13, 2004 and received by the Department on February 16, 2004, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Working Copy Workplan for a Hydrogeologic Evaluation at the Old Site (Hazardous Waste Unit) Kestrel Hawk Recycling and Disposal Facility, Racine, Wisconsin", and;

s. the Department's March 12, 1991 conditional plan of operation modification approval to the Kestrel Hawk Landfill (formerly Land Reclamation Company Landfill) for the Gas and Leachate Extraction System.

9. Other information reviewed by the Department for this approval include the document identified in finding of fact (FOF) #6 and information identified in FOF #7 above and documents contained in the Department's file for the Kestrel Hawk RDF Facility under Facility Identification Number (FID#) 252076990.

10. The Department received payment of the $1,650 plan review fee as required in ch. NR 520, Wis. Adm. Code on July 18, 2005.

11. The special conditions set forth below are needed to assure compliance with chapters NR 500-538 and NR 600 series, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-538 and the NR 600 series, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm.. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with chs. NR 500-538 and the chs. NR 600 series, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. 289, Stats., to issue the following plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The Department has determined that it is in the best interest for human health and the environment not to remove or modify condition number 18 of the Department's conditional March 12, 1991 Plan of Operation Modification entitled "Modification to the Plan of Operation Approval For Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572., Racine, WI, WID: 076171008". Therefore Republic Services Inc.'s request to modify condition #18 of the Department's March 12, 1991 conditional plan of operation modification approval is not approved.

The Department has determined that Republic Services, Inc. has effectively demonstrated a need to establish some standards for evaluating leachate removal using the existing leachate extraction system at the Kestrel Hawk Landfill Hazardous Waste Unit (corridors 1-6) and to establish what consideration shall be given in determining leachate head maintenance levels for condition number 19 of the Department's March 12, 1991 conditional plan of operation modification approval.

Therefore the Department hereby approves a plan of operation modification for the management of leachate head levels in the hazardous waste unit (corridors 1-6) for the Kestrel Hawk Landfill (Lic#: 0572) subject to chs. NR 500 and NR 600, Wis. Adm. Code and the following conditions:

1. Condition number 19, of the Department's March 12, 1991 conditional plan of operation modification approval shall be appended with the following: As described in Republic's October 10, 2005 Plan of of Operation Modification Request, the demonstration of removal of leachate shall include, at a minimum:

   a. the following four compliance criteria (i-iv):

      i. an area weighted average long-term head evaluation

      which shall maintain decreasing head levels across the site on an area weighted average as indicated by the slope of the least-square trend line.

      ii. an individual leachate headwell long-term evaluation

      which shall maintain decreasing heads as indicated by the slope of the least-square trend line for the eight point moving average in the long-term trend analyses in 75 percent of the leachate headwells.

iii. an individual leachate headwell short-term evaluation

which shall maintain decreasing heads as indicated by the slope of the least-square trend line in the short-term trend analyses in 67 percent of the leachate headwells.

iv. an inflow versus outflow evaluation

which shall remove more leachate by extraction from the hazardous waste unit than is entering the hazardous waste unit on an annual basis.

b. documentation that the operation and maintenance program referenced in Table 3 of the October 10, 2005 plan modification request is being implemented, and;

c. the response actions described in Republic Services, Inc.'s plan of operation modification request dated October 10, 2005 to determine if leachate is being removed to the greatest extent possible in the hazardous waste unit (corridors 1-6), using the currently designed vertical leachate extraction system.

2. PCB oil product which is leachate, or any other oil product shall be pumped, bailed or otherwise removed from those leachate extraction wells containing oil product, and the oil product shall be properly disposed of according to its characteristics and classification. Oil product shall also be pumped, bailed or otherwise removed from those leachate headwells which contain oil product where pumping or bailing is possible.

The Department retains its jurisdiction to modify this conditional plan of operation approval if, in the Department's opinion, circumstances or conditions change or if new information is found which would warrant such a modification.

Unless specifically noted, the conditions of this permit do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated DECEMBER 28, 2005

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Frances M. Koonce

Frances M. Koonce, Supervisor
WDNR Waste Management Program
Southeast Region

Joe Lourigan

Joe Lourigan, Hydrogeologist
WDNR Waste Management Program, SER-Sturtevant

Joe Lourigan for PB

Patrick Brady, Engineer
WDNR Waste Management Program, SER-Milwaukee

Mike Ellenbecker, Specialist
WDNR Waste Management Program, SER-Sturtevant

Appendix A.4
General Permit to Discharge (Tier 2 Industrial Facilities) – WPDES Permit No. WI-S067857-5
May 14, 2021

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STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM WPDES PERMIT NO. WI-S067857-5

TIER 2 INDUSTRIAL FACILITIES

In compliance with the provisions of ch. 283, Wis. Stats., and ch. NR 216, Wis. Adm. Code, any **Tier 2** facility as defined in ch. NR 216, Wis. Adm. Code, and located in the State of Wisconsin, excluding section 2.5.1, that discharges

STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

and meeting the applicability criteria in section 2 of this permit and that receives a letter from the Wisconsin Department of Natural Resources (Department) granting coverage under this permit, is authorized to discharge storm water to waters of the state provided that the discharge is in accordance with the conditions set forth in this permit.

This permit is issued by the Department and covers storm water discharges from the facility as of the **Start Date** of permit coverage to the permittee. For initial permit coverage, the Department will transmit a cover letter to the permittee stating that the facility is covered under this permit. Initial coverage under this permit will become effective at a facility beginning upon the **Start Date** specified by the Department in the cover letter. For an existing facility with permit coverage under a previously issued version of the Tier 2 general permit, coverage under this permit will become effective at the facility beginning upon the **Effective Date** below. For these facilities, the **Effective Date** is the **Start Date.**

State of Wisconsin Department of Natural Resources
For the Secretary

By _____ May 14, 2021
Brian Weigel, Director Date
Bureau of Watershed Management

PERMIT EFFECTIVE DATE: May 31, 2021 **PERMIT EXPIRATION DATE:** June 2, 2025

Table of Contents

	Page
1. Application Requirements	3
2. Permit Applicability Criteria	5
3. Storm Water Pollution Prevention Plan	15
4. Monitoring Requirements	21
5. Compliance and Reporting Requirements	23
6. General Conditions	25

Note: Information about the Department of Natural Resources' storm water program, this general permit, forms, and other helpful resources is available at https://dnr.wisconsin.gov/topic/Stormwater.

1. APPLICATION REQUIREMENTS

1.1 Initial Permit Coverage The owner or operator of a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, and not previously covered under the Tier 2 general permit shall submit a complete Notice of Intent (NOI) to the Department to apply for coverage under an industrial storm water discharge permit in accordance with the time frames in s. NR 216.22(2), Wis. Adm. Code. Within 30 calendar days of receipt of the NOI, the Department will evaluate the information submitted in the NOI to determine whether the NOI is complete, whether additional information is needed for review, whether the facility will be covered under this permit or an individual permit, or whether coverage under a permit will be denied. Based upon this evaluation, unless notified to the contrary by the Department, within 30 calendar days of receipt of the NOI, the Department will transmit a cover letter to the owner or operator indicating the **Start Date** upon which permit coverage becomes effective at the facility with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The NOI form (Form 3400-163), information about submitting via the Department's Water ePermitting System, and general permit are available for download from the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html. The Notice of Intent requires applicants to provide information on the applicant, facility location, applicability and operations information, storm water discharge information, and non-storm water discharge information.

1.2 Existing Permit Coverage Unless the Department makes a determination for an individual WPDES permit under section 2.5.7, a Tier 2 industrial facility type listed in s. NR 216.21(2)(b), Wis. Adm. Code, with existing Tier 2 general permit coverage prior to the **Effective Date** of this permit is automatically covered under this permit as of the **Effective Date**. For these permittees, the **Effective Date** is the permittee's **Start Date.** The Department will notify the owner or operator of the facility's continued coverage under this permit with instructions on where to download the permit from the Department website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The general permit is available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.3 No Exposure Certification The owner or operator of a facility not currently covered under this permit that has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, but that has been denied a No Exposure Exclusion by the Department shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the denial. The owner or operator of a facility that has previously been granted a No Exposure Exclusion by the Department but that has had that exclusion revoked shall apply for permit coverage in accordance with section 1.1 of this permit within 14-working days of being notified by the Department of the revocation.

1.4 Permit Coverage Transfers A permittee who will no longer control the permitted industrial facility may request that permit coverage be transferred to the person who will control the industrial facility. The transfer request shall be signed by both the permittee and the new owner or operator and sent electronically through the Department's Water ePermitting System. The Department may require additional information including an NOI to be filed prior to transferring permit coverage. Coverage is not transferred until the Department sends notification of transfer approval to the new owner or operator. The transfer request shall contain the following information:

1.4.1 The name and address of the facility.

1.4.2 The Facility Identification Number.

1.4.3 The names of the persons involved in the transfer, their signatures, and date of signatures.

1.4.4 A description of any significant changes in the operation of the facility.

1.4.5 A statement of acknowledgement by the transferee that it will be the permittee of record and is responsible for compliance with the permit.

Note: The Transfer of Coverage form (Form 3400-222) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

1.5 Permit Coverage Terminations

If the permittee no longer claims coverage under this permit, the permittee shall submit a signed Notice of Termination (NOT) to the Department in accordance with s. NR 216.32, Wis. Adm. Code.

Note: The NOT form (Form 3400-170) and information about submitting via the Department's Water ePermitting System are available on the Department website at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

2. PERMIT APPLICABILITY CRITERIA

2.1 Applicability This permit applies to point sources at facilities which discharge contaminated storm water associated with industrial activity to waters of the state, either directly or via a separate storm sewer system, originating from industrial facilities belonging to:

2.1.1 Manufacturing facilities described by the following SIC codes:

SIC	Description
20--	Food & Kindred Products
21--	Tobacco Products
22--	Textile Mill Products
23--	Apparel & Other Textile Products
2434	Wood Kitchen Cabinets
25--	Furniture & Fixtures
265-	Paperboard Containers & Boxes
267-	Misc. Converted Paper Products
27--	Printing, Publishing, & Allied Industries
283-	Drugs
285-	Paints & Allied Products
30--	Rubber & Misc. Plastics Products
31--	Leather & Leather Products
323-	Products of Purchased Glass
34--	Fabricated Metal Products
35--	Industrial & Commercial Machinery & Computer Equipment
36--	Electronic & Other Electrical Equipment & Components
37--	Transportation Equipment
38--	Instruments & Related Products
39--	Misc. Manufacturing Industries
4221	Farm Product Warehousing & Storage
4222	Refrigerated Warehousing & Storage
4225	General Warehousing & Storage

Note: Facilities in SIC codes 311-, 3441 and 373- are included in s. NR 216.21(2)(a) 1. as Tier 1 facilities.

2.1.2 Transportation facilities described by the following SIC codes that have vehicle maintenance shops, equipment cleaning operations, or airport de-icing operations. This only applies to those portions of these facilities that are either involved in vehicle maintenance including rehabilitation, mechanical repairs, painting, fueling, lubrication, and associated parking areas, or involved in cleaning operations, or de-icing operations, or that are listed as a pollution source area under s. NR 216.27(3)(e):

SIC	Description
40--	Railroad Transportation
41--	Local & Interurban Passenger Transit
42--	Trucking & Warehousing
43--	U.S. Postal Service
44--	Water Transportation

45--	Transportation by Air
5171	Petroleum Bulk Stations & Terminals

2.1.3 Facilities described by the following SIC codes, including active and inactive mining operations. This permit only applies where storm water runoff has come into contact with any overburden, raw material, intermediate product, finished product, by-product, or waste material.

SIC	Description
10--	Metal Mining
12--	Coal Mining
13--	Oil & Gas Extraction
14--	Non-metallic Minerals, except fuels

Note: An industry-specific general permit has been developed by the Department that regulates both process and storm water discharges associated non-metallic mining operations, SIC code 14--. While the Department intends to cover non-metallic mining operations under the industry-specific general permit, it may alternatively cover storm water discharges associated with non-metallic mining operations under this Tier 2 general permit. This permit does not apply to non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990; nor to coal mining operations released from the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act authority under 30 USC 1201 et seq. and 16 USC 470 et seq. Production, processing, or treatment operations or transmission facilities associated with oil and gas extraction are included only if there has been a discharge of storm water after November 16, 1987 containing a reportable quantity of a pollutant, or if a storm water discharge contributed to a violation of a water quality standard.

2.1.4 Facilities subject to storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards under 33 USC 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c), 1326 (c), except for those facilities identified in paragraph A.(1) that do not have contaminated storm water.

2.1.5 Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with Section 405 of the Clean Water Act under 33 USC s. 1345.

2.1.6 Hazardous waste treatment, storage, and disposal facilities, including those operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq.

2.1.7 Landfills, land application sites, and open dumps that receive or have received any industrial waste from any of the facilities identified in this section 2.1 of this permit, including those subject to regulation under subtitle D of RCRA, 42 USC 6901 et seq., or ch. 289, Wis. Stats. For purposes of this section, landfills include those landfills for construction and demolition waste disposal.

2.1.8 Steam electric power generating facilities, including coal handling sites but not including offsite transformer or electric substations.

2.1.9 Facilities described in SIC code 2951 for asphalt paving mixes and block, and facilities described in SIC codes 3271, 3272 and 3273 for cement products.

Note: In 1997, the North American Industry Classification System (NAICS) was developed as the standard for use by Federal agencies in classifying business establishments and has been adopted by Federal agencies to replace the SIC Code system. As a result, an industrial facility identified in sections 2.1.1 through 2.1.9 of this permit may have an NAICS Code assigned to it by a Federal agency, trade association, or other organization. If needed, the Department may use Federal data to convert the NAICS Code to the corresponding SIC Code for purposes of determining the applicability of this permit to the facility.

2.1.10 Facilities originally covered under a Tier 1 general permit, but subsequently covered under a Tier 2 general permit pursuant to s. NR 216.23(3), Wis. Adm. Code.

2.2 Authorized Discharges This permit authorizes storm water point source discharges to waters of the State from industrial activities identified in section 2.1 of this permit. This permit also authorizes the discharge of storm water commingled with flows contributed by process and non-process wastewater, provided those flows are regulated by other WPDES permits, if required.

2.3 Movement to Tier One Coverage In accordance with s. NR 216.23(4), Wis. Adm. Code, the Department may revoke coverage under this permit. In this case, the permittee shall reapply for Tier 1 general permit coverage.

2.4 Exclusions This permit does not apply to any of the following:

2.4.1 Diffused surface drainage or agricultural storm water discharges.

2.4.2 Non−storm water discharges.

2.4.3 Non−storm water discharges for which coverage under an individual or general WPDES permit is not required, including landscape irrigation, diverted stream flows, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, lawn watering, individual residential car washing, flows from riparian habitats and wetlands and fire fighting.

2.4.4 Inactive, closed or capped landfills that have no potential for contamination of storm water. The Department shall make a determination of contamination potential on a case−by−case basis.

2.4.5 Remedial action discharges or discharges authorized by a WPDES permit for discharging contaminated or uncontaminated groundwater.

2.4.6 Areas located on plant lands that are segregated from the industrial activities of the plant, such as office buildings and accompanying parking lots, if the drainage from the segregated areas is not mixed with contaminated storm water drainage.

2.4.7 Storm water discharges into a municipal combined sewer system.

Note: Areas where this exclusion may apply include portions of the City of Milwaukee, the City of Superior, and the Village of Shorewood.

2.4.8 Storm water discharges from an industrial facility for which the owner or operator has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21(3), Wis. Adm. Code, provided that the Department concurs with the no exposure certification and the conditions under which a No Exposure Exclusion was granted remain in effect.

2.5 Discharges Not Covered by this Permit The following are not authorized under this permit:

2.5.1 Storm water discharges within Indian Country.

Note: Indian County is defined under 18 USC §1151 and includes all lands within the exterior boundaries of federally recognized Indian reservations and on lands held in federal trust status. Facilities that currently do not have storm water discharge permit coverage and are located within Indian Country should contact the United States Environmental Protection Agency (USEPA) to apply. For existing discharges covered under a National Pollution Discharge Elimination System (NPDES) permit from USEPA, discharges will continue to be covered by a NPDES permit. Dischargers that previously held permit coverage under previous versions of this permit after September 30, 2001, are no longer eligible for coverage under this permit and must contact USEPA to apply.

USEPA's website contains information on the Multi-Sector General Permit: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities. Facilities should verify eligibility for coverage under the general permit or determine if an individual permit is needed. Information on how to apply for the Multi-Sector General Permit can be accessed here: https://epanet.zendesk.com/hc/en-us/articles/360001508168-How-to-Create-a-NOI-for-MSGP-PPT-.

2.5.2 Discharges of hazardous substances that are required to be reported under ch. NR 706, Wis. Adm. Code.

2.5.3 Storm water discharges that affect wetlands, unless the Department determines that the storm water discharges comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

2.5.4 Storm water discharges that affect endangered and threatened resources, unless the Department determines that the storm water discharges comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

2.5.5 Storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40(3), Wis. Stats.

2.5.6 Storm water discharges from land disturbing construction activity affecting one acre or more of land that require storm water permit coverage under subch. III of NR 216, Wis. Adm. Code, for new construction, reconstruction, or expansion of an industrial facility.

Note: Storm water discharges from areas of bare soil due to the normal industrial operation of the facility are covered under this permit provided those areas are managed in accordance with section 3.3.2.8.2.

2.5.7 Facilities where the Department makes a determination, pursuant to s. 283.35(3), Wis. Stats. or

s. NR 216.25(3), Wis. Adm. Code, that a storm water discharge is more appropriately covered under an individual WPDES permit. The Department may make this determination if one or more of the following conditions are met:

2.5.7.1 The storm water discharge is potentially a significant source of pollution and more appropriately regulated by an individual WPDES storm water discharge permit.

2.5.7.2 The facility is not in compliance with the terms and condition of this permit or Subchapter II of ch. NR 216, Wis. Adm. Code.

2.5.7.3 Numeric effluent limitations or standards are promulgated for a storm water discharge covered by this permit.

2.5.7.4 Storm water discharges that are regulated by permits containing storm water effluent limitations.

2.5.8 Storm water discharges in violation of the regulation of injection wells under ch. NR 815, Wis. Adm. Code.

Note: Information about the Department's injection well program may be found at: https://dnr.wi.gov/topic/wells/uiw.html.

2.5.9 Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 below:

Table 1.

Regulated Activity	**40 CFR Part/Subpart**
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas	Part 429, Subpart I
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A
Runoff from asphalt emulsion facilities	Part 443, Subpart A
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C
Mine dewatering discharges at crushed stone, construction sand and gravel, or industrial sand mining facilities	Part 436, Subparts B, C, and D
Runoff from hazardous waste landfills	Part 445, Subpart A
Runoff from non-hazardous waste landfills	Part 445, Subpart B
Runoff from coal storage piles at steam electric generating facilities	Part 423
Runoff containing urea from airfield pavement deicing at existing and new primary airports with 1,000 or more annual non-propeller aircraft departures	Part 449

Note: The federal effluent limitations guidelines are available at the following website: https://www.epa.gov/eg/industrial-effluent-guidelines. Discharges associated with activities subject to any of the federal effluent limitation guidelines listed in Table 1 require coverage under a separate WPDES general permit or individual permit. However, these industrial facilities still require coverage under this permit for discharges not subject to the federal effluent limitation guidelines listed in Table 1.

2.6 Water Quality Standards

2.6.1 This permit specifies the conditions under which storm water may be discharged to waters of the state for the purpose of achieving water quality standards contained in chs. NR 102 through 105, NR 140, and NR 207, Wis. Adm. Code. For the term of this permit, compliance with water quality standards will be addressed by adherence to general narrative-type storm water discharge limitations and implementation of a storm water pollution prevention plan.

2.6.2 This permit does not authorize storm water discharges that the Department, prior to authorization of coverage under this permit, determines will cause or have reasonable potential to cause or contribute to an excursion above any applicable water quality standard. Where such determinations have been made prior to authorization, the Department may notify the applicant that an individual permit application is necessary. However, the Department may authorize coverage under this permit where the storm water pollution prevention plan required under this permit will include appropriate controls and implementation procedures designed to bring the storm water discharge into compliance with water quality standards.

2.7 Outstanding and Exceptional Resource Waters

2.7.1 Storm water discharges from industrial facilities covered under a previously issued version of this permit shall comply with sections 2.7.2 through 2.7.5 as of the **Effective Date**. Storm water discharges from industrial facilities covered under this permit after the **Effective Date** shall comply with sections 2.7.2 through 2.7.5 as of the **Start Date** of coverage under this permit.

2.7.2 The permittee shall determine whether any part of its facility discharges storm water to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code, respectively.

Note: A list of ORWs and ERWs may be found on the Department website at: https://dnr.wi.gov/topic/surfacewater/orwerw.html.

2.7.3 The permittee may not establish a new storm water discharge of pollutants directly to an ORW or an ERW unless the discharge of pollutants is equal to or less than existing levels of pollutants immediately upstream of the discharge site. The storm water pollution prevention plan required under section 3 of this permit shall include practices designed to meet this requirement for new discharges.

2.7.3.1 "New storm water discharge" or "new discharge" means a storm water discharge that would first occur after the permittee's **Start Date** of coverage under this permit to a surface water to which the facility did not previously discharge storm water, and does not include an increase in a storm water discharge to a surface water to which the facility discharged on or before coverage under this permit.

2.7.4 The permittee may increase an existing storm water discharge directly to an ERW only if the increased discharge will not cause a significant lowering of water quality and the discharge is to accommodate to important economic or social development.

2.7.5 The permittee may increase an existing storm water discharge to an ORW only if the increased discharge of pollutants is equal to or less than the background levels of the pollutant upstream of the discharge and the discharge is to accommodate to important economic or social development.

2.8 Impaired Water Bodies and Total Maximum Daily Load Requirements

2.8.1 "Pollutant(s) of concern" means a pollutant that is contributing to the impairment of a water body.

2.8.2 By February 15th of each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to an impaired water body listed in accordance with Section 303 (d) (1) of the Federal Clean Water Act, 33 USC §1313 (d) (1) (C), and the implementing regulation of the U.S. Environmental Protection Agency (USEPA), 40 CFR §130.7 (c) (1). Impaired waters are those listed as not meeting applicable surface water quality standards. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The Department updates the list approximately every two years. The updated list is effective upon approval by the USEPA. The current list may be found on the Department website at: https://dnr.wi.gov/topic/impairedwaters/.

2.8.3 A permittee that discharges a pollutant of concern via storm water to an impaired water body shall, within 180 days of the annual check that determines the facility discharges to an impaired water body, include a written section in the storm water pollution prevention plan that specifically identifies source area pollution prevention controls and storm water best management practices that will collectively be used to reduce, with the goal of eliminating, the storm water discharge of pollutant(s) of concern that contribute to the impairment of the water body and explain why these controls and practices were chosen as opposed to other alternatives. Changes identified in the storm water pollution prevention plan shall be implemented with the 180-day timeframe.

Note: For a permittee that discharges a pollutant of concern via storm water to an impaired water body, amending the storm water pollution prevention plan will be required after the initial annual check and if subsequent annual checks indicate additional pollutants of concern have been added, additional water bodies have been designated as impaired, or other relevant changes to the designation have occurred.

2.8.4 The permittee may not establish a new storm water discharge of a pollutant of concern to an impaired water body or significantly increase an existing discharge of a pollutant of concern to an impaired water body unless the new or increased discharge does not contribute to the receiving water impairment, or the discharge is consistent with a State and Federal approved total maximum daily load (TMDL) allocation for the impaired water body.

2.8.4.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.8.5 By February 15th each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to a water body included in a State and Federal approved TMDL. If so, the permittee shall assess whether any TMDL wasteload allocation for the facility's discharge is being met through the existing pollution prevention controls and storm water best management practices or whether additional controls or treatment are necessary and feasible. The assessment of the feasibility of additional controls or treatment shall focus on the ability to improve

pollution prevention and treatment system effectiveness and the adequacy of implementation and maintenance of the additional controls or treatment. The results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under section 4.3.1 of this permit.

Note: The current State and Federal approved TMDLs may be found on the Department website at: https://dnr.wi.gov/topic/tmdls/.

2.8.6 Within 180 days of the annual check that determines the facility discharges to a TMDL allocated water body, a permittee that is included in a State and Federal approved TMDL shall submit to the Department a proposed implementation plan for the storm water discharge that meets the requirements of the State and Federal approved TMDL wasteload allocation for the facility. The proposed TMDL implementation plan shall specify any feasible pollution prevention and treatment improvements that could be made and specify any revisions or redesigns that could be implemented to increase the effectiveness of the permittee's storm water pollution prevention controls and treatment practices. The TMDL implementation plan shall also specify a time schedule for implementation of the improvements, revisions or redesigns necessary to meet the wasteload allocation for the facility. If a specific wasteload allocation has not been assigned to the facility under a TMDL, compliance with this permit shall be deemed to be in compliance with the TMDL.

2.9 Fish and Aquatic Life Waters

2.9.1 The permittee shall determine whether it will have a storm water discharge to a fish and aquatic life water as defined in s. NR 102.13, Wis. Adm. Code.

Note: Most receiving waters of the state are classified as a fish and aquatic life waters and this classification includes all surface waters of the state except ORWs, ERWs, Great Lakes system waters and variance water identified within ss. NR 104.05 through 104.10, Wis. Adm. Code. The Department may be consulted if the permittee is not certain of the classification.

2.9.2 The permittee may not establish a new storm water discharge of pollutants to a fish and aquatic life water if the discharge will result in the significant lowering of water quality of the fish and aquatic life water. Significant lowering of water quality is defined within ch. NR 207, Wis. Adm. Code.

2.9.2.1 "New storm water discharge" or "new discharge" has the meaning given in section 2.7.3.1 of this permit.

2.9.3 If the permittee's facility has an existing storm water discharge to a fish and aquatic life water, it may not increase the discharge of pollutants if the increased discharge would result in a significant lowering of water quality.

2.9.4 Any increased or new discharge of storm water authorized under this permit shall be to accommodate to important economic or social development.

2.10 Toxic Pollutants In accordance with s. NR 102.12 Wis. Adm. Code, a new discharge and increased discharge as defined in ch. NR 207, Wis. Adm. Code, of persistent, bioaccumulating toxic substances to the Great Lakes waters or their tributaries shall be avoided or limited to the maximum extent practicable. Any new or increased discharge of these substances is prohibited unless the permittee certifies that the new or increased discharge is necessary after utilization of best technology in process or control using waste minimization, pollution prevention, municipal pretreatment programs, material substitution or other means of commercially available technologies which have demonstrated capability for similar applications.

2.11 Minimum Source Area Control Requirements All permittees shall comply with the following minimum source area control requirements. The Storm Water Pollution Prevention Plan required under section 3 shall identify how each source area control requirement will be met. Source area controls shall be utilized to prevent storm water from becoming contaminated at the facility. Structural source area controls that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The permittee shall:

2.11.1 Minimize exposure of pollutants associated with the potential sources of storm water contamination identified in section 3.3.2.4 of this permit.

2.11.2 Use good house-keeping measures such as sweeping, appropriate storage, and proper management of waste materials and dumpsters/compactors.

2.11.3 Maintain both structural and non-structural control measures, institute preventive maintenance for vehicles and equipment, and perform routine visual inspections.

2.11.4 Minimize the potential for leaks, spills, and other releases that may contaminate storm water, and institute spill prevention and response measures, including spill reporting described in section 6.5 of this permit.

2.11.5 Stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion, or when that is not possible, implement best management practices to meet the requirements of section 3.3.2.8.2 of this permit.

2.11.6 Construct and maintain salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges.

2.11.6.1 Salt storage piles shall be constructed on an impervious, curbed surface to prevent salt or brine from passing through the base and reaching waters of the state. Salt storage piles shall be enclosed by a building or structure with walls and a cover sufficient to prevent contact between precipitation and the salt and to prevent wind from eroding the salt or carrying any amount of the substance into potential contact with the waters of the state. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install a means of diverting contaminated storm water to a brine treatment system for process use.

2.11.6.2 Any salt spillage resulting from activities such as loading or unloading, shall be immediately cleaned up to minimize contact with storm water.

2.11.7 Train and raise awareness of employees as appropriate on storm water pollution prevention, the requirements of this permit, and their specific responsibilities in implementing any of the requirements, practices, or activities of this permit or the Storm Water Pollution Prevention Plan.

2.11.8 Evaluate the facility for the presence of non-storm water discharges as specified in section 4.2. of this permit.

Note: This permit does not cover non-storm water discharges. See section 2.3.
2.11.9 Minimize dust and off-site tracking of soil, raw materials, intermediate products, final products, or waste materials.

2.11.10 If applicable, use a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

2.12 Compliance with Runoff Management Performance Standards The owner or operator of a facility subject to the performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, shall describe in the Storm Water Pollution Prevention Plan the best management practices necessary to maintain compliance with the applicable performance standards in s. NR 151.12 or ss. NR 151.121 to 151.128, Wis. Adm. Code, for those areas that are described in s. NR 151.12(2) or s. NR 151.121(2), Wis. Adm. Code, respectively. Best management practices installed to meet the performance standards in s. NR 151.12 or s. NR 151.121 to 151.128, Wis. Adm. Code, shall be maintained to meet the treatment capability as originally designed.

2.13 Post-Construction Performance Standards for Landfills For landfills, post-construction storm water best management practices constructed after the effective date of this permit shall be in compliance with the performance standards in ss. NR 151.122 and NR 151.123, Wis. Adm. Code.

Note: The infiltration performance standard in s. NR 151.124, Wis. Adm. Code, does not apply to landfills.

3. STORM WATER POLLUTION PREVENTION PLAN

3.1 Storm Water Pollution Prevention Plan Required In accordance with s. NR 216.27, Wis. Adm. Code, and section 3.3 of this permit, the owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code.

3.2 Incorporation by Reference When plans are developed or activities conducted in accordance with other federal, state or local regulatory programs that meet the requirements of section 3.3.2 of this permit, the plans may be incorporated by the permittee into the SWPPP by reference.

3.3 Purpose and Content of a Storm Water Pollution Plan

3.3.1 Purpose of the Plan Any SWPPP prepared to comply with this permit shall do all of the following:

3.3.1.1 Identify sources of storm water and non-storm water contamination to the storm water drainage system.

3.3.1.2 Identify and prescribe appropriate "source area control" type best management practices designed to prevent storm water contamination from occurring.

3.3.1.3 Identify and prescribe "storm water treatment" type best management practices to reduce pollutants in contaminated storm water prior to discharge.

3.3.1.4 Prescribe actions needed either to bring non-storm water discharges under an appropriate WPDES permit or to remove these discharges from the storm drainage system.

3.3.1.5 Prescribe an implementation schedule so as to ensure that the storm water management actions prescribed in the SWPPP are carried out in a timely manner and evaluated on a regular basis.

3.3.2 Required Plan Content The SWPPP shall contain, at a minimum, the following items and provisions:

3.3.2.1 Pollution Prevention Individual The SWPPP shall identify by job title the specific individual who has primary responsibility for all aspects of SWPPP development and implementation and identify any other individuals concerned with SWPPP development or implementation, and their respective roles. The specific individual who has primary responsibility shall develop, evaluate, maintain and revise the SWPPP, and carry out the specific management actions identified in the SWPPP, including maintenance practices, monitoring activities, preparing and submitting reports, recordkeeping, and serving as facility contact for the Department.

3.3.2.2 Facility Site Description and Drainage Base Map The SWPPP shall contain a short summary of the major activities conducted at various locations throughout the facility. The SWPPP shall also include a facility drainage base map depicting all of the following:

3.3.2.2.1 How storm water drains on, through and from the facility to groundwater, surface water, or wetlands.

3.3.2.2.2 The facility property boundaries.

3.3.2.2.3 The storm drainage collection and disposal system including all surface and subsurface conveyances.

3.3.2.2.4 Any secondary containment structures.

3.3.2.2.5 The location of all outfalls that discharge channelized flow to groundwater, surface water or wetlands, including outfalls recognized as permitted outfalls under another WPDES permit, numbered for reference.

3.3.2.2.6 The drainage area boundary for each outfall.

3.3.2.2.7 The surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed or highly compacted soil, and the percentage that is pervious such as grassy areas and woods.

3.3.2.2.8 Existing structural storm water controls.

3.3.2.2.9 The name and location of receiving waters.

3.3.2.2.10 The location of activities and materials that have the potential to contaminate storm water.

3.3.2.3 Summary of Existing Sampling Data or Observations The SWPPP shall summarize any results of available storm water sampling data or other observations that characterize the quality of storm water discharges or identifying sources of storm water contamination. Available data that characterizes the quality of storm water discharges under dry weather flow conditions shall also be included, except when such data has been or will be reported to the Department under another WPDES permit.

3.3.2.4 Potential Sources of Storm Water Contamination The SWPPP shall identify any significant pollutants or activities associated with the storm water pollution source areas identified in this permit. When possible, specific pollutants likely to be present in storm water as a result of contact with specific materials shall also be listed. The SWPPP shall identify all potential source areas of storm water contamination, including but not limited to:

3.3.2.4.1 Outdoor manufacturing areas.

3.3.2.4.2 Rooftops contaminated by industrial activity, exhaust vents, or a pollution control device.

3.3.2.4.3 Industrial plant yards.

3.3.2.4.4 Storage and maintenance areas for material handling equipment.

3.3.2.4.5 Immediate access roads and rail lines owned or operated by the permittee.

3.3.2.4.6 Material handling sites including storage, loading, unloading, transportation, or conveyance of any raw material, finished product, intermediate product and by-product or waste areas.

3.3.2.4.7 Storage areas (including tank farms) for raw materials, finished and intermediate products.

3.3.2.4.8 Disposal or application of wastewater.

3.3.2.4.9 Areas containing residual pollutants from past industrial activity.

3.3.2.4.10 Areas of significant soil erosion, including areas of bare soil.

3.3.2.4.11 Refuse sites.

3.3.2.4.12 Vehicle maintenance and cleaning areas.

3.3.2.4.13 Washing areas for equipment, vehicles, containers, or other items.

3.3.2.4.14 Shipping and receiving areas.

3.3.2.4.15 Manufacturing buildings.

3.3.2.4.16 Residual treatment, storage, and disposal sites.

3.3.2.4.17 Any other areas capable of contaminating storm water runoff.

3.3.2.5 Status of Non-Storm Water Discharges to the Storm Sewer The SWPPP shall identify all known contaminated and uncontaminated sources of non-storm water discharges to the storm sewer system or waters of the state and indicate which are covered by WPDES permits. The SWPPP shall contain the results of the non-storm water discharge monitoring required by s. NR 216.28, Wis. Adm. Code. If monitoring is not feasible due to the lack of suitable access to an appropriate monitoring location, the SWPPP shall include a statement that the monitoring could not be conducted and an explanation of the reasons why.

3.3.2.6 Source Area Control Best Management Practices The SWPPP shall rely, to the maximum extent practicable, on the use of source area control best management practices designed to prevent storm water from becoming contaminated at the facility. Source area control best management practices that are either proposed or in place at the facility shall be indicated on the facility drainage base map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the use of the following source area control best management practices:

3.3.2.6.1 Activities to stabilize areas of bare soil with vegetation or through permanent land cover to control soil erosion.

3.3.2.6.2 Good house-keeping measures, preventive maintenance measures, visual inspections, spill prevention and response measures, and employee training and awareness.

3.3.2.6.3 Manage salt storage facilities so that neither precipitation nor storm water runoff can come into contact with the stored salt in order to minimize pollutant discharges. Alternatively, for permittees that use brine and have salt storage piles on impervious curbed surfaces, install and

maintain a means of diverting contaminated storm water to a brine treatment system for process use.

3.3.2.6.4 Use of a combination of storm water contact control or containment, drainage controls, or diversions to control SARA Title III Section 313 "Water Priority Chemicals" (42 USC s. 11023 (c)) potentially discharged through the action of storm water runoff, leaching, or wind.

3.3.2.7 Residual Pollutants The SWPPP shall identify pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control best management practices. Past sampling data collected at the facility or at sufficiently similar outfalls at other facilities may be used in making this determination. At a minimum, the following pollutants shall be considered for their potential to contaminate storm water:

3.3.2.7.1 Any pollutant for which an effluent limitation is contained in any discharge permit issued to the permittee, for this facility, by the Department.

3.3.2.7.2 Any pollutant contained in a categorical effluent limitation or pre-treatment standard to which the facility is subject.

3.3.2.7.3 Any SARA Title III Section 313 "Water Priority Chemical" (42 USC s. 11023 (c)) for which the permittee, for this facility, has reporting requirements and which has the potential for contaminating storm water.

3.3.2.7.4 Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state, and which are not regulated by another environmental program.

3.3.2.7.5 Any of the following parameters which might be present in significant concentrations: Oil and grease, pH, total suspended solids, 5-day biological oxygen demand, and chemical oxygen demand.

3.3.2.8 Storm Water Treatment Best Management Practices When source area control best management practices are not practicable or are inadequate to control storm water pollution, or when the Department determines source area control best management practices are inadequate to achieve a water quality standard, the SWPPP shall prescribe appropriate storm water treatment practices as needed to reduce the pollutants in contaminated storm water prior to discharge to waters of the state. Proposed or existing storm water treatment practices shall be shown on the facility drainage basin map described in section 3.3.2.2 of this permit. The SWPPP shall provide for the following types of storm water treatment practices:

3.3.2.8.1 Storm water significantly contaminated with petroleum products shall be treated for oil and grease removal by an adequately sized, designed, and functioning wastewater treatment device. Coverage under a separate individual or general permit is required for discharges of storm water from oil/water treatment devices. Under s. 281.41, Wis. Stats., prior Department approval of plans for oil and grease removal devices may be required.

3.3.2.8.2 Storm water discharges contaminated by sediment eroding from areas of bare soil that cannot be stabilized by pavement, gravel, vegetation, or other permanent land cover shall be treated by best management practices designed, installed and maintained to achieve compliance with the

construction site performance standards in s. NR 151.11(6m), Wis. Adm. Code, and in accordance with the Department's Construction Site Erosion and Sediment Control Technical Standards.

Note: The Construction Site Erosion and Sediment Control Technical Standards are available at the following Department website: https://dnr.wi.gov/topic/stormwater/standards/const_standards.html.

3.3.2.9 Facility Monitoring The SWPPP shall include provisions for complying with the monitoring requirements specified in s. NR 216.28, Wis. Adm. Code, and section 4 of this permit. The SWPPP shall include a checklist of inspections to be made during the annual facility site inspection required by s. NR 216.28(2), Wis. Adm. Code. The SWPPP shall also identify for each outfall the type of monitoring that will be conducted, such as non-storm discharge monitoring and storm water discharge quality inspections.

3.3.2.10 SWPPP Implementation Schedule The SWPPP shall include an implementation schedule for the requirements of this permit that meet the compliance timeframes set forth in this permit.

3.3.2.11 Certification and Signature The SWPPP shall be signed in accordance with s. NR 216.22(7), Wis. Adm. Code, and contain the following statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

3.4 Amending a SWPPP Unless an alternative timeframe is specified by the Department, the permittee shall amend and submit the SWPPP to the department within 30 days of the occurrence of any of the following circumstances:

3.4.1 When expansion, production increases, process modifications, changes in material handling or storage, or other activities are planned which will result in significant increases in the exposure of pollutants to storm water discharged either to waters of the state or to storm water treatment devices. The amendment shall contain a description of the new activities that contribute to the increased pollutant loading, planned source control activities that will be used to control pollutant loads, an estimate of the new or increased discharge of pollutants following treatment, and when appropriate, a description of the effect of the new or increased discharge on existing storm water treatment facilities.

3.4.2 The comprehensive annual facility site compliance inspection, quarterly visual inspection of storm water quality, or other information reveals that the provisions of the SWPPP are ineffective in controlling storm water pollutants discharged to waters of the state.

3.4.3 Upon written notice that the Department finds the SWPPP to be ineffective in achieving the conditions of this permit.

3.5 Storm Water Discharges to Outstanding and Exceptional Resource Waters If the permittee's industrial storm water will discharge to an outstanding resource water or exceptional resource water, the permittee shall include a written section in the SWPPP that discusses and identifies the management practices and control measures the permittee will implement to prevent the discharge of any pollutant(s) in excess of the background

level within the water body. This section of the permittee's plan shall specifically identify control measures and practices that will collectively be used to prevent the discharge of pollutants in excess of the background level within the water body.

4. MONITORING REQUIREMENTS

4.1 Purpose Monitoring includes site inspections and non-storm water discharge assessments. The purpose of monitoring is to evaluate storm water outfalls for the presence of non-storm water discharges, and to evaluate the effectiveness of the permittee's pollution prevention activities in controlling contamination of storm water discharges.

4.2 Evaluation of Non-Storm Water Discharges

4.2.1 The permittee shall evaluate all storm water outfalls for non-storm water contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-storm water discharges from the facility. Evaluations shall take place during dry periods, and may include either end of pipe screening or detailed testing of the storm sewer collection system. Either of the following monitoring procedures is acceptable:

4.2.1.1 A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. The Department may require a re-test after 5 years or a lesser period as deemed necessary by the Department.

4.2.1.2 End of pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded.

Note: The department recommends compiling photographic documentation of visual observations made during non-storm water discharge evaluations.

4.2.2 In addition to maintaining results on-site at the facility, results of the non-storm water evaluations shall be included in the SWPPP required in section 3.3.2.5 of this permit and the Annual Facility Site Compliance Inspection report required in section 5.2 of this permit. Information reported shall include the date of testing, test method, outfall location, testing results, and potential significant sources of non-storm water discovered through testing. Upon discovering non-storm water flows that are not covered under another WPDES permit, the permittee shall either immediately seek coverage under another permit from the Department or eliminate the non-storm water flow.

4.2.3 Any permittee unable to evaluate an outfall for non-storm water discharges shall sign a statement certifying that this requirement could not be complied with, and include a copy of the statement in the SWPPP and the Annual Facility Site Compliance Inspection report. The statement shall be submitted to the Department within 30 days after the permittee determines that it is unable to evaluate an outfall.

4.3 Evaluation of Storm Water Discharges The permittee shall evaluate storm water outfalls for storm water contributions to the storm drainage system. Any monitoring shall be representative of storm water discharges from the facility.

4.3.1 Annual Facility Site Compliance Inspection Permittees shall perform and document the results of an Annual Facility Site Compliance Inspection (AFSCI). The AFSCI shall be adequate to verify that the site drainage conditions and potential pollution sources identified in the SWPPP remain accurate, and that the best management practices prescribed in the SWPPP are being implemented, properly operated and adequately maintained. Information reported shall include the inspection date, inspection personnel, scope of the inspection, major observations, and revisions needed in the SWPPP.

The AFCSI Report Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176.pdf

4.3.2 Quarterly Visual Monitoring Permittees shall perform and document quarterly visual inspections of storm water discharge quality at each storm water discharge outfall. Inspections shall be conducted within the first 30 minutes of discharge or as soon thereafter as practical, but not exceeding 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. Information reported shall include the inspection date, inspection personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination.

The Quarterly Visual Inspection Form can be accessed at the following website:
https://dnr.wi.gov/files/PDF/forms/3400/3400-176a.pdf

4.3.3 Monitoring Waivers The Department may waive specific monitoring requirements for the following reasons:

4.3.3.1 The permittee indicates that either an employee could not reasonably be present at the facility at the time of the snowmelt or runoff event, or that attempts to meet the monitoring requirement would endanger employee safety or well-being.

4.3.3.2 The permittee indicates that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at an outfall. A waiver is automatically granted for a quarter where the permittee sufficiently documents and retains records demonstrating that there were no snow melt or runoff events large enough to conduct a quarterly visual inspection at the facility during that quarter. Documentation and records used to qualify for an automatic waiver shall be submitted to the Department upon request.

4.3.3.3 The facility is inactive or remote facility (such as an inactive mining operation) where the permittee demonstrates that monitoring and inspection activities are impractical or unnecessary. At a minimum, the Department shall establish an alternative requirement that the permittee make site inspections by a qualified individual at least once in every 3-year period.

4.3.3.4 The permittee demonstrates to the Department's satisfaction that the sources of storm water contamination are outside of the permittee's property boundary and are not associated with the permittee's activities. The demonstration shall be presented in the SWPPP or AFSCI report and submitted to the Department for evaluation.

5. COMPLIANCE AND REPORTING REQUIREMENTS

5.1 SWPPP Compliance and Reporting Requirements

5.1.1 An owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code, and shall submit the SWPPP summary to the Department when applying for coverage under this permit. For existing facilities that previously operated without required permit coverage and without a SWPPP as required, the owner or operator shall immediately develop a SWPPP, submit the SWPPP summary to the Department when applying for coverage under this permit, and implement the SWPPP to achieve compliance with this permit in the shortest practicable time. A facility has the option to submit their full SWPPP in lieu of the SWPPP summary when applying for coverage.

5.1.2 The SWPPP shall conform to the requirements specified in s. NR 216.27 (3), Wis. Adm. Code, and section 3.3 of this permit.

5.1.3 The SWPPP shall be kept at the facility and made available to the Department for inspection and copying upon request. If storm water discharges from the facility enter a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, the SWPPP shall be made available to the owner or operator of the municipal separate storm sewer system for inspection and copying upon request.

5.1.4 Unless an alternate implementation schedule is specified by the Department, the SWPPP shall be implemented in accordance with the implementation schedule developed under section 3.3.2.10 of this permit.

5.1.5 The permittee shall keep the SWPPP current and amend it as necessary to correct deficiencies in the SWPPP as they are identified. The permittee shall amend the SWPPP and submit it to the Department in the event of any facility operational changes that may result in additional significant storm water contamination.

5.2 Monitoring Compliance and Reporting Requirements

5.2.1 The permittee shall conduct the first Annual Facility Site Compliance Inspection (AFSCI) within 12 months of the **Start Date** of coverage under this general permit. Subsequent AFSCIs shall be conducted and AFSCI reports prepared by the permittee by the anniversary of the **Start Date** for each year of coverage under this permit. Reports shall be written on forms available from the Department and shall contain information from the AFSCI, the quarterly visual inspection, and the non-storm water evaluation. Copies of all AFSCI reports, quarterly visual inspections and nonstorm water monitoring reports shall be maintained on site at the facility and made available to the Department for inspection and copying upon request for the duration of permit coverage.

Note: The AFSCI Report form, Quarterly Visual Inspection form, and Storm Water Chemical Analysis Report form are available on the Department website at:
https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

5.2.2 Quarterly visual inspections of storm water discharge quality shall be conducted by the permittee four times annually by the anniversary date of **Start Date** of coverage under the permit.

5.3 Discharges to Regulated Municipal Separate Storm Sewer Systems

5.3.1 Permittees regulated under this permit with storm water discharges and non-storm water discharges entering a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, shall provide information on these discharges to the owner or operator of the municipal separate storm sewer system upon request. Information the permittee shall provide includes the area or sub-areas of the facility draining to the municipal separate storm sewer system, the nature of industrial activity and potential storm water contamination sources in the areas draining to the system, the nature and number of non-storm water discharges to the system, storm water best management practices employed at the facility and their effectiveness at pollutant removal, storm water monitoring data, and copies of the SWPPP and AFSCI reports.

5.3.2 Upon discovering a previously unknown non-storm water discharge to the municipal separate storm sewer system that is not authorized to discharge under a required WPDES permit or that is an illicit discharge as defined by s. NR 216.002(11), Wis. Adm. Code, the permittee shall immediately report the discharge to the owner or operator of the municipal separate storm sewer system.

5.3.3 The permittee shall immediately report spills or dumping of materials that enter the municipal separate storm sewer system to the owner or operator of the system.

5.3.4 In accordance with the owner or operator's established authority to control discharges to its municipal separate storm sewer system, the permittee shall assist the owner or operator of the system with detecting and eliminating illicit discharges to the system to the maximum extent practicable if the owner or operator finds that the source of an illicit discharge may originate from the permittee's facility.

6. GENERAL CONDITIONS The general conditions in s. NR 205.07(1), (3), and (5), Wis. Adm. Code, are hereby incorporated by reference into this permit, except for s. NR 205.07(1)(n) and(3)(b), Wis. Adm. Code. Under s. NR 205.08(9), Wis. Adm. Code, dischargers covered under a storm water general permit are not required to submit an application for reissuance unless directed to do so by the Department under s. NR 216.22(9), Wis. Adm. Code. The requirements for spill reporting are in section 6.5 below.

Note: Chapter NR 205 is available at the following website: https://docs.legis.wisconsin.gov/code/admin_code/nr/200.

6.1 Work near Surface Waters and Wetlands Activities performed in wetland areas, in floodplains, or near shorelands may require permits or approvals through applicable state law, state regulations, or county or local ordinances. Additionally, state permits or contracts required by chs. 30, 31 and 87, Wis. Stats. and s. 281.36, Wis. Stats. (or Wisconsin Administrative Code promulgated under these laws), and federal permits may be applicable.

6.2 Continuation of the Expired General Permit As provided in s. NR 205.08(9), Wis. Adm. Code, and s. 227.51, Wis. Stat., the terms and conditions of this general permit shall continue to apply until this general permit is reissued or revoked or until an individual permit is issued for the discharge to which the general permit applied.

6.3 Petition to Move to Individual Permit Coverage Any person may submit a written request to the department to withdraw coverage under this general permit and to replace it with an individual storm water permit under s. NR 216.25(4), Wis. Adm. Code.

6.4 Liabilities under Other Laws Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the federal Clean Water Act (33 USC s. 1321), any applicable federal, state, or local law or regulation under authority preserved by Section 510 of the Clean Water Act (33 USC s. 1370).

6.5 Severability The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.

6.6 Spill Reporting The permittee shall notify the Department immediately of any release or spill of a hazardous substance to the environment in accordance with s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.

Note: The 24-hour toll free spills hotline number is (800) 943-0003. Information about hazardous substance spills is available from the Department's website at: https://dnr.wi.gov/topic/Spills/.

6.7 Submitting Records Any forms or reports submitted to the Department of Natural Resources in accordance with this permit shall be submitted via the Department's Water ePermitting System available at: https://dnr.wi.gov/topic/stormwater/industrial/forms.html.

6.8 Enforcement Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.

6.9 Permit Fee A storm water discharge permit fee shall be paid annually for each industrial facility covered under this permit. The permittee will be billed by the Department annually in May of each year and the fee is

due by June 30 of each year in accordance with s. NR 216.30, Wis. Adm. Code. A permittee may be referred to the Wisconsin Department of Revenue for the collection of any unpaid storm water fee.

Appendix A.5
Conditional Plan Modification Approval for Annual Reporting Requirements for Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572, Racine, Wisconsin – August 30, 2017

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott Walker, Governor
Cathy Stepp, Secretary
Joe Liebau, Secretary's Director

Waukesha Service Center
141 NW Barstow St., Rm.180
Waukesha, Wisconsin 53188
FAX 262-574-2117
Telephone 262-574-2100

FID# 252076990
Racine County
SW/APPR

August 30, 2017

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

RE: Conditional Plan Modification Approval for Annual Reporting Requirements for the Republic Services Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572, Racine, Wisconsin

Dear Mr. Umer:

Your requested modifications to the plan of operation for the Kestrel Hawk Landfill have been reviewed and approved subject to the conditions listed in the attached approval. The plan modification included a request to modify the environmental monitoring and annual reporting for the facility.

Condition 1 requires that the 2016 Annual Report be submitted within 60 days of the date of this letter. The report is due by June 15 of the following year in subsequent years.

Condition 2 contains the new environmental monitoring and annual reporting requirements.

If you have any questions about this approval, please contact Gerald DeMers at (414) 263-8594 or gerald.demers@wisconsin.gov or Joe Lourigan at (608) 267-9386 or joseph.lourigan@wisconsin.gov.

Sincerely,

Matt Matrise
Waste and Materials Management Program Supervisor
Southeast Region

Attachments: #1-Environmental Monitoring Tables
#2-Required Annual Reporting Information
#3-Inspection Frequency Change & Location of Leachate Pipes That Will Not be Cleaned

cc: Curtis Madsen, TRC
SER file

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION FOR THE REPUBLIC SERVICES, INC. KESTREL HAWK RDF LICENSE No. 0572

FINDINGS OF FACT

The department finds that:

1. Republic Services, Inc. (Republic) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. On August 30, 1996 the department issued a conditional plan of operation for the expanded Kestrel Hawk Landfill, referred to as the Kestrel Hawk Park Northwest Expansion Landfill, with subsequent modifications.

4. On June 9, 2017, TRC, on behalf of Republic, submitted a request to modify the annual reporting requirements for the Kestrel Hawk RDF.

5. On July 3, 2017, the department received the correct review fee of $1,650 (Invoice#11291).

6. The information submitted in connection with the modification request is contained in a June 9, 2017 "Request for a Plan Modification of the Annual Reporting Requirements for Republic Services, Inc., Municipal Waste Disposal Facility (Kestrel Hawk), Racine, Wisconsin." The request was received by the department on June 15, 2017. The request included two attachments which are attachments to this approval.

7. On July 20, 2017, the department shared a draft of this plan modification approval with Republic. Republic responded on August 4, 2017 indicating that the draft approval is consistent with Republic's requested changes to the environmental monitoring and annual reporting requirements.

8. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The department's December 28, 2005, Plan Modification Approval which established the most recent environmental monitoring and annual reporting requirements for the facility prior to this approval.

   b. The department files for the Kestrel Hawk RDF (Lic.#572).

9. Additional facts relevant to the to the review of the modification request include the following:

   a. The Kestrel Hawk landfill has been in compliance with the requirements of the December 28, 2005 Plan Modification Approval for environmental monitoring and annual reporting requirements. Some of the annual reporting requirements are already provided in other reports and submittals to the department, some are repetitive of previous years' information with little to no changes and some no longer provide the same level of informative value that they originally did, because many of the operational procedures and technology used are well established.

   b. The department met with representatives of Republic Services, Inc. and TRC on May 16, 2017 to discuss proposed modifications to the required contents of the Annual Report for the facility.

   c. Removing items that no longer provide the same value as they originally did or are already provided to the department in a different form will reduce the size of the annual report, making it more time efficient to review.

   d. The requested changes to storm water monitoring are warranted because many years of data do not show water quality indicators at a level of concern. The storm water monitoring will remain consistent with the facility's Tier 2 general industrial storm water permit and associated storm water pollution prevention plan and surface water monitoring requirements at most other active landfills.

   e. The proposal includes a revision to the dual extraction well pump maintenance frequency from monthly to semi-annually and the pump cycle meter reading frequency from weekly to monthly. Republic indicated that a low number of pumps require maintenance on the current interval and that the current meter reading schedule does not provide sufficient time for well recharge and changes to flow.

   f. The proposal includes a list of the leachate collection pipes that will not be cleaned (Attachment #3) because of pipe blockages and provides reasons for not performing the cleaning in each pipe. None of the pipes are associated with the Northwest Expansion approved in 1996. The reason for allowing these pipes to no longer be cleaned is because of the concern that continued cleaning may break the pipes or exacerbate the blockages with additional blockages caused by the cleaning equipment getting stuck and breaking off.

CONCLUSIONS OF LAW

1. The department has authority under s. 289.30, Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapter NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

2. The department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapter NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

3. The conditions of approval set forth below are needed to ensure compliance with NR chs. NR 500-538 and chs. NR 664-670, Wis. Adm. Code.

In accordance with the foregoing, the department has authority under chapter 289, Stats., to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The department hereby approves the proposed plan of operation modification for the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538 and chs. NR 664-670, Wis. Adm. Code and the following conditions:

1. The due date for the 2016 Annual Report is 60 days from the date of this letter. All future annual reports will be due on June 15 of the following year.

2. Republic Services, Inc. shall implement an environmental monitoring plan that follows the schedules, parameters and requirements contained in attachment 1 and annual reporting plan that contains the information outlined in attachment 2. This condition supersedes and replaces condition 3 of the department's December 28, 2005 environmental monitoring and annual reporting plan of operation modification approval.

This approval is based on the information available to the Department as of the date of approval. If additional information, project changes, or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity. Likewise, the Department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTIFICATION OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed or otherwise served by the department, to file your petition with the appropriate Circuit Court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

Dated August 30, 2017

DEPARTMENT OF NATURAL RESOURCES

For the Secretary

Matt Matrise
Waste and Materials Management Program Supervisor
Southeast Region

Gerald DeMers, P.E.
Waste and Materials Management Program Engineer
Southeast Region

Joseph Lourigan
Hydrogeologist Plan Review Expert
Waste and Materials Management Program

Attachment 1

Table 1a
Groundwater Monitoring NR 507 Wells

Wells	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Non-Subtitle D Wells						
Unit A				Sample and Report Semiannually April and October	04189	Elevation, Groundwater (feet above mean sea level)
007U	024	CV674			00010	Temperature, of Water taken in field ^{0}C
040U	043	BS728			00094	Field Conductivity @ 25^0 C(umho/cm)
047T	291	EH079	**abandoned**		00400	Field pH (standard units)
047TR	110	EH364			00940	Chloride (mg/L)
109T	254	BS734	**abandoned**		22413	Total Hardness, filtered (mg/L)
109TR	255	CV692	**abandoned**		39036	Alkalinity, filtered (mg/L)
109TRR	039	GN865			00950	Fluoride, filtered (mg/L)
201T	104	GM728			00930	Sodium, filtered (mg/L)
202T	100	GM730				
204T	097	GM736	**abandoned**			
204TR	308	JY923				
208T	075	GM742		Sample & Report Annually October	VOCs (ug/L)	Using EPA Solid Waste Method 8260
209T	093	GM744				
CS002	012	GN856				
CS006	054	GN876	**abandoned**			
CS006R	138	GN942				
Unit B						
109L	040	BS736				
201U	105	GM729				
204UR	098	GM737	**abandoned**			
204URR	307	JY922				
208U	076	GM743				
209U	094	GM748				
UB002	048	GN870				
UB004	047	GN869				
UB005	008	GN852				
UB007	010	GN854				
141U Area and Subtitle D Wells						
Unit A				Sample & Report Semiannually April and October	04189	Elevation, Groundwater (feet above mean sea level)
134U	033	BS747			00010	Temperature, of Water taken in field ^{0}C
141U	007	BS744			00094	Field Conductivity @ 25^0 C(umho/cm)
152U	135	GN939			00400	Field pH (standard units)
153U	136	GN940			00940	Chloride (mg/L)
Subtitle D Wells					22413	Total Hardness, filtered (mg/L)
Unit B					39036	Alkalinity, filtered (mg/L)
049L	292	EH087	**abandoned**		00950	Fluoride, filtered (mg/L)
049LR	004	GN851			00930	Sodium, filtered (mg/L)
204UR	098	GM737	**abandoned**			
204URR	307	JY922			VOCs (ug/L)	Using EPA Solid Waste Method 8260
208U	076	GM743				
209U	094	GM748				

1. Monitoring Points that are abandoned are no longer monitored.
Trip Blank (999) and/or Field Blank (997) Data must also be submitted electronically

Table 1b
Groundwater Monitoring NR 507 Wells

Wells	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Groundwater Elevation Monitoring						
005T	295	BS696	**abandoned**	Sample & Report Semiannually April and October	04189	Elevation, Groundwater feet above mean sea level
005TR	061	GN882				
005U	296	BS703	**abandoned**			
005UR	001	GN850				
005L	293	BS704	**abandoned**			
005LR	294	CV708	**abandoned**			
005LRR	002	EH075				
006T	297	BS649	**abandoned**			
006TR	063	CV671				
006U	022	BS724				
006L	023	BS732				
007T	065	BS733				
017T	273	BS684	**abandoned**			
017TR	064	GN883				
017U	274	BS685	**abandoned**			
017UR	0027	CV675				
017L	272	BS686	**abandoned**			
017LR	006	CV676				
046T	106	EH076	**abandoned**			
046TR	252	GN885				
046U	107	EH077				
047U	111	EH080				
048T	119	EH082	**abandoned**			
048TR	160	LO951				
048U	120	EH083	**abandoned**			
048UR	161	LO952				
048L	121	EH084	**abandoned**			
048LR	162	LO953				
049T	092	EH085				
049U	003	EH086				
108T	066	BS756				
108U	025	BS752				
108L	026	BS725				
109U	041	BS735				
120T	005	BS750				
120U	090	BS751				
120L	091	EH094				
126T	114	EH095				
126U	115	EH096				
126L	116	GN886				
126D	118	GN888				
134T	067	BS739				
141T	262	BS741				
146U	038	BS748	**abandoned**			
146UR	139	GN943				
202U	101	GM731				
202D	103	GM735				
209D	096	GM751				
210U	248	PL531				
211U	249	**will not be installed**				
CS001	050	GN872				
CS003	051	GN873				
CS004	052	GN874				
CS005	053	GN875				
UB001	049	GN871				
SBPZ1	301	GN896	**inactive**			
SBPZ2	302	GN897	**inactive**			

1. Monitoring Points that are abandoned are no longer monitored.

Table 1c
Groundwater Monitoring NR 635 Wells

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
	Unit A			Sample & Report Annually October		Appendix 1
CS008	013	GN857				
CS010	014	GN858				
CS012	015	GN859				
CS014	016	GN860				
	Unit B			Sample & Report Quarterly January, April, July & October	04189	Elevation, Groundwater feet above mean sea level
049L	292	EH087	**abandoned**		00010	Temperature, of Water taken in field ^{0}C
049LR	004	GN851			00094	Field Conductivity @ 25 ^{0}C (umho/cm)
UB006	009	GN853			00400	Field pH (standard units)
UB008	011	GN855			00940	Chloride (mg/L)
UB009	045	GN867			22413	Total Hardness, filtered (mg/L)
					39036	Alkalinity, filtered (mg/L)
					00950	Fluoride, filtered (mg/L)
					00930	Sodium, filtered (mg/L)
						VOCs (ug/L) Using EPA method 8260
						Appendix 1 detects from annual appendix 1 monitoring

1. Monitoring Points that are abandoned are no longer monitored.
Trip Blank (999) and/or Field Blank (997) Data must also be submitted electronically

Table 2
Interior Containment Structure Monitoring - Hazardous Waste Unit

Monitoring Pt.	DNR ID#	WUWN	Comment[1.]	Sampling & Reporting Frequency	Parameter Codes	Parameters
CS007	055	GN877		Sample & Report Quarterly	04189	Elevation, Groundwater feet above mean sea level
CS009	056	GN878				
CS011	057	GN879		January, April, July & October	00094	Field Conductivity @ 25 ^{0}C (umho/cm)
CS013	058	GN880				
CS009	056	GN878		Sample & Report Annually October		VOCs (ug/L) Using EPA method 8260
CS013	058	GN880				

1. Monitoring Points that are abandoned are no longer monitored.

Table 3
Gradient Control Structure Monitoring - NW Expansion

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
GMH1East	151	NA		Monitor & Report Quarterly January, April, July & October	00010	Temperature, of Water taken in field ^{0}C
GMH1South	152	NA			00094	Field Conductivity @ 25 ^{0}C (umho/cm)
GMH1West	153	NA			00150	Total Suspended Solids (mg/L)
					00310	BOD_5 5 day @ 20 ^{0}C (mg/L)
					00400	Field pH (standard units)
GCHW-1	157	NA		Sample Monthly Report Quarterly January, April, July & October	04189	Elevation, Groundwater feet above mean sea level
GCHW-2	158	NA				
GMH1	156	NA		Sample Monthly Report Quarterly January, April, July & October	50052	Groundwater Volume Pumped, (1000 gallons)

1. Monitoring Points that are abandoned are no longer monitored.

Table 4a
Leachate Characteristic Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
MH15B	606	NA	original or old site	Sample Monthly	00032	Leachate Volume Pumped Monthly (kgallons)
LMP6A	440	NA	NW Expansion		00010	Field Temperature °C
LMP8A	600	NA	Corr 1-6	Report Semiannually	00410	Alkalinity, total as $CaCO_3$ (mg/L)
				April and October	00310	BOD_5 5 day @ 20 °C (mg/L)
					00094	Field Conductivity @ 25°C (umho/cm)
					03582	Oil and Grease (mg/L) EPA Method 1664/1664A
					00400	Field pH, (standard units)
					00665	Phosphorous, Total (mg/L)
					00150	Total Suspended Solids (mg/L)
				Sample & Report Semiannually April & October	01027	Cadmium, total (mg/L)
					00940	Chloride (mg/L)
					00951	Fluoride, total (mg/L)
					00900	Hardness, total (mg/L as $CaCO_3$)
					74010	Iron, total (mg/L)
					01051	Lead, total (mg/L)
					01055	Manganese, total (mg/L)
					71900	Mercury, total (mg/L)
					00610	Nitrogen, Ammonia, total (mg/L as N)
					00625	Nitrogen, Kjeldahl, total (mg/L as N)
					00929	Sodium, total (mg/L)
					00945	Sulfate, total (mg/L)
						VOCs (ug/L) Using EPA Solid Waste Method 8260
				Sample & Report Annually October		Base/Neutral Extractable Compounds
						Acid Extractable Compounds

1. Monitoring Points that are abandoned are no longer monitored.

Table 4b
Leachate Headlevel Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
Old Site						
LHW100	400	NA		Sample & Report Quarterly January, April, July & October	00023	Elevation, Leachate Head feet above mean sea level
LHW101	401	NA	**abandoned**		00031	Depth of Leachate from top of liquid level to bottom in feet
LHW101R	422	NA				
LHW102	402	NA				
LHW103	403	NA				
GW/LHW104	404	NA				
LHW105	405	NA				
LHW106	406	NA				
LHW107	407	NA				
LHW108	408	NA				
LHW109	409	NA				
LHW110	410	NA				
LHW111	411	NA				
LHW112	412	NA	**abandoned**			
LHW112R	423	NA				
LHW113	413	NA				
LHW114	414	NA				
LHW115	415	NA				
LHW116	416	NA				
LHW117	417	NA				
LHW118	418	NA	**to be installed[2]**			
LHW119	419	NA	**to be installed[2]**			
LHW120	420	NA	**to be installed[2]**			
LHW121	421	NA				
LHW122	502	NA				
LHW123	503	NA				
LHW124	504	NA				
RS1	424	NA	**abandoned**			
RS1R	441	NA				
LH38	425	NA				
LHW-8,9&10	949	NA				
Northwest Expansion						
LH1	426	NA	**Phase 1**	Sample & Report Semiannually April & October	00023	Elevation, Leachate Head feet above mean sea level
LH2	427	NA	**Phase 1**		00031	Depth of Leachate from top of liquid level to bottom in feet
LH3	428	NA	**Phase 2**			
LH4	429	NA	**Phase 2**			
LH5	481	NA	**Phase 3**			
LH6	430	NA	**Phase 3**			
LH7	431	NA	**Phase 4**			
LH8	432	NA	**Phase 4**			
LH9	433	NA	**Phase 5**			
LH10	434	NA	**Phase 5**			

Monitoring Points that are abandoned are no longer monitored.
2. Leachate Head Wells will be installed during final cover construction of the "saddle area."

Table 5a
Landfill Gas Condensate Monitoring

Monitoring Pt.	DNR ID#	WUWN	Comment[1]	Sampling & Reporting Frequency	Parameter Codes	Parameters
The Whole Site:						
DL-4	610	NA	**abandoned**	Sample Monthly	99187	Volume of Gas Condensate Collected or Pumped (gallons)
DL-4R	619	NA				
				Report Semiannually	00010	Field Temperature °C
Hazardous Waste Unit:				April and October	00410	Alkalinity, total as $CaCO_3$ (mg/L)
DL-2	607	NA			00310	BOD_5 5 day @ 20 °C (mg/L)
					00094	Field Conductivity @ 25°C (umho/cm)
					03582	Oil and Grease EPA Method 1664/1664A
City of Racine LF:						
DL-6A	608	NA	can't sample from DL-6A at this time		00400	Field pH, (standard units)
					00665	Phosphorous, Total (mg/L)
					00150	Total Suspended Solids (mg/L)
NW Expansion:						
DL-7	613	NA	**will not be installed**			
				Sample & Report Semiannually April & October	01027	Cadmium, total (mg/L)
					00940	Chloride (mg/L)
					00951	Fluoride, total (mg/L)
					00900	Hardness, total (mg/L)
					74010	Iron, total (mg/L)
					01051	Lead, total (mg/L)
					01055	Manganese, total (mg/L)
					71900	Mercury, total (mg/L)
					00610	Nitrogen, Ammonia, total (mg/L as N)
					00625	Nitrogen, Kjeldahl, total (mg/L as N)
					00929	Sodium, total (mg/L)
					00945	Sulfate, total (mg/L)
						VOCs (ug/L) Using EPA Solid Waste Method 8260
				Sample & Report Annually April		Base/Neutral Extractable Compounds Acid Extractable Compounds

1. Monitoring Points that are abandoned are no longer monitored.

Table 5b
Landfill Gas Extraction Well Monitoring

Monitoring Point - DNR ID #						Sampling & Reporting Frequency	Parameter Codes	Parameters
Monitoring Pt	ID#	Comment[1]	Monitoring Pt	ID#	Comment[1]			
Old Site								
GT1	778		LGW300	750				
GT2	779		LGW301	751		Sample Monthly	46390	Vacuum (inches of water column)
CO5	780		LGW302	752			85547	Percent Methane, by volume
CO6	781		LGW303	753		Report Quarterly	85550	Percent Oxygen, by volume
CO7N	782		LGW304	754		January, April, July	46387	Valve Opening (% open)
CO7S	783		LGW305	755		& October	46388	Gas Temperature (^{0} F)
CO7X	784		LGW306	756				
GW9	788	abandoned	LGW307	757				
GW11	789		LGW308	758				
GW12	790		LGW309	759				
GW21	794		LGW310	760				
LGW36-S	770		LGW311	761				
LGW36-D	631		LGW312	762				
LGW38-S	771		LGW313	763				
LGW38-D	632		LGW314	764				
LGW39-S	772		LGW315	765	abandoned			
LGW39-D	633		GW315-R	942				
LGW40-S	773		LGW315-RR	937				
LGW40-D	634		LGW316	766				
LGW44-S	871		LGW317	767				
LGW44-D	635		LGW318	872	abandoned			
GW45-S	697		LGW318-R	933				
LGW45-DR	940		LGW319	768				
GW46-S	698		LGW320	769				
LGW46-DR	941		LGW321	873				
LGW47-S	777		LGW322	874				
LGW47-D	636		LGW323	875				
GW/LHW104	404		LGW324	876				
GW200	815		LGW325	877				
GW201	816		GW326-S	879				
GW202	817		LGW326-D	878	abandoned			
GW203	818		LGW326-DR	934	abandoned			
LGW204-R	618		LGW-326-DRR	950				
GW205	921		GW327-S	881				
GW206	922		LGW327-D	880	abandoned			
GW207	923		LGW327-DR	935				
GW208	924		GW328-S	883				
GW209	616		LGW328-D	882	abandoned			
LGW210-S	926		LGW328-DR	936				
LGW210-D	925		LGW329	886	abandoned			
GW211	617		LGW329-S	938				
GW212-S	928		LGW329-DR	637				
GW212-D	927		GW330	943				
GW213-S	930		GW331	944				
GW213-D	929		LGW332	945				
LGW214-S	932		LGW333	946				
LGW214-D	931		LGW334	947				
			LGW335	948				
Northwest Expansion								
GW401	819		GW426	844				
GW402	820		GW427	845				
GW403	821		GW428	846				
GW404	822		GW429	847				
GW405	823		GW430	848				
GW406	824		GW431	849				
GW407	825		GW432	850				
GW408	826		GW433	851				
GW409	827		GW434	852				
GW410	828		GW435	853				
GW411	829		GW436	854				
GW412	830		GW437	855	to be installed			
GW413	831		GW438	856	to be installed			
GW414	832	to be installed	GW439	857				
GW415	833	to be installed	GW440	858	to be installed			
GW416	834	to be installed	GW441	859	installed[3]			
GW417	835		GW442	860	installed[3]			
GW418	836		GW443	861	to be installed[2]			
GW419	837		GW444	862	to be installed[2]			
GW420	838		GW445	863	to be installed			
GW421	839		GW446	864	to be installed			
GW422	840		GW447	865	to be installed[2]			
GW423	841	to be installed	GW448	866	to be installed[2]			
GW424	842		GW449	867	to be installed[2]			
GW425	843	to be installed	GW450	868	to be installed[2]			
			GW451	869	to be installed[2]			

Table 5c

Landfill Gas Monitoring Probes, Blowers, Flow Meters & Site Conditions

Monitoring Point - DNR ID #						Sampling & Reporting Frequency	Parameter Codes	Parameters
Landfill Gas Monitoring Probes								
Monitoring Pt	ID#	Comment[1.]	Monitoring Pt	ID#	Comment[1.]			
GMW-1RA	700		TP-1	910				
GMW-1RB	701		TP-2	911		Sample Monthly	85547	Percent Methane, by volume
GMW-2R	798		TP-3	912			85550	Percent Oxygen, by volume
GMW-4	704	abandoned	TP-4	913		Report Quarterly	46388	Gas Temperature (^{0} F)
GMP-6A	785		TP-5	914		January, April, July		This is the air temp if no gas is present.
GMW-8	706		TP-6	915		& October		
GMW-9	707		TP-7	916				
GMW-22	716	abandoned	TP-8	917				
GMW-23A	717		TP-9	918				
GMW-23B	718		GP-10	808				
GMW-24A	719		GP-11	809				
GMW-24B	720		GP-12	810				
GMW-26A	723		GP-13	811				
GMW-27A	725		GP-14	812				
			GP-15	813				
			GP-16	814				
Blowers								
Monitoring Pt.		**ID#**	**Comment**			Sample Monthly	46390	Vacuum (inches of water column)
Blower House West		920					85547	Percent Methane, by volume
						Report Quarterly	85550	Percent Oxygen, by volume
						January, April, July	46386	Gas Flow Rate (cfm)
						& October		
						Sample & Report Annually April	VOCs using EPA Method TO-14	
Flow Meters								
Monitoring Pt.		**ID#**	**Comment**			Sample Monthly	46384	Gas Volume Pumped (cfm)
Johnson Wax Flow Meter		870						
Flare Flow Meter		746				Report Quarterly		
						January, April, July		
						& October		
Site Conditions (may be recorded electronically under this ID or under the ID for each gas probe and extraction well)								
Monitoring Pt.		**ID#**	**Comment**			Sample Monthly on the same day as the gas probes & gas extraction wells	00011	Ambient Air Temperature (^{0} F)
GP-Site		996					00025	Barometric Pressure (mm of Hg)
							46381	Trend in Barometric Pressure
							00007	Ground Conditions
								1 = Frozen, 2 = Wet, 3 = Dry
						Report Quarterly		
						January, April, July		
						& October		

Table 6
Surfacewater Monitoring

Monitoring Point	DNR ID #	Comments	Sampling & Reporting Frequency	Parameter Codes	Parameters
Surfacewater Quality					
Outfall-01	801				
Outfall-05	888				
Outfall-04	887				
SW-01	893	Gunderson near SG-1			
SW-02	894	S. of WEPCO Sub Station near SG-3			
Outfall-06	889				
Outfall-07	890	to be installed			
			Visual inspections in accordance with the storm water pollition prevention plan (SWPP) and the general tier 2 storm water discharge permit		
Stream Guages					
SG-01	900		Monitor Monthly	99520	Elevation, Surface Water feet above mean sea level
SG-03	902		Report Quarterly January, April, July & October		

Table 7
Settlement Monitoring

Grid Location				Sampling & Reporting Frequency	Parameter Codes	Parameters
Landfill Surface						
04+00N 09+00E	07+00N 08+00E	09+00N 08+00E	11+00N 12+00E		99422	Elevation, Ground Surface feet above mean sea level
	07+00N 09+00E	09+00N 09+00E	11+00N 13+00E			
05+00N 09+00E	07+00N 10+00E	09+00N 10+00E	11+00N 14+00E	Annually		
05+00N 10+00E	07+00N 11+00E	09+00N 11+00E	11+00N 15+00E			
		09+00N 12+00E		Documentation to be maintained at facility and available upon DNR request		
05+00N 11+00E	07+00N 12+00E		11+00N 16+00E			
05+00N 12+00E	07+00N 13+00E	09+00N 13+00E	11+00N 17+00E			
05+00N 13+00E	07+00N 14+00E	09+00N 14+00E	11+00N 18+00E			
05+00N 14+00E	07+00N 15+00E	09+00N 15+00E	11+00N 19+00E			
05+00N 15+00E	07+00N 16+00E	09+00N 16+00E	11+00N 20+00E			
05+00N 16+00E	07+00N 17+00E	09+00N 17+00E	11+00N 21+00E			
05+00N 17+00E	07+00N 18+00E	09+00N 18+00E	11+00N 22+00E			
05+00N 18+00E	07+00N 19+00E	09+00N 19+00E	11+00N 23+00E			
05+00N 19+00E	07+00N 20+00E	09+00N 20+00E	11+00N 24+00E			
05+00N 20+00E	07+00N 21+00E	09+00N 21+00E				
05+00N 21+00E	07+00N 22+00E	09+00N 22+00E				
05+00N 22+00E		09+00N 23+00E				
		09+00N 24+00E				
06+00N 08+00E	08+00N 08+00E	10+00N 12+00E	12+00N 13+00E			
06+00N 09+00E	08+00N 09+00E	10+00N 13+00E	12+00N 14+00E			
06+00N 10+00E	08+00N 10+00E	10+00N 14+00E	12+00N 15+00E			
06+00N 11+00E	08+00N 11+00E	10+00N 15+00E	12+00N 16+00E			
06+00N 12+00E	08+00N 12+00E	10+00N 16+00E	12+00N 17+00E			
06+00N 13+00E	08+00N 13+00E	10+00N 17+00E	12+00N 18+00E			
06+00N 14+00E	08+00N 14+00E	10+00N 18+00E	12+00N 19+00E			
06+00N 15+00E	08+00N 15+00E	10+00N 19+00E	12+00N 20+00E			
06+00N 16+00E	08+00N 16+00E	10+00N 20+00E	12+00N 21+00E			
06+00N 17+00E	08+00N 17+00E	10+00N 21+00E	12+00N 22+00E			
06+00N 18+00E	08+00N 18+00E	10+00N 22+00E	12+00N 23+00E			
06+00N 19+00E	08+00N 19+00E	10+00N 23+00E	12+00N 24+00E			
06+00N 20+00E	08+00N 20+00E	10+00N 24+00E				
06+00N 21+00E						
06+00N 22+00E	page 101 & page 115 of August 1996 Plan of Operation Report for Northwest Expansion					
06+00N 23+00E						
06+00N 24+00E						
06+00N 25+00E						

Attachment 2

The following information shall be included in the Kestrel Hawk RDF Annual Report and as provided in the attached modified 2015 annual report table of contents from the meeting between DNR and Republic Services, Inc. on May 16, 2017:

Note: Geologic units A, B, C and D cited in this document refer to the geologic units as referenced in RMT's Figure 4 - Stratigraphic Column of Geologic Units located in the bound report dated October 10, 2005 and entitled "Old Site Hydrogeologic Evaluation – Phase I Summary Report, Kestrel Hawk Landfill, Racine Wisconsin" and found in other reports prepared by RMT for the Kestrel Hawk Facility.

Part I: General

1. a listing of the amount of solid waste received in tons and the estimated remaining capacity in years; (For special waste received, do not need to include producer profile number.)

2. an overall summary of the performance of the site as a whole, any issues regarding compliance at the facility and any complaints received;

3. an updated Well Information Form (WIF) listing all groundwater monitoring wells, piezometers, leachate headwells, gas extraction wells, leachate extraction wells, and driplegs that have been replaced, abandoned or newly constructed;

Part II: Groundwater

4. a narrative containing the following evaluations:

   a. a comparison of leachate head level measurements to the hydraulic heads measured in the groundwater monitoring wells screened in the permeable sediments at the top of the Unit B layer;

   b. an evaluation of whether inward or outward flow from the landfill is occurring using groundwater monitoring well water elevations (including UB-1, 210U and 211U when it is installed) and leachate headlevel elevations;

Hazardous Waste Unit Corrective Action - 141U Area Groundwater Contamination:

5. an evaluation of the performance of the remedial/groundwater extraction system which includes at a minimum the following:

   a. a summary of operating performance for the groundwater extraction system including a general narrative explaining observed trends in the groundwater extraction system during the past year and any correlations that can be made with the performance of the system including volume of water extracted, downtime for repairs, etc. and the contaminant concentrations in the monitoring wells and the lateral and vertical extent of contamination;

      - Include a description with diagrams of any physical changes that are made to the groundwater extraction system or the surrounding area; and a description of significant maintenance/repairs made to the remediation/ groundwater extraction system during the year.

- Also include an evaluation of any new technologies to enhance the groundwater extraction system or other possible methods to remediate the groundwater that may be used in addition to, or in replacement of the current system, that may produce faster results.

b. an estimated extent and concentration of contamination in the groundwater and the influence of the remedial measures on the contamination;

- Isoconcentration maps, groundwater elevation and potentiometric maps shall be revised and submitted annually to reflect changing site conditions. The maps should delineate the zone of capture for the extraction wells.

c. a description of the degree and extent of the vinyl chloride contamination in the 141U area;

- Any change over time shall be noted.

d. an estimate of the time required to achieve the Preventative Action Limit (PAL) based on the operating performance of the system to date;

- Note that the Department understands that initial numbers are not typically representative of long term steady state conditions. Time concentration plots and/or other supporting results should be included to support the estimates.

e. regulatory contact including any updates or problems that have arisen on permits or licenses required for the remedial activities;

- Emphasis shall be placed on deficiencies discovered from oversight inspections or other types of inspections performed by the Department or Republic staff /consultants and how and when the deficiencies were corrected.

Part III: Leachate and Gas Condensate

6. an evaluation of leachate head levels in the old hazardous waste unit (Corridors 1-6) which includes at a minimum the following:

   a. tabulations of the following:

      i. volume of leachate and gas condensate removed quarterly as measured at the respective monitoring points MH15B, LMP6A, LMP8A & DL4R;

      ii. volume of leachate removed quarterly as measured at each extraction point listed above in (8).(a).(i);

   b. leachate head level evaluation and leachate extraction system performance as described in the October 10, 2005 report, prepared by RMT, Inc. on behalf of Republic Services, Inc. entitled " Plan Modification Request For Old Site Leachate Extraction System, Kestrel Hawk, Recycling and Disposal Facility, Racine, Wisconsin, License No. 00572" which includes the following:

      i. an area weighted average long-term head evaluation;

ii. an individual leachate headwell long-term evaluation;

iii. an individual leachate headwell short-term evaluation;

iv. an inflow versus outflow evaluation;

v. a report every five years with the annual report, with the first one to be completed in 2010, containing a comprehensive review of the leachate extraction system as a whole, the breakthrough of indicator parameters in the Unit B monitoring wells down-gradient of the landfill, if present, a review of leachate quality relative to the Unit B groundwater quality and the assumptions associated with the calculations of leachate head levels and leachate removal, and recommendations, if any, for more extensive response actions;

c. an evaluation of the performance of the containment structure including quantity and quality of leachate collected from the containment structure;

d. an evaluation of the effectiveness of the leachate extraction well network, the leachate headwell network and the leachate collection volume be measured, and recommendations for any replacement wells or additional wells needed to provide adequate coverage, or wells that should be abandoned;

- The evaluation in item d. above shall discuss the leachate extraction wells which have had a decrease in performance, leachate extraction well and head well cleaning and desilting, flow meters that were not functioning properly and downtime for non-functioning equipment.

7. documentation of <u>all</u> cleaning done for the following:

a. leachate conveyance piping;

b. leachate collection lines;

c. gas header piping.

- The documentation for the cleaning of items a., b., and c. above shall include a listing of which lines were cleaned, the total length of pipe cleaned and a narrative of any problems encountered and any repairs accomplished, and photos showing the cleaning.

8. A description of the variation in leachate and gas condensate quality and quantity both seasonally and year to year. The evaluation shall include monitoring points MH15B, LMP8A and DL4R. The total mass of individual volatile organic compounds extracted from each point shall be tabulated per year.

Part IV: Surface Water

9. a summary of the performance and maintenance of the sedimentation basins, and;

10. documentation that the storm water runoff permit and storm water pollution prevention plan (SWPPP) are current and complied with.

Part V: Landfill Gas

11. a summary of any detects of methane in the gas probes outside of waste shall be provided with their significance explained;

12. monthly and annual mass of methane and any specific volatile compounds extracted from the site;

    - The gas volume and quality data representing total site gas extraction shall be used to total the monthly and annual mass of methane and any specific volatile compounds extracted from the site. Volume estimates will be made using flow data at the blower house until the flow meter is installed at the flare. When this flow meter is operational, it will be used with the Johnson Wax flow meter to record gas volume extracted from the site.

13. a narrative which outlines the performance of the gas extraction system;

    - The narrative shall contain at a minimum a listing of the system downtime, any repairs performed on the system, and whether the performance of the system has been as expected.

Part VI: Contaminated Soil Processing Facility (Lic#: 3872)

14. Summary of the contaminated soil processing facility as approved in the department's September 1, 1995 plan of operation approval and modified by the department on January 26, 2007, which includes at a minimum the following:

    a. the volumes and locations of the biopiles located at the facility at the end of each year;

    b. the total volumes of new soil received and soil removed from each pile;

    c. a description of the nature of contamination in each biopile;

    d. record of operation of each soil pile, including total tonnage treated, total time of active operation, and any noticeable effects of temperature and seasonal conditions on the time period used for processing;

    e. description of the disposition of the soil used in the processing operation, whether by disposal or reuse, including any soil sent to an alternative disposal or treatment facility and disposition of any material rejected from the processing operation or subjected to additional treatment;

    f. tabulation of the gas concentration data, summary of the amount of time soil air was handled by recycle mode and by direct discharge to the atmosphere, and tabulation of any data from testing air discharged to the carbon canisters and atmosphere;

    g. tabulation of soil pile grids selected randomly for post treatment sampling and tabulation of post treatment soil testing data;

    h. summary of any problems encountered with the soil processing equipment or operation, proposed or implemented solutions, and any deviations from the approved plans;

i. a description of the source and tonnage of oil dry materials accepted for treatment and a description of the petroleum products which the oil dry materials were applied to, and;

j. a summary of any changes to the mechanical equipment, operating controls, or methods of operation due to operator experience and technical advances and any plan modifications necessary to incorporate long-term or permanent changes to the plan of operation or approval conditions;

Part VII: Wet Waste Processing Facility

15. Summary of the annual operations as required by condition number 8 of the September 17, 1999 approval and modified by the January 17, 2003 approval.
    a. summary tables of the free liquid data from pretreatment and post treatment samples;

    b. a description of the source and quantity of solid waste containing free liquids accepted including the percent solids and total volume of liquid treated;

    c. a description of the source and tonnage of absorbant materials used for treatment;

    d. a discussion of the ratio of absorbant material to solid waste containing free liquids and which absorbants work the best;

    e. a summary of any problems encountered with the processing equipment or operation proposed or implementated solutions to the problems, and any deviations from the approved plan, and;

    f. a summary of any changes to the mechanical equipment, operating controls and methods of operation due to operator experience and technical advances and any plan modifications necessary to incorporate long-term permanent changes to the plan of operation approval conditions.

Part VIII: Settlement Monitoring – See Table 7 in Attachment #1

16. A statement documenting that settlement monitoring was conducted.

Kestrel Hawk Annual Report – Table of Contents

Certifications ..... NO CHANGE

1. Introduction and General Site Information

1.1 Introduction ..... NO CHANGE
1.2 Purpose and Scope ..... NO CHANGE
1.3 Operational Summary
1.3.1 Amount of Solid Waste Received ..... NO CHANGE
1.3.2 Amount of Special Waste Received ..... IDENTIFY BY CATEGORY ONLY IN APPENDIX B - WILL NOT INCLUDE PRODUCER PROFILE NUMBER
1.3.3 Estimated Remaining Landfill Capacity ..... NO CHANGE
1.3.4 Alternative Daily Cover ..... NO CHANGE
1.3.5 141U Parcel Ownership ..... NO CHANGE
1.4 Facility Compliance
1.4.1 Air Monitoring .... REMOVE REFERENCE TO NSPS MONITORING IN APPENDIX I
1.4.2 WDNR Inspections and Compliance Activities ..... NO CHANGE
1.4.3 Kestrel Hawk Landfill Inspections and Compliance Activities ..... NO CHANGE
1.4.4 Storm Water Compliance ..... NO CHANGE
1.5 Construction Projects ..... REMOVE REFERENCE TO FIGURE 14
1.6 Environmental Monitoring Program Changes ..... NO CHANGE

2. Groundwater

2.1 Hydrogeologic Units ..... NO CHANGE
2.1.1 Unconsolidated Deposits ..... NO CHANGE
2.1.2 Bedrock ..... NO CHANGE
2.2 Groundwater Flow
2.2.1 Water Table and Leachate Head Elevations ..... GROUNDWATER FLOW MAPS (FIGURES 5 & 6) AND APPENDIX E WILL NO LONGER BE PROVIDED - FLOW CONTOURS NOT SIGNIFICANTLY CHANGED SINCE MONITORING BEGAN.
2.2.2 Potentiometric Surface of Upper Unit B ..... POTENTIOMETRIC SURFACE MAPS (FIGURES 7 & 8) WILL NO LONGER BE PROVIDED - FLOW CONDITIONS HAVE NOT SIGNIFICANTLY CHANGED SINCE MONITORING BEGAN.
2.2.3 Leachate Head and Upper Unit B Groundwater Evaluation ..... REMOVE REFERENCE TO TABLE 2 - NO CHANGE SINCE SITE HAS BEEN MONITORED

2.3 Groundwater Quality.....REMOVE THIS ENTIRE SECTION - REPEATING INFORMATION FROM QUARTERLY REPORTING
2.3.1 Background Quality
2.3.2 Evaluation of Chemistry
2.4 Proposed Revisions to Groundwater Monitoring Program.....REMOVE REFERENCE TO TABLE 6
2.5 Hazardous Waste Unit Corrective Action – 141U Area Groundwater Contamination
2.5.1 141U Area Corrective Action Summary.....NO CHANGE
2.5.2 Vinyl Chloride Assessment.....NO CHANGE

3. Leachate and Gas Condensate Systems
3.1 Hazardous Waste Unit (HWU) Leachate Evaluation.....NO CHANGE
3.1.1 Criteria Evaluation: Leachate Head and Liquid Balance.....REMOVE REFERENCE TO TABLE 7 AND MODIFY TABLE 8 TO INCLUDE LEACHATE HEAD ELEVATION FOR MOST RECENT 5 YEARS
3.1.2 Required Response Action.....NO CHANGE
3.1.3 Leachate Head Well Installation.....NO CHANGE
3.1.4 Operation/Maintenance Evaluation of Leachate Gas Well (LGW).....NO CHANGE
3.2 Leachate and Groundwater Piping System Cleaning
3.2.1 General.....NO CHANGE
3.2.2 Pipe Cleaning.....PIPES THAT HAVE BEEN PLUGGED IN THE SAME LOCATION EVERY YEAR WILL NO LONGER BE CLEANED. THESE LOCATIONS ARE IDENTIFIED IN ATTACHMENT 2. THE LOCATION OF PLUGGED PIPES WILL BE SHOWN ON FIGURE 14. DRIPLEGS IN THE GAS COLLECTION SYSTEM WILL NO LONGER BE REGULARLY FLUSHED OUT - NOT REQUIRED AT OTHER LANDFILL SITES - DRIPLEGS WILL BE FLUSHED IF IT HAS BEEN IDENTIFIED SEDIMENT IS AFFECTING THE PERFORMANCE OF THE GAS SYSTEM. TABLE 1 IN APPENDIX L WILL BE MODIFIED TO INCLUDE TOTAL LENGTH OF PIPE CLEANED - VERTICAL AND HORIZONTAL CLEANING DISTANCES ALONG WITH DRIPLEG FLUSHING WILL BE REMOVED FROM TABLE.
3.2.3 Conclusion.....NO CHANGE
3.3 Leachate Volume.....NO CHANGE
3.4 Leachate Quality.....NO CHANGE
3.5 Containment Structure Performance
3.5.1 Volume.....NO CHANGE
3.5.2 Comparison of Heads Adjacent to Containment Structure.....NO CHANGE
3.5.3 Leachate Containment.....NO CHANGE

4. Surface Water

IT IS PROPOSED TO REVISE THE SAMPLING FOR THE SURFACE WATER QUALITY MONITORING LOCATIONS TO VISUAL OBSERVATIONS AS REQUIRED BY THE INDUSTRIAL TIER 2 STORMWATER PERMIT FOR THE FACILITY. THIS CHANGE REQUEST IS DUE TO IMPROVED SITE MANAGEMENT AND TO BE CONSISTENT WITH CURRENT PRACTICE AT OTHER LANDFILLS IN WISCONSIN. ELEVATIONS AT THE STREAM GAUGE LOCATIONS WILL CONTINUE TO BE COLLECTED ON A MONTHLY BASIS.

4.1 Sedimentation Basin Performance and Maintenance ..... NO CHANGE

4.2 Quality and Quantity ..... REMOVE THIS SUBSECTION

4.3 Storm Water Inspection Report ..... REFERENCE THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

5. Landfill Gas Evaluation

5.1 Bio-Gas Production ..... REMOVE REFERENCE TO TABLE 14

5.2 Monitoring ..... REMOVE REFERENCE TO GAS MONITORING DATA IN APPENDIX I

6. Contaminated Soil Processing Facility ..... REMOVE REFERENCE TO TABLE 17

6.1 Assessment of Contaminant Sources ..... REMOVE REFERENCE TO TABLE 17

6.2 Source, Tonnage, Composition Contaminated Soil and Oil-Dry Materials ..... REMOVE REFERENCE TABLE 17

6.3 Record of Operation for Each Soil Pile ..... REMOVE REFERENCE TO WEEKLY DATA FORMS IN APPENDIX J

6.4 Description of Soil Disposition ..... NO CHANGE

6.5 Summary of Gas Concentration and Atmospheric Discharge ..... NO CHANGE

6.6 Usage of Carbon Canisters ..... NO CHANGE

6.7 Summary of Soil Sampling Post Treatment ..... NO CHANGE

6.8 Summary of Soil Processing Operations and Mechanical Equipment ..... NO CHANGE

6.9 Assessment of Process and Operation Advancements ..... NO CHANGE

THE 5-YEAR REVIEW REQUIREMENT FOR REVIEWING CONTAMINATED SOIL TREATMENT WILL BE REMOVED BECAUSE THIS TECHNOLOGY HAS BEEN CONSISTENTLY PERFORMING AT THE SITE.

7. Wet Waste Processing Facility

7.1 Introduction ..... NO CHANGE

7.2 Facility Operations ..... NO CHANGE

7.3 Permit and Other Activity ..... NO CHANGE

8. Settlement Monitoring Summary..... REMOVE REFERENCE TO TABLE 18

9. Evaluation of Site Monitoring Devices..... NO CHANGE

9.1 Groundwater..... NO CHANGE

9.2 Leachate and Gas Condensate..... NO CHANGE

9.3 Landfill Gas..... NO CHANGE

9.4 Surface Water..... NO CHANGE

10. References..... NO CHANGE

REVISED INSPECTION FREQUENCY FOR MULTIPLE ITEMS PROPOSED - SEE ATTACHMENT 2 FOR SCHEDULE PREVIOUSLY USED AND PROPOSED NEW SCHEDULE

List of Tables

Table 1 2015 Construction Projects..... NO CHANGE

Table 2 2015 Leachate and Upper Unit B Piezometer Water Level Elevations..... REMOVE THIS TABLE

Table 3 Parameters That Equal or Exceed Well-Specific PALs or ACLs..... REMOVE THIS TABLE

Table 4 Parameters That Meet or Exceed Current NR 140 Standards..... REMOVE THIS TABLE

Table 5 Summary of NR 664 Detected Compounds..... NO CHANGE

Table 6 Vinyl Chloride Concentrations - 141U Area Wells..... REMOVE THIS TABLE

Table 7 Area-weighted Average Leachate Head Elevations – 1995-2006..... REMOVE THIS TABLE

Table 8 Area-weighted Average Leachate Head Elevations – 2007-2015..... REVISE THIS TABLE TO PROVIDE THE MOST RECENT FIVE YEARS OF DATA

Table 9 Slope of Linear Regression Lines of Moving Average Leachate Elevations..... NO CHANGE

Table 10 2015 Leachate, Gas Condensate, and Groundwater Containment Structure Removal Volumes..... NO CHANGE

Table 11 Estimated Total Mass of Volatile Organic Compounds (VOCs) in Leachate/Gas Condensate Removed in 2015..... NO CHANGE

Table 12 2015 Comparison of Head Levels Adjacent to the Groundwater Containment Structure..... NO CHANGE

Table 13 Summary of 2015 Quarterly Water Quality Data from Surface Water Outfalls..... REMOVE THIS TABLE

Table 14 2015 Monthly Bio-Gas Production..... NO CHANGE

Table 15 2015 Gas Extraction System Performance..... NO CHANGE

Table 16	2015 C-Soil Biopile Soil Tonnages	NO CHANGE
Table 17	Year 2015 Summary of C-Soil Sources	REMOVE THIS TABLE
Table 18	Summary of Elevation Differences Based on Topographic Map Comparison	REMOVE THIS TABLE
Table 19	2015 Summary of Biopile Post-Treatment Analyses	NO CHANGE

List of Figures

Figure 1	Site Location Map	NO CHANGE
Figure 2	Existing Conditions Map	NO CHANGE
Figure 3	Site Plan	NO CHANGE
Figure 4	Generalized Stratigraphic Column of Geologic Units	NO CHANGE
Figure 5	High Water Table and Leachate Head Surface Map (April 2015)	REMOVE THIS FIGURE
Figure 6	Low Water Table and Leachate Head Surface Map (October 2015)	REMOVE THIS FIGURE
Figure 7	High Potentiometric Surface Map - Upper Unit "B" (April 2015)	REMOVE THIS FIGURE
Figure 8	Low Potentiometric Surface Map - Upper Unit "B" (October 2015)	REMOVE THIS FIGURE
Figure 9	Thiessen Polygons Used To Derive Area-weighted Average Leachate Head Levels and New Leachate Head Wells in Corridors 1-6	NO CHANGE
Figure 10	Area-weighted Average Leachate Heads in Corridors 1-6 (LHW-100-LHW-114)	NO CHANGE
Figure 11	Existing Conditions – Corridors 1 through 11 and Former City of Racine Landfill	ADD LOCATION OF PIPE BLOCKAGES
Figure 12	Existing Conditions and Pipe Cleaning Locations – Northwest Expansion	NO CHANGE
Figure 13	Pipe Locations in Manhole and Lift Stations	NO CHANGE
Figure 14	Pipe Cleaning Summary -- Corridors 1 through 11 and Former City of Racine Landfill	NO CHANGE
Figure 15	Leachate Conveyance System Flow Chart	NO CHANGE
Figure 16	Settlement ID Location Map - Corridors 1-6	NO CHANGE
Figure 17	Environmental Monitoring Plan	NO CHANGE

List of Appendices

Appendix A	WDNR Correspondence	INCLUDE ONLY CORRESPONDENCE GENERATED SINCE LAST ANNUAL REPORT - PREVIOUS CORRESPONDENCE PROVIDED ON A CD.

Appendix B	Solid Waste Capacity and Special Waste Summary	TABLE MODIFIED TO INCLUDE WASTE BY CATEGORY - WILL NOT SEPARATE BY PRODUCER PROFILE NUMBER
Appendix C	Facility Compliance Inspection Reports	WILL NOT INCLUDE INSPECTION REPORTS BECAUSE THEY ARE ALREADY IN APPENDIX A
Appendix D	Quarterly Detections in HWU Wells	NO CHANGE
Appendix E	Summary of Depth to Water and Water Elevations	REMOVE THIS APPENDIX
Appendix F	Quarterly Environmental Monitoring Results	KEEP QUARTERLY LETTERS OF MONITORING EVENTS SENT TO WDNR BUT REMOVE DATA TABLES
Appendix G	141U Area Corrective Action Data	NO CHANGE
Appendix H	Leachate Head Data	NO CHANGE
Appendix I	Gas Monitoring Data	REMOVE GAS MONITORING DATA AND NSPS MONITORING INFORMATION - DUPLICATING PREVIOUS SUBMITTALS.
Appendix J	Contaminated Soil (C-soil) Monitoring Data	KEEP FIGURE BUT REMOVE OPERATIONAL DATA WEEKLY (INSPECTION LOGS) - AVAILABLE FOR REVIEW AT FACILITY.
Appendix K	Wet Waste Processing Facility Data	KEEP ANNUAL SUMMARY TABLE BUT REMOVE SOLIDIFICATION LOGS
Appendix L	Pipe Cleaning Information	MODIFY TABLE TO INCLUDE TOTAL LENGTH OF PIPE CLEANED AND REMOVAL OF VERTICAL AND HORIZONTAL LENGTHS CLEANED. REMOVE FLUSHING OUT OF GAS SYSTEM DRIPLEGS.
Appendix M	Closure Bond Information	NO CHANGE

Attachment 3

Inspection Frequency Previously Used and Proposed New Schedule

ITEM	CURRENT INTERVAL	PROPOSED INTERVAL	REASON
Dual Extraction Well Pump Maintenance	Monthly	Semiannually	Low number of pumps requiring maintenance on the current interval.
Pump Cycle Meter Reading	Weekly	Monthly	Current inspection provides insufficient time for well recharge and changes in flow.

Location of Pipes That Will Not Be Cleaned

LOCATION OF PIPE	DESCRIPTION OF PIPE BLOCKAGE
Corridor 4 horizontal leachate collection pipe from interior Manhole MH-1 (Pipe Cleaning ID 21)	The pipe blockage is caused by a broken cable and jetting nozzle/hose from a 1996 cleaning from the line at MH-1. Attempts to remove these devices have been unsuccessful. This pipe consists of a 4 inch diameter ABS pipe.
Corridor 5 leachate collection pipe (Pipe Cleaning ID 20)	A blockage was discovered in this pipe during a pipe cleaning in 1992. The blockage is located approximately 500 feet horizontally from Cleanout 5 and 800 feet horizontally from MH-1. During a 1993 pipe cleaning, an attempt to remove a stuck cable and jetting nozzle/hose, permanently damaged the hose. Portions of the pipe have been cleaned from both ends of the pipe up to the blockage, but in a pipe cleaning attempt in 2015 a hose was again broken.
Corridor 6 leachate collection pipe (Pipe Cleaning ID 19)	A blockage was discovered in this pipe during a pipe cleaning in 1995. The blockage is located approximately 150 feet horizontally from Cleanout 6. Video logging of the pipe in 1995 showed a breakage in the pipe. Only approximately 125 feet of the pipe can be cleaned.
Corridor 11 leachate collection pipe (Pipe Cleaning ID 23)	For Leachate Collection Pipe 12+75N, there is a blockage located approximately 95 feet from the west end of the cleanout for MH-2 leachate.
Groundwater collection pipe between LS 6 and MH-1 (Pipe Cleaning ID 7)	A blockage to this pipe occurred during a pipe cleaning in 2013 when a hose became stuck in the pipe and broke off approximately 625 feet from MH-1.
The leachate lines in MH-1 and MH-2 (MH-1 Pipe Cleaning IDs: 3B, 4B, 7B, 20B, 21A, 25A, and 26A) (MH-2 Pipe Cleaning IDs: 17B, 18B, 19B, 23A, 24A)	Several existing blockages as detailed above. In addition, 2 hoses have become damaged in MH-1 and 2 hoses have become damaged in MH-2 in the past 2 years due to the 90 degree pipe bend at the bottom of the approximately 100 ft. long vertical riser. Republic is concerned with further damage and the possibility of jetting hoses becoming stuck and clogging these components of the leachate collection system.
Riser pipes No. 62, 64 and 81	The cleanouts for these pipes have always been described by the pipe cleaning company as not located or are inaccessible.

Appendix A.6
Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License #0572, Racine, WI
March 12, 1991

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
DNR TELEFAX NO. 608-267-3579
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MAR 12 1991

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Mr. Eric Pederson, Operations Manager
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2000 Oakes Road
Racine, WI 53406

SUBJECT: Modification to the Plan of Operation Approval for Gas and Leachate Extraction System, Land Reclamation Company Landfill, License # 0572, Racine, WI. WID: 076171008.

Dear Mr. Pederson:

I am pleased to inform you that your requested modifications to your plan of operation approval have been reviewed and approved. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on December 19, 1984.

This letter approves a gas and leachate extraction system for the Land Reclamation Company (LRC) Landfill. The proposed gas extraction system is designed to recover landfill gas from the facility for the purposes of energy recovery and emission control. Vertical and horizontal wells will be used to extract the gas. A compressor will be used to induce a vacuum and to convey the gas to a second compressor and landfill gas processing plant located off-site. Currently, LRC's landfill gas is sold to S.C. Johnson, Inc., a local manufacturing facility. The header piping will be sloped at a minimum 2% to provide for gravity flow of the condensate which is generated as the gas cools. The condensate will be removed by one of two driplegs and then conveyed to the local sanitary sewer system. The approved gas extraction system covers the first phase, which will be constructed in the site's hazardous waste unit (HWU) and corridor 7, and the second conceptual phase, which will be installed in the site's remaining corridors (8 through 11).

The approved leachate extraction system will remove leachate through the same wells installed for gas removal in the HWU. The wells have been spaced at intervals of 150 feet to optimize the volume of extracted leachate. Pneumatic pumps will be used to extract the leachate. The leachate transfer lines will

be constructed with a minimum slope of 2% to provide for gravity flow. The leachate will ultimately be discharged into the local sanitary sewer system.

The approved extraction well design consists of a 36-inch diameter borehole. Six-inch diameter Schedule 120 PVC piping will be placed within the borehole, and the lower half of the annular space filled with a washed stone pack. The lower half of the pipe will be perforated for gas and leachate entry. In order to minimize air intrusion, the upper half of the extraction well piping will not contain perforations and a bentonite seal will be placed in the annular space.

Once the extraction system is installed, start-up will take place and the system will be balanced to optimize the landfill gas withdrawal and minimize air intrusion at each extraction point. The system will be routinely monitored to determine the performance of the gas extraction system.

Fifteen leachate head wells will be installed to monitor leachate head levels in Corridors 1 through 6. The head wells will be constructed similar to the gas and leachate extraction wells. The leachate heads will be monitored on a regular basis to monitor the performance of the leachate extraction system.

An additional manhole is required to be installed just southeast of manhole-6. The leachate transfer line will enter directly into this manhole. The leachate will then be pumped directly from this additional manhole into the 21st Street sewer. The purpose of this manhole is to eliminate the connection of the leachate transfer line to the forcemain running from manhole-6 to the 21st Street sewer. This manhole will also serve to prevent the possibility of leachate backup into the groundwater containment structure.

In the evaluation of the performance of the head reduction program, we believe the most critical remaining groundwater contamination vector is the potential for downward movement of leachate from Unit A into the permeable upper strata of Unit B. Lateral movement of leachate in Unit A is of less concern due to the presence of the containment structure and barrier walls surrounding the hazardous waste unit on the south and west sides. However, the unlined portions of the waste fill area have been excavated such that only 16 to 25 feet of Unit A clay soil remains between the wastes and the upper permeable zones in Unit B. With leachate heads on the eastern and central portions of landfill base presently measured at 690 to 730 feet MSL, and hydraulic potentials of about 662 feet MSL measured at the top of Unit B, there is a strong gradient downward into Unit B. The LRC NW Expansion ISR report gave a value of 1.5 X 10E-6 cm/sec for the geometric mean of the in-field conductivity of the clay soils of Unit A. This is in marked contrast (nearly 30 times higher) to the value of 5.5 X 10E-8 cm/sec used in the performance evaluation assumptions of Section 3 of the July, 1990 Gas and Leachate Extraction System Plan. We would like to point out that with a calculated gradient of about 2.0 downward through the Unit A soils below the waste, and an in-field conductivity value as above, there is potential for significant downward movement of leachate from the waste area.

Since the hydraulic potentials at the top of Unit B are at approximately 662 feet MSL, it appears prudent to reduce leachate head potentials at the base of

the landfill to as close to 662 feet MSL as possible in order to minimize the gradients driving landfill contaminants downward. Since base elevations vary from about 660 to 670 feet MSL, the Department supports a head maintenance goal of bringing head levels as close to the landfill base elevation as can be practically accomplished.

As indicated above, we believe the implementation of the containment structure and barrier wall designs are probably effective at limiting lateral movement of landfill contaminants. However, we have not received or reviewed construction documentation for these structures, and there is not yet a complete groundwater monitoring system in place to monitor the effectiveness of these structures.

Please call Cindy Cook at (608)267-3542 or Ken Hein at (414)263-8647 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Ed Lynch - HW/3
Mary Carrington - Town of Mt. Pleasant
Trish Polston/Laura Ladislo - U.S. EPA, Region V, 5HR/13
Chuck Slaustas/Al Debus - U.S. EPA, Region V, 5HR/13
Ted Juszczyk - Creative Resource Ventures
PSS - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION FOR THE
LAND RECLAMATION COMPANY LANDFILL (# 0572)
WID 076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984. A subsequent plan modification dated March 31, 1988 required LRL to design and submit a leachate and gas extraction system.

3. On July 30, 1990, the Department received a report and associated plan sheets submitted by Warzyn Engineering, Inc. (Warzyn) entitled, " Plan Modification, Gas and Leachate Extraction System, Land Reclamation Company Landfill, City of Racine, Racine County, WI". The report was dated July 27, 1990.

4. Additional information submitted in connection with the modification request includes the following:

   a. A report and associated plan sheets submitted by Foth & Van Dyke entitled, "Leachate and Gas Extraction System Design for the Hazardous Waste Unit." The report was dated August 23, 1988.

   b. A report and associated plan sheets submitted by Warzyn entitled, "Radius of Influence Evaluation and Conceptual Extraction Well Layout", dated February 16, 1990.

   c. A report and associated plan sheets submitted by Warzyn entitled, "Design Report, Gas and Leachate Extraction Wells," dated March 19, 1990.

   d. A letter and associated plan sheet addressing the outstanding issues discussed at the March 19, 1990 meeting between the Department, LRC, Creative Resource Ventures (CRV), and Warzyn. The letter was dated March 29, 1990.

   e. A report submitted by Warzyn dated April 6, 1990 entitled, "Gas and Leachate System Design Supplement".

f. A letter dated April 17, 1990 which summarizes the results of the April 14, 1990 meeting between the Department, LRC, CRV, and Warzyn.

5. The $1500 plan review fee was received by the Department on August 1, 1990.

6. Additional documents considered in connection with the modification request include the following:

a. The Department's plan of operation approval modification to the hazardous waste closure and long-term care plan, dated March 31, 1988.

b. A letter from the Department to LRC dated January 31, 1990 which requested additional information.

c. A letter from the Department to LRC dated May 1, 1990 giving approval to begin construction of the gas and leachate extraction wells and the leachate head wells.

d. A field modification request dated December 21, 1990 submitted by LRC to the Department. The letter requests the approval to install a temporary header on the existing south slope of the site, to relocate a discharge line and to use a pneumatic pumping system instead of a submersible pumping system.

e. A field modification request, submitted to the Department by LRC, dated January 31, 1991 which requests the approval of the installation of a condensate drain line and outlines header abandonment procedures.

7. The special conditions set forth below are needed to assure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with NR 500-520 and NR 660-685, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. NR 144.44 Stats. to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION

The Department hereby approves the plan of operation modification for the Land Reclamation Ltd. landfill, subject to the following conditions:

CONSTRUCTION

1. Anti-seep collars shall be placed around all leachate, condensate or gas transfer lines as they exit the limits of waste. A minimum of five feet of compacted clay shall be placed around the collar in all directions.

2. No leachate or gas transfer lines shall exit and then re-enter the limits of waste.

3. All temporary gas and leachate conveyance lines shall be buried a minimum of two feet deep.

4. All permanent gas and leachate conveyance piping associated with the hazardous waste unit shall be installed by January 31, 1992.

5. Locks shall be installed on all the monitoring and control assembly (MCA) boxes. Also, a locking cover, or similar device, shall be placed over the heads of all extraction wells to prevent vandalism.

6. Abandonment of the tank and dripleg by the existing blower on the southeast corner of the site shall be performed according to the following procedures:

   a. Following tank and dripleg removal, the area of excavation shall be assessed for releases through visual observation and field screening using a photo-ionization detector (PID). Any contaminated soil or other media shall be properly managed.

   b. If any releases are found to have occurred, the Department shall be notified. The contaminated soil shall be removed and the need for subsequent investigation be determined.

   c. Documentation shall include a discussion covering the removal of the tank and dripleg, location of the disposal of the tank and any excavated soil, and sampling and analytical results. The documentation shall also contain 35 mm photos and a P.E. stamp. A discussion of the need for subsequent investigation shall be included.

   d. In accordance with s. NR 615.06, Wis. Adm. Code, LRC shall determine if any contaminated soil is considered hazardous waste.

7. The Department's environmental engineer assigned to this project shall be contacted a minimum of one week prior to beginning each of the construction events for each phase listed below, for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520 and s. NR 680, Wis. Adm. Code. The inspection fees for the gas and leachate extraction system construction shall be paid at the time the construction documentation is submitted.

   Construction Events

   a. Installation of the gas and leachate extraction wells.

   b. Abandonment of the tank and dripleg at the Southeast blower house.

   c. Final inspection of the leachate and gas extraction system in operation.

FURTHER SUBMITTALS

8. A plan shall be submitted to the Department by July 1, 1991 which addresses the monitoring of flow from the horizontal gas extraction wells to ensure their proper operation.

9. By July 1, 1991, LRC shall submit to the Department a narrative explaining how the extracted gas will be handled prior to completion of the gas utilization study scheduled to begin after startup of the system. The narrative shall contain the following:

   a. What percentage of the gas extracted from the site is used by S.C. Johnson?

   b. On what occasions will the gas be burned by the flare? When flared, does the burning comply with the standards established by the DNR Air Management Program?

   c. What is the capacity of the flare, and what fraction of the expected gas flow can it handle?

10. The RCRA final cover plan of operation modification proposal shall contain a narrative addressing how the FML will be repaired if repairs in the header system are found to be necessary.

11. A report shall be submitted to the Department proposing a design for a manhole to be installed to the southeast of manhole-6 (MH-6). This second, clay-lined manhole shall be designed to accept leachate and condensate from the gas and leachate extraction system. Included in the report shall be a method for determining leachate extraction rates at the new manhole. The report shall be submitted to the Department within 60 days of the date of this approval.

12. Information documenting progress in removing leachate and reducing leachate head levels within the landfill shall be submitted to the Department as part of each annual report. The following information shall be provided:

    a. Monthly tabulations of leachate removed from each extraction point.

    b. Tabulations of leachate head level measurements and maps of the leachate head distribution over the site.

    c. A comparison of the leachate head potentials to the hydraulic heads measured in groundwater monitoring wells screened in the permeable sediments at the top of Unit B (Foth and Van Dyke Unit 4).

    d. Annual and cumulative leachate volumes removed from the leachate extraction wells with comparisons to total leachate changes in storage in the waste fill area. Measurements or estimates of potential leachate drainage from the hazardous waste unit to the dewatering trench of the containment structure shall also be provided. Head measurements in Unit 2 (Foth and Van Dyke) from wells between the dewatering trench and the waste shall be evaluated and conclusions regarding gradient and resultant flow changes shall be reported.

    e. A summary of progress in the program goal of reducing leachate head levels to as close to the base as possible and a description of additional efforts needed in the next year to improve the effectiveness of the leachate extraction program.

MONITORING AND MAINTENANCE

13. All leachate conveyance piping associated with the vertical leachate extraction system and the eastern perimeter gas header piping shall be cleaned out at least once every 2 years. Documentation of this cleaning shall be submitted in the annual report.

14. The gas extraction system shall be monitored for the items listed below for the frequency shown. The results shall be submitted quarterly along with the TADs. The results shall also be submitted in a summary table as part of the annual report.

    a. Gas Extraction Wells - To be monitored monthly:

    Percent Methane
    Percent Oxygen
    Pressure
    Gas Temperature
    Flow Rate
    Valve Setting

b. Blower - To be monitored twice a month:

Flow Rate
Pressure
Percent Methane
Percent Oxygen

c. Condensate:

Volume - measured monthly
pH, COD, TSS, Conductivity - measured quarterly
The condensate shall also be monitored annually according to the annual requirements for leachate as listed in condition 15, below.

d. Miscellaneous - To be monitored monthly:

Date, time of sampling, barometric pressure and trend and ground surface condition. Any recent precipitation and a qualitative description of the vegetation and/or cap condition shall also be noted.

15. The leachate monitoring program shall include:

a. Monthly tabulations of leachate volumes from both the hazardous waste unit and the rest of the site.

b. Leachate quality measurements from both the hazardous waste unit and the rest of the site as follows:

Monthly Sample Parameters:

Parameter	ID#	Parameter	ID#
Field Conductivity (Corrected to 25°C)	00872	Field pH	00400
Leachate Volume Pumped	00032	Total Phosphorus	00133
Total Suspended Solids	00134	BOD5	00310

Quarterly Sample Parameters:
(in addition to those monthly parameters listed above)

Parameter	ID#	Parameter	ID#
Total Iron	74010	Total Nitrate + Nitrite as N	00630
Chloride	00307	COD, Unfiltered	00340
Total Sulfate	00945	Total Ammonia Nitrogen	00610
Total Barium	01007	Total Alkalinity, Unfiltered	00410
Total Manganese	00253	Total Hardness, Unfiltered	00900

Annual Sampling Parameters:

Parameter	ID#	Parameter	ID#
Total Nickel --	00128	Total Mercury ----------	00126
Total Silver --	01077	Total Potassium ---------	00076
Total Sulfite -	00740	Total Chromium ----------	00122
Total Sodium --	00929	Total Cadmium ----------	00120
Total Phenols -	00129	Total Arsenic ----------	01002
Total Copper --	00123	Total Selenium ----------	00270
Total Lead ----	00125	Total Kjeldahl Nitrogen -	00625
Total Zinc ----	00131	Total Cyanide ----------	00720
VOC Scan ------	84085		

In addition, the annual leachate analysis should include any Appendix 9 (from 7/9/87 CFR) constituents not included above.

16. Leachate head levels shall be monitored according to the following schedule. The results shall be reported quarterly and summarized in the annual report.

    a. Monthly prior to system startup, beginning with the date of this approval, to establish background levels;

    b. Weekly, after startup, for the first month;

    c. Monthly for the next five months; and

    d. Quarterly thereafter.

17. All driplegs shall be cleaned out on an annual basis. These cleanouts shall be documented in the annual report.

OPERATIONS

18. Should the Department determine at a later date that the vertical leachate extraction system is not reducing leachate head levels at an acceptable rate or is otherwise not operating effectively, LRC shall supplement this system or implement an alternative system as directed by the Department.

19. LRC shall remove leachate from all portions of the LRC landfill to the greatest extent possible on a seven day per week basis. No consideration shall be given to previously set leachate head maintenance levels.

20. Continued operation of both the gas and the leachate extraction systems shall be maintained until the end of the long-term care period.

21. A narrative shall be included in each annual report which outlines the performance of the gas extraction system. The report shall contain at a

minimum a listing of system downtime, any repairs performed on the system and whether the performance of the system has been as expected.

DOCUMENTATION

22. The construction documentation for the gas and leachate extraction system shall be submitted to the Department within 60 days of the completion of the systems construction.

23. In addition to the construction documentation proposed, LRC shall also record and submit to the Department the length of the screens of each leachate head well.

24. A cross-section drawing parallel to the main header shall be submitted to the Department in the construction documentation report.

25. A map of the base grades of the hazardous waste unit shall be submitted to the Department along with the construction documentation. The map shall be drawn using a two foot contour interval with a scale of one inch = 100 feet. Existing leachate head contours shall be submitted on a separate map. These maps shall be drawn using field data obtained during the installation of the wells.

26. The volume of leachate present in the hazardous waste unit shall be calculated and submitted with the construction documentation report. The volume calculations shall be based upon the field measurements made during the installation of the vertical extraction wells.

27. A plan sheet showing inverts at occasional points along the temporary gas and leachate conveyance line shall be submitted to the Department with the construction documentation.

The Department retains the jurisdiction either to require the submittal of additional information or to modify the approval at any time if, in the Department's opinion, further modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: _____

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management
Section

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management
Section

Bureau of Solid & Hazardous Waste Management

Edward K. Lynch, P.E.
Environmental Engineering Supervisor
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Cindy M. Cook, Environmental Engineer
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Ken Wade, Hydrogeologist
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Appendix A.7
Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC," Land Reclamation Company Landfill, EPA ID# WID076171008 February 7, 1994

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WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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DNR TDD 608-267-6897
SOLID & HAZARDOUS WASTE MGMT 608-266-2111
SOLID & HAZARDOUS WASTE TELEFAX 608-267-2768

February 7, 1994

File Ref: FID# 252076990
Racine County
HW LIC

Mr. Henry Koch, Vice President
Land Reclamation Company
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

SUBJECT: Environmental Monitoring Plan Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan, and response to "Justification for Not Installing Additional Unit B Piezometers at LRC,"
Land Reclamation Company Landfill
EPA ID#: WID076171008

Dear Mr. Koch:

The Department has completed its review of the following two documents submitted by Land Reclamation (LRC): "Proposed Amendment to Existing Environmental Monitoring Program," prepared by Warzyn, Inc. on behalf of LRC and received by the Department on July 12, 1993; and "Justification for Not Installing Additional Unit B Piezometers at LRC," prepared by RMT, Inc. and received by the Department on June 30, 1993. A plan review fee of $500 was received by the Department on January 24, 1993. A draft version of this determination was sent to LRC for comment on December 22, 1993. LRC's comments were received in the Department on January 24, 1994 and were considered or incorporated in finalization of this determination.

This letter and the attached report conditionally approve the Proposed Amendment to Existing Environmental Monitoring Program. This modification will replace the December 30, 1991 Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan except as noted below. Specifically, conditions 7 through 12 in the December 30, 1991 plan modification that required installation of monitoring equipment have been met with the following exceptions: 1) those portions of condition 7 and the Environmental Monitoring Summary that required the installation of four Unit B piezometers (UB-12, UB-14, UB-15 and UB-16) are no longer required based on documentation provided in RMT's report "Justification for Not Installing Additional Unit B Piezometers at LRC;" 2) those portions of condition 10 and the Environmental Monitoring Summary that required the installation of LMP-6 are no longer required; and 3) the requirements in conditions 7 and the Environmental Monitoring Summary for the installation of wells CS-3, CS-4 and CS-5 are still in effect and not deleted by any conditions of the attached plan modification. Conditions 13 through 22 of the December 30, 1991 plan

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modification that outline monitoring requirements and related portions of the Environmental Monitoring Summary are superseded by the conditions and monitoring summary of the attached plan modification. Condition 24 of the December 30, 1991 plan modification outlining requirements for an annual report is superseded by conditions in the attached plan modification. Finally, condition 23 has been fulfilled by the submittal of the document entitled "Environmental Sampling Plan," prepared by RMT, Inc. on behalf of LRC and received by the Department on November 3, 1993.

Please note that the Department has required that LRC's annual report be submitted each year in June instead of September. As part of that report, methane detects in the gas probes outside of the waste shall be summarized. However, any methane detects over 25% of the lower explosive limit of methane shall be reported to the Department immediately, as well as included in the annual summary. Also, well 17UR shall not be abandoned due to its inclusion as a gas monitoring point.

LRC is no longer required to submit paper copies of monitoring data that is transferred to the Department each quarter by computer diskette. Instead, LRC shall provide the Department each quarter with a paper copy of all data that is not submitted by diskette as well as a summary of groundwater analytical data. The groundwater data summary should be similar to the letter summary and summary tables that are currently provided with each quarter's water quality data.

Please attach this modification to your Plan of Operation Approval issued on December 19, 1984 and your Hazardous Waste Closure Plan dated March 31, 1988. If you have any questions regarding this modification, please call Jill Fermanich at (608) 266-5741 or Jim Bauer at (608) 267-7572.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Barbara J. Zellmer

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

attachment

cc: Ken Hein - SED
Ed Lynch - SW/3
Marty Herrick/Jill Fermanich - SW/3
Cindy Cook/Jim Bauer - SW/3
Jean Gromnicki - U.S. EPA Region 5, HRM/7J
Laura Lodisio/Allen Wojtas - U.S. EPA Region 5, HRE/8J
Katherine Martin/Mark Osten - RMT, Inc., Madison

RECEIVED
FEB 14 1994
SOLID WASTE MGT SECTION
BUR OF SOLID & HAZRD WASTE

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
MODIFICATION TO THE PLAN OF OPERATION APPROVAL
AND HAZARDOUS WASTE CLOSURE AND LONG-TERM CARE PLAN
LAND RECLAMATION COMPANY LANDFILL (#0572), RACINE COUNTY
WID076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989 the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984. A subsequent modification of the plan of operation approval and modification of the hazardous waste closure and long-term care plan, dated March 31, 1988 required LRL to submit groundwater, surface water, and leachate monitoring plans. The March 31, 1988 modification was modified on December 30, 1991.

3. On July 12, 1993, LRC submitted a request to the Department for modifications to the conditional plan of operation approval. The proposed modifications include changes to the environmental monitoring plan.

4. The information submitted in connection with the modification request includes a report and associated plan sheets submitted by RMT, Inc. on behalf of LRC and dated July 1993. The report is entitled "Proposed Amendment to Existing Environmental Monitoring Program."

5. The $500 review fee for this project was received by the Department on January 24, 1993.

6. Additional documents considered with the modification request include the following:

   * "Justification for Not Installing Unit B Piezometers at Land Reclamation Company," prepared by RMT, Inc. and received by the Department on June 30, 1993.

   * "Environmental Sampling Plan," prepared by RMT, Inc. and received by the Department on November 3, 1993.

7. Conditions of approval set forth below are needed to ensure compliance with NR 140, chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Codes.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats. to condition a plan of operation approval if the conditions are necessary to comply with chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Code. The Department also has authority under s. 144.44(3), Stats. to modify a plan of operation approval with special conditions if the conditions are needed to ensure compliance with chs. NR 500 through 520 and chs. NR 600 through 685, Wis. Adm. Code.

2. The Department has the authority pursuant to ch. NR 140, the applicable portions of chs. NR 500 through 520, and chs. NR 600 through 685, Wis. Adm. Code to require sampling of groundwater, evaluation of impacts to groundwater, and remedial measures where groundwater standards are attained or exceeded.

3. The Department has authority under s. 144.62(8)(e), Stats. to promulgate rules covering the design, construction, operation, closing and long-term care of hazardous waste facilities.

4. The Department has authority under ss. NR 685.05 and 685.06, Wis. Adm. Code to modify hazardous waste facility closure and long-term care plans.

5. The Department has authority under ch. NR 635, Wis. Adm. Code to require groundwater and leachate monitoring at hazardous waste disposal facilities.

6. In accordance with the preceding, the Department has the authority under s. 144.44 Stats. and ch. 160, Stats. to issue the following conditional plan of operation approval modification.

MODIFICATION TO THE PLAN OF OPERATION APPROVAL

AND HAZARDOUS WASTE CLOSURE AND LONG-TERM PLAN

The Department hereby modifies the plan of operation approval and the hazardous waste closure and long-term care plan modification. The conditions of this determination supersede conditions of the December 30, 1991 Modification to the Plan of Operation Approval and Hazardous Waste Closure Plan except as noted in conditions 5, 6 and 7 of this modification. This modification authorizes LRC to proceed with the environmental monitoring activities as proposed in the July 1993 submittal, provided the following conditions are met:

GENERAL

1. All aspects of environmental monitoring of the LRC landfill shall be performed in accordance with this plan modification approval and the requirements of chs. NR 500 to 520, NR 600 to 685 and NR 140 Wis. Adm.

Code. In the case of any discrepancies between the conditions of this approval and the plan of operation, or other prior environmental monitoring approvals, the conditions of this modification shall take precedence.

2. The environmental monitoring requirements contained in this modification shall commence with the issuance of this approval and shall continue until otherwise modified by the Department in writing.

3. The environmental and performance monitoring of the facility shall be conducted in accordance with the schedules of sampling locations, parameters and frequencies listed in the "LRC Environmental Monitoring Summary" attached to this approval. All requirements of the attached Environmental Monitoring Summary shall be considered as conditions of this modification.

4. In accordance with s. NR 635.10(1), Wis. Adm. Code, the design management zone (DMZ) for which groundwater protection standards apply shall be at the edge of waste along the east and south sides of the HWU (Corridors 1 through 6). The DMZ shall be 150 feet from the edge of waste on the west and north sides of the site, the south side of the former City of Racine Landfill, the south side of Corridors 8, 9, 10, and the east side of Corridors 7, and 7A. This is consistent with the requirements of s. NR 140.22(5)(j), Wis. Adm. Code, which establishes a 0 foot DMZ for facilities subject to regulation under s. NR 635.10 and a 150 foot DMZ for facilities subject to regulation under s. NR 504.04(4)(d), Wis. Adm. Code.

INSTALLATIONS AND ABANDONMENTS

5. The requirements in condition 7 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of piezometers UB-12, UB-14, UB-15 and UB-16 are waived based upon justification provided by LRC in the June 29, 1993 document "Justification for Not Installing Additional Unit B Piezometers at LRC."

6. The requirement in condition 10 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of LMP-6 is waived.

7. The requirements in conditions 7 and 9 and the Environmental Monitoring Summary of the December 30, 1991 plan modification for installation of CS-3, CS-4 and CS-5 stand. Construction of those wells shall be completed during the 1994 field season.

8. The following monitoring points will be abandoned for reasons outlined in the "Proposed Amendment to Existing Environmental Program" (Warzyn, July 1993). All probes and wells shall be abandoned in accordance with s. NR 141.25, Wis. Adm. Code.

Unit A Wells	Unit B Wells	Gas Monitoring Probes and Wells	
22M	22L	GMW3	GMW18U
40U	40L	GMW16	GMW19
10U	10LR	GMW17	GMW20
5A		GMW18	GMW21

MONITORING

Groundwater

9. The groundwater monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring wells, frequency, and parameters outlined in the Environmental Monitoring Summary and the conditions within this modification.

Leachate and Gas Condensate

10. The leachate and gas condensate monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency, and parameters outlined in the Environmental Summary and conditions within this modification.

11. All leachate conveyance piping associated with the vertical leachate extraction system and the eastern perimeter gas header piping shall be cleaned out at least once every 2 years.

12. The following points shall be cleaned out on an annual basis:

    a. All condensate driplegs.

    b. All leachate collection and transfer lines, except those associated with the vertical leachate extraction system.

    c. All leachate collection and transfer piping constructed as part of the west barrier wall.

Gas

13. The gas monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency and parameters outlined in the Environmental Monitoring Summary and conditions within this modification.

Surface Water

14. The surface water monitoring program for LRC shall consist of the sampling protocols included in the report entitled "Environmental Sampling Plan" (RMT, October 1993) and the site monitoring points, frequency and parameters outlined in the Environmental Monitoring Summary and conditions within this modification.

Cap Settlement

15. Settlement of the final cover shall be monitored by the following:

    a. An aerial topographic survey shall be performed at the site on an annual basis with the preparation of drawings with a 2-foot contour interval at a scale of 1-inch equal to 100-feet.

    b. Settlement monitoring shall be performed annually at the locations indicated on Table 1 in the attached Environmental Monitoring Summary.

    c. Vertical settlement shall be estimated to within a 1-foot tolerance. Pipe invert elevations shall be estimated assuming that settlement will be equal to cover settlement.

    d. A report shall be submitted with each annual report which includes annual and cumulative settlement, as well as pipe invert elevations and the slope between the wells.

SUBMITTALS

16. An annual comprehensive site operation and environmental monitoring report shall be submitted to the Department by June 15th of each year. This report shall be prepared in accordance with the requirements of chs. NR 635 and 680. The report shall be prepared and certified by a hydrogeologist and engineer, as appropriate, as defined by ss. NR 500.03 and 600.03, Wis. Adm. Code. The following information shall be included in the report:

    a. A high and low water table contour map of site area with water elevations in feet MSL indicated next to each identified control point. Leachate head measurements and leachate collection pipe invert elevations from unlined portions of the site shall be used to estimate water table conditions in the site interior. Leachate head measurements and leachate collection pipe invert elevations from lined portions of the site shall be used to monitor leachate head conditions in the site interior. The report text should note wells showing significant seasonal or long-term water level fluctuations.

    b. A potentiometric map of water elevations in the upper part of Unit B, using seasonal low measurements. Control points and elevations

shall be noted on the map. Significant changes or trends shall be reported.

c. A summary of groundwater flow conditions and description of any significant changes for hydrologic units A and B.

d. A description and explanation of any changes or new interpretations regarding background groundwater quality in the site area.

e. An evaluation and analysis of any potential landfill contaminant migration.

f. A description of the degree and extent of the vinyl chloride contamination in the 141U area. Any change over time shall be noted.

g. A summary of leachate data including:

i. Tabulation of leachate volumes measured at monitoring points MW15B and LMP8A and of gas condensate measured at monitoring point DL2.

ii. Description of the performance of the containment structure including:

a) Quantity and quality of leachate collected from the containment structure,

b) Head levels from wells on each side of the containment structure,

c) Comparison of the assumed heads in the dewatering trench, the interior and exterior containment structure (CS) monitoring wells, and at the adjacent landfill leachate head monitoring wells.

iii. Map of leachate head levels using the latest round of head measurements with text descriptions of any changes since the previous year. A comparison shall be made between leachate head elevations and groundwater elevations in the upper Unit B wells around the site perimeter.

iv. A description of variation in leachate and gas condensate quality and quantity both seasonally and year to year. The evaluation shall include monitoring points MW15B, LMP8A and DL2. The total mass of individual volatile organic compounds extracted from each point shall be tabulated per year.

h. Preparation of an annual site water budget including surface water runoff, percolation into waste, leachate collection and

extraction, containment structure dewatering, and estimated leakage through or into lined and unlined areas. Measurement of precipitation from the nearest weather station monitored by the State Climatologist shall be used as a component of the budget. Annual precipitation records from the State Climatologist shall be included in the report.

i. A discussion of surface water monitoring results including:

   i. Tabulation of monthly flows.

   ii. Description of seasonal and long term variations in quality and quantity, including a discussion whether the Canal is gaining or losing water relative to the adjacent aquifer, and potential water quality impacts.

j. The water elevations and quality at sub-base piezometers SB-PZ-1 and 2 shall be tabulated along with the leachate head data from the lined landfill area above the sub-base piezometers. Prior to construction of the leachate head wells, a one foot leachate head over the liner can be assumed and used for comparison to the piezometer water elevations. This data shall be used to describe whether inward or outward flow from the landfill is occurring. Groundwater elevation data from adjacent upper Unit B piezometers (4L, 10LR, and 40UB) shall be tabulated and used to describe the groundwater flow relationship between the sub-base piezometers and upper Unit B.

k. A summary of any detects of methane in the gas probes outside of waste shall be provided with their significance explained. The gas volume and quality data representing total site gas extraction shall be used to total the monthly and annual mass of methane and any specific volatile compounds extracted from the site. Volume estimates will be made using flow data at the blower house until the flow meter is installed at the flare. When this flow meter is operational, it will be used with the Johnson Wax flow meter to record gas volume extracted from the site.

   i. Any methane detects over 25% of the lower explosive limit of methane in the probes outside the waste shall be reported immediately to the Department.

l. A description of cap settlement shall be provided including significant areas of settlement for the year or areas of significant total cumulative settlement. Areas sensitive to uneven settlement such as those crossed by leachate or gas condensate lines shall be evaluated as to their potential disruption. Surveying of pipeline gradients shall be conducted where such changes could result in the loss of positive drainage. Yearly and cumulative elevation changes shall be recorded annually for each settlement monitoring point.

m. An evaluation of the performance of all monitoring devices shall be included and a detailed proposal of what actions are needed to restore or establish monitoring effectiveness at the site shall be provided.

n. Documentation of the cleaning of all leachate conveyance piping, leachate collection lines, gas header piping and condensate drip legs. Included in the documentation shall be a listing of which lines were cleaned, the distance the cleaning equipment penetrated each cleaning point, a narrative of any problems encountered and any repairs accomplished, and photos showing the cleaning.

o. A narrative which outlines the performance of the gas extraction system. The narrative shall contain at a minimum a listing of the system downtime, any repairs performed on the system, and whether the performance of the system has been as expected.

p. A narrative summarizing the performance and maintenance of the sedimentation basins shall be included in the annual report.

q. A listing of the amount of solid waste received in tons, the estimated remaining capacity in years, a summary of the status of the ongoing remedial action, an evaluation of how well the remedial action is working to satisfy the requirements of the feasibility approval and this approval, and an evaluation of all monitoring results. The portions of the annual report which require an evaluation of the remedial action and monitoring shall include the following:

   i. Leachate head level plots through time for all leachate head wells. This shall also include all existing data.

   ii. An evaluation of the performance of all remedial action work which has been implemented and an assessment of whether additional remedial actions are necessary.

   iii. An evaluation of the monitoring network which measures performance of the site and any recommendations for additional monitoring.

NOTIFICATION OF APPEALS RIGHTS

If you believe your have a right to challenge this decision, you should know that Wisconsin Statutes and Administrative rules provide time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to Sections 227.52 and Sections 227.53, Wisconsin Statutes, you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for a judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to Section 227.48(2), Statutes.

DATED: FEB 1 1 1994

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Lakshmi Sridharan, Ph.D, P.E., Chief
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LRC ENVIRONMENTAL MONITORING SUMMARY

This document outlines the environmental and performance monitoring required of this facility for the following groups:

I. Groundwater monitoring wells
II. Leachate and gas condensate
III. Gas probes and gas extraction points
IV. Surface water
V. Landfill surface elevation

Tables I through V summarize the monitoring requirements.

Quarterly sampling and analyses will be performed during the months of January, April, July, and October. Semiannual sampling will be performed during the months of January and July. Groundwater sampling for ch. NR 635 Appendix 1 parameters will be conducted during July. Monitoring data shall be submitted to the Department on computer diskette within 60 days after sampling is completed. In addition, a paper copy of data not submitted digitally shall be submitted to the Department within 60 days after the quarterly sampling event: 1) all data that is not transferred via diskette; and 2) a written summary and summary tables of all groundwater analytical results, including the following: a summary and evaluation of all ch. NR 140 exceedances according to geologic unit; a summary and evaluation of all detected compounds in the NR 635 wells, including a summary of PAL and ES exceedances; and a summary of detects of all non-naturally occurring compounds detected in all site wells. LRC shall submit 4 copies of the summary to the Bureau and 2 copies to the Southeast District.

I. Groundwater Monitoring

The groundwater monitoring program is organized into two groups according to geologic unit. Groundwater monitoring shall be conducted at the wells listed below using the associated protocols. Monitoring wells 5UR, 6L, CS-8, 141U, UB-5, UB-6, UB-7, and UB-8 shall be sampled according to protocols that fulfill the requirements of ch. NR 635, Wis. Adm. Code.

Unit A Monitoring

Wells	Frequency	Parameters
6U, 17TR, 7U, 108U, CS14, 141U, 152U, 153U, CS12, 134U, CS10, CS8, CS6R, 109U, CS2, 22U, CS1, 4U, 14UR, 5UR	Annually	VOCs, chromium, lead, selenium arsenic, barium, fluoride, manganese
141U, 5UR, CS-8	Annually	ch. NR 635 Appendix 1
6U, 17TR, 7U, 108U, CS14, 141U, 152U, 153U, CS12, 134U, CS10, CS8, CS6R, 109U, CS2, 22U, CS1, 4U, 14UR, 5UR	Semi-annually	alkalinity, COD, specific conductance, pH, potassium, iron, sodium, chloride, sulfate, hardness
141U, 152U, 153U, 134U	Semi-annually	VOCs

I. Groundwater Monitoring (continued)

6U, 6TR, 17TR, 7U, 7T, 108U, 108T, 151U, CS13, CS14, 141U, 141T, 152U, 153U, CS11, CS12, 134U, 134T, CS9, CS10, CS7, CS8, CS5, CS6R, 146U, 109U, 109TRR, CS4, CS2, CS3, 22U, CS1, 4U, 14UR, 14TR, 5UR, 5TR, SB-PZ1, SB-PZ-2	Semi-annually	elevation

Unit B Monitoring

Wells	Frequency	Parameters
6L, 17LR, UB9, 108L, UB8, UB7, UB6, UB5, UB4, 109L, UB2, UB1, 4L, 14LR, 5LRR, 141L	Annually	VOCs, chromium, lead, selenium, arsenic, barium, fluoride, manganese
6L, UB8, UB7, UB6, UB5	Annually	ch. NR 635 Appendix 1
6L, 17LR, UB9, 108L, UB8, UB7, UB6, UB5, UB4, 109L, UB2, UB1, 4L, 14LR, 5LRR, 141L	Semi-annually	alkalinity, COD, specific conductance, pH, potassium, iron, sodium, chloride, sulfate, hardness, elevation
6L, UB6, 109L, UB4	Semi-annually	Subtitle D Appendix 1

II. Leachate and Gas Condensate Monitoring

Leachate and gas condensate monitoring shall be conducted at each of the points described below using the sampling protocols provided.

Point	Frequency	Parameters
MH15B, LMP8A, DL2	Monthly	Conductivity, volume, TSS, COD, pH, phosphorus, BOD, oil and grease, temperature
MH15B, LMP8A, DL2	Annually	Sulfide, sodium, phenols, TKN, chloride, sulfate, manganese, alkalinity, hardness, fluoride, nitrate+nitrite nitrogen, ch. NR 635 Appendix 1
LHW100, LHW101, LHW102, LHW103, LHW104, LHW105, LHW106, LHW107 LHW108, LHW109, LHW110, LHW111, LHW112, LHW113, LHW114, RS1, LH38, LHW115, LHW116, LHW117, LHW118, LHW119, LHW120, LHW121	Quarterly	Elevations
DL2	Weekly	Volume
	Quarterly	pH, COD, TSS, conductivity
	Annually	Priority pollutants

III. Gas Monitoring

Gas monitoring shall be performed at the points listed below using the sampling protocols provided.

Point	Frequency	Parameters
LGM300, LGM301, LGM302, LGM303, LGM304, LGM305, LGM306, LGM307, LGM308, LGM309, LGM310, LGM311, LGM312, LGM313, LGM314, LGM315, LGM316, LGM317, LGM318, LGM319, LGM320, LGM321, LGM322, LGM323, LGM324, LGM325, LGM326S/D, LGM327S/D, LGM328S/D, LGM329S/D, LGM36, LGM38, LGM39, LGM40, LGM44, LGM45, LGM46, LGM47, GM21, GM9, GM11, GM12, GT1, GT2, GM200, GM201, GM202, GM203, GMP6A, CO5, CO6, CO7N, CO7S, CO7X	Monthly	Barometric pressure, barometric pressure trend, vacuum, methane oxygen, ground conditions, vegetation conditions, cap condition, temperature, estimated flow, valve setting, weather conditions
Blower house east	Twice monthly	Methane, oxygen, estimated flow, vacuum
	Annually	VOCs (benzene, vinyl chloride, and non-methane organic compounds)
GMW1RA, GMW1RB, GMW2R, GMW4, GMW5, GMW8, GMW9, GMW22, GMW26A GMW27A, 141U, TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9, GP1, GP2, GP3, GP4, 17UR	Monthly	Barometric pressure, barometric pressure trend, vacuum, methane, oxygen, ground conditions, vegetation conditions, cap condition, weather conditions
Johnson Wax Flow Meter[1] Flare Flow Meter[1]	Monthly	Volume

IV. Surface Water Monitoring

Surface water monitoring shall be performed at the points listed below according to the sampling protocols provided.

Point	Frequency	Parameters
Outfall 001, Outfall 002	Quarterly	Specific conductance, pH, temperature, sodium, potassium, chloride, sulfate, VOCs
SW-1, SW-2	Quarterly	Specific conductance, pH, temperature, sodium, potassium, sulfate, chloride, TSS, COD, BOD
Outfall 001, Outfall 002	Monthly	TSS, COD, BOD, estimated flow
SW-1, SW-2	Monthly	Water surface elevation

Note: 1 Monitor after Flare Flow Meter is installed.

V. Landfill Surface Elevation Monitoring

Annual measurement of all cap settlement monitoring points shall be performed at the points listed below.

4+00N 9+00E	6+00N 17+00E	8+00N 8+00E	9+00N 19+00E	11+00N 17+00E
5+00N 9+00E	6+00N 18+00E	8+00N 9+00E	9+00N 20+00E	11+00N 18+00E
5+00N 10+00E	6+00N 19+00E	8+00N 10+00E	9+00N 21+00E	11+00N 19+00E
5+00N 11+00E	6+00N 20+00E	8+00N 11+00E	9+00N 22+00E	11+00N 20+00E
5+00N 12+00E	6+00N 21+00E	8+00N 12+00E	9+00N 23+00E	11+00N 21+00E
5+00N 13+00E	6+00N 22+00E	8+00N 13+00E	9+00N 24+00E	11+00N 22+00E
5+00N 14+00E	6+00N 23+00E	8+00N 14+00E	10+00N 12+00E	11+00N 23+00E
5+00N 15+00E	6+00N 24+00E	8+00N 15+00E	10+00N 13+00E	11+00N 24+00E
5+00N 16+00E	6+00N 25+00E	8+00N 16+00E	10+00N 14+00E	12+00N 13+00E
5+00N 17+00E	7+00N 8+00E	8+00N 17+00E	10+00N 15+00E	12+00N 14+00E
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6+00N 14+00E	7+00N 20+00E	9+00N 16+00E	11+00N 14+00E	
6+00N 15+00E	7+00N 21+00E	9+00N 17+00E	11+00N 15+00E	
6+00N 16+00E	7+00N 22+00E	9+00N 18+00E	11+00N 16+00E	

Appendix A.8
Addendum to Notice of Noncompliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008 September 16, 2020

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September 16, 2020

HW CMEL
File Ref: FID 252076990
Racine County

Khalid Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Addendum to Notice of Noncompliance
Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

This letter serves as an Addendum to the Notice of Noncompliance (NON) dated December 9, 2019 to the Kestrel Hawk Landfill (KHL).

The NON outlined 15 areas of alleged noncompliance and 6 areas of concern. For each item the department recommended follow-up actions for KHL to take. Attachment A includes a summary of KHL's response submittals from January through June 2020. Thank you for these responses.

After reviewing KHL's responses to the NON, the department continues to allege that KHL is not in compliance with hazardous waste program requirements and continues to have areas of concern about other requirements. Today's Addendum updates the status of each NON item, based on the department's review of KHL's responses and further analysis, for KHL's review and action prior to further stepped enforcement. In some cases, alleged areas of noncompliance have been added. In some cases, the department makes specific recommendations to assist KHL in demonstrating and returning to compliance. In some cases, the item requires no further action and is resolved.

The updated status of each alleged area of noncompliance and area of concern is summarized below.

Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks" – Resolved
2. Manifesting of Oil-Absorbent "Socks" – Submittal of additional information recommended
3. LDR requirements for Oil-Absorbent "Socks" – Submittal of additional information recommended
4. Waste Determinations for Gas Processing Residuals – Submittal of additional information recommended

4.1 Disposal of Separator Oil – ADDED as new alleged area of noncompliance; Submittal of additional information recommended

5. Waste Determination for Contaminated Groundwater - Submittal of additional information recommended

5.1 Waste Determination for Leachate - ADDED as new alleged area of noncompliance; Submittal of additional information recommended

5.2 Waste Determination for Pipe Condensate - ADDED as new alleged area of noncompliance; Submittal of additional information recommended

6. Hazardous Waste Generator Annual Reporting - Submittal of additional information recommended

7. Hazardous Waste Generator Fees - Submittal of additional information recommended
8. LDR for POTW Discharges and NR 211 Notice - Submittal of additional information recommended
9. Closure Plan - Submittal of additional information recommended
10. Long-Term Care Plan - Submittal of additional information recommended
11. Training – Resolved
12. Contingency Plan Distribution and Licensing - Submittal of additional information recommended
13. Operating Record - Submittal of additional information recommended
14. FPOR - Resolved
15. Financial Assurance Cost Estimates - Submittal of additional information recommended

Areas of Concern

16. Tank System Requirements - Resolved
17. Gas Condensate Volumes; 90-day Storage - Submittal of additional information recommended
18. Emergency Communications – Resolved
19. Hazardous Waste Facility Annual Reporting – Resolved
20. Solid Waste Program Annual Reports – Resolved
21. Transportation of Gas Condensate - Submittal of additional information recommended

Alleged Areas of Noncompliance

1. Waste Determination for Oil-Absorbent Socks

In the NON, the department alleged a failure to make a waste determination for oil-absorbent socks as required by s. NR 662.011, Wis. Adm. Code. KHL's response information addressed both oil-absorbent socks and free product oil removed from the landfill' hazardous waste unit (HWU). KHL's June 12, 2020 "Hazardous Waste Generation Report", Table 1, indicates that KHL's "current management approach" identifies these wastes as F039 hazardous waste. The department considers this issue to be resolved.

2. Manifesting of Oil-Absorbent Socks

In the NON, the department alleged a failure to properly manifest hazardous waste for shipments of oil-absorbent socks from 2015 through 2018. In at least 5 cases identified in the NON, KHL had shipped these hazardous wastes using a uniform hazardous waste manifest, but the manifests identified the waste as a non-hazardous TSCA-regulated PCB waste. KHL's Hazardous Waste Generator Report submitted on June 12, 2020 did not dispute the department's allegation and summarized information regarding shipments. The report indicated (on page 4) that "KHL will coordinate with WDNR to update these previous manifests." The department continues to allege that KHL failed to properly manifest these shipments.

To demonstrate compliance, KHL must ensure that all shipments after June 30, 2018 are properly reflected in U.S. EPA's e-manifest system. The department **recommends** that KHL provide associated documentation.

For all improperly manifested shipments since 2015, (including manifest 005724045SKS, January 2017, which KHL omitted from Table 1 of its Hazardous Waste Generator Report), the department **recommends** that (a) KHL notify the recipient(s) of improperly manifested hazardous waste so they can take appropriate actions [such as the unmanifested waste report requirements of s. NR 664.0076, Wis. Adm. Code, or for out-of-state facilities, 40 CFR 264.76 or similar destination state requirements], and (b) KHL provide the department with documentation of this recommended actions.

3. LDR requirements for Oil-Absorbent "Socks"

In the NON, the department alleged a failure to provide a land disposal restriction (LDR) notification for shipments of oil-absorbent socks from 2015 through 2018 as required by s. NR 668.07(1)(b) and recommended that KHL provide the department with a copy of the LDR notification to be used in future shipments, and documentation that the LDR has been provided to all destination facilities that received past shipments of hazardous waste oil-absorbent "socks". KHL indicated that they intended to perform sampling and analysis on 14 gallons of skimmed oil recently placed in a container along with oil-absorbent socks but did not provide the LDR and related transmittal documentation. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL provide a copy of the LDR notification to be used for shipments of this waste, including supportive sampling and analytical information, and documentation that the LDR has been provided to all destination facilities that previously received shipments of hazardous waste oil-absorbent "socks" (and other oily wastes from the HWU) without an LDR.

4. Waste Determinations for Gas Processing Residuals

For background, KHL pipes landfill gas to a gas processing facility. Some of this landfill gas is generated from the HWU which was used for the disposal of non-hazardous and hazardous waste, including listed hazardous waste. The processing facility dewaters the gas using a chiller, compresses the dewatered gas, and injects the compressed gas into a gas pipeline that carries the gas off-site for use by S.C. Johnson in its energy production system. The liquid generated by the dewatering and compression processes (pre-separator condensate) is routed to an oil-water separator. The oil from the separator is periodically removed by a vendor and managed off-site (separator oil). The remaining liquid from the separator (separator effluent) is stored in a nearby underground tank and periodically trucked by a vendor to an on-site manhole that drains to the City of Racine sewer system.

In the NON, the department alleged a failure to make hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system and recommended that KHL submit specified information. KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment cannot be a derived-from hazardous waste. The department disagrees, as outlined in Attachment B, and concludes that each of these wastes in a derived-from hazardous waste bearing the codes of the listed wastes disposed in the HWU.

The department recognizes that this issue may not have been directly addressed by the department since the development of the gas-to-energy pipeline project, and KHL may view it as representing a new interpretation of the department's waste program. program. Please note that the department is required to enforce state its regulations and to ensure program consistency with U.S. EPA requirements. If KHL desires the department to seek additional guidance from U.S EPA, please provide the department with a written request.

Item 4.a of the NON recommended the submittal of waste determinations for the three condensate waste streams. The NON discussed the need for these waste determinations to address hazardous waste characteristics as well as listings. No information regarding characteristics were provided. Therefore, the department continues to allege that KHL has failed to make proper hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system, as required by s. NR 662.011.011, Wis. Adm. Code.

KHL's March 26, 2020 letter states, "The collected oil is hydraulic oil that was added to the compressor at the biogas building" and included an SDS for a Castrol hydraulic fluid product. No further information, such as a waste profile or analytical information, was provided. The department respectfully disagrees with this statement. Though it is possible that the separated oil phase may contain hydraulic fluid that leaks from the compressor, it is also likely that this phase contains the lighter fraction of landfill gas constituents that are removed during chilling

and compression. This should be considered in KHL's waste determinations. To demonstrate compliance, the department **recommends** that KHL provide the department with waste determinations, and supportive information, for the three landfill gas condensate wastes that at a minimum consider the ignitability and toxicity characteristics. This effort should also develop the information need to comply with land disposal restriction (LDR) requirements. The department believes that KHL should implement a waste sampling and analysis procedure to support this waste determination. (It is noted that page 4 of KHL's June 12, 2020 letter indicates indicated that the separator oil will be sampled and evaluated in June 2020; this is also mentioned in Attachment 4's table titled "Kestrel Hawk Landfill - Waste Determination Outline.")

Additional discussion regarding pre-separator condensate: In Attachment 2 of its April 14, 2020 letter, KHL provided laboratory analytical information for "Biogas Building Condensate Tank Testing"; none of these results appear to exceed hazardous waste characteristic limits. The chain-of-custody form indicates that this sample was obtained on March 16, 2020, from the "GC Tank." T, so the department assumes that KHL is using this analytical data to support its waste determination of the condensate after the oil-water separator (separator effluent). However, information was not supplied to show that the sample collected was a representative sample as defined by s. NR 660.10(101) Wis. Adm. Code. If this data is used to support the waste determination, the department **recommends** that KHL provide information showing that the sample collected was a representative sample of the separator effluent waste. If this information is not available, KHL should consider performing a new sampling and waste determination process.

Additional discussion regarding separator oil: In developing the waste determination for the separator oil, it would be informative to compare the generation rate of oil-phase quantities from the separator (which appears to be about 100 gallons per month, per Attachment 2 of KHL's March 26, 2020 letter) to the hydraulic fluid consumption rate of the compressor (i.e. the rate at which fluid is added to the compressor). The department **recommends** that KHL provide this evaluation.

Item 4.b of the NON recommended the submittal of information regarding quantities and management practices for separator oil. No additional information is requested.

Items 4.c and 4.d of the NON discussed the disposal of separator oil and recommended the submittal of information regarding off-site shipments of separator oil and compliance with used oil requirements. This is addressed in Addendum Item 4.1 below.

4.1 Off-site Shipments of Separator Oil (New alleged area of noncompliance)

This is a new alleged area of noncompliance regarding the improper disposal of separator oil, a listed hazardous waste. KHL's March 26, 2020 response letter shows that KHL shipped approximately 5,800 gallons of this listed hazardous waste (mixed with used oil from KHL's machine shop) on 22 occasions as non-hazardous used oil to Safety's Kleen's used oil refinery in East Chicago, Indiana, from January 15, 2005 to January 7, 2020. This facility is not permitted to accept hazardous waste. More specifically, the department alleges noncompliance with four requirements.

4.1.a Failure to arrange for hazardous waste to be treated, stored or disposed at a properly authorized facility in accordance with s. 291.21(9), Wis. Stat.

4.1.b Failure to make a proper waste determination in accordance with s. NR 662.011, Wis. Adm. Code.

4.1.c Failure to prepare and use a manifest in accordance with ss. NR 662.020 to s. NR 662.023, Wis. Adm. Code.

4.1.d Failure to meet the requirements of s. NR 679.10(a), Wis. Adm. Code, by failing to properly manage a mixture of used engine oil and a listed hazardous waste.

The department **recommends** that KHL provide its plan to ensure that compliance with these requirements is achieved.

5. Waste Determination for Contaminated Groundwater

In the NON, the department alleged a failure to make hazardous waste determinations for contaminated groundwater from the 141U extraction system and other collected groundwater affected by the HWU as required by s. NR 662.011.011, Wis. Adm. Code, and recommended KHL submit the waste determination(s). KHL did not provide the waste determinations. Rather, In Attachment 3 of its April 14, 2020 letter, KHL included a legal memorandum dated April 9, 2020, asserting that leachate and contaminated groundwater (and other liquids so discharged) are not and are never listed F039 hazardous waste (and do not carry any other listing) due to the domestic sewer exclusion (DSE) contained in s. NR 661.04(1)(a)2., Wis. Adm. Code, as the liquid is being ultimately discharged under the DSE to the City of Racine's sewer system. If excluded under the DSE, it would mean that KHL would no longer count this liquid as hazardous waste (for example, for reporting purposes) and that these liquids would not be subject to hazardous waste handling and management requirements. As it relates to leachate, this assertion appears to be brand new, changing KHL's long-standing position and reporting approach that leachate from the HWU is F039 hazardous wastes. The department disagrees, as outlined in Attachment C, and concludes that each of these wastes is a derived-from hazardous waste.

Therefore, the department continues to allege that KHL has failed to make proper hazardous waste determinations for this contaminated and collected groundwater, and wastes that result from mixing any of these liquids with other liquids. To demonstrate compliance, the department **recommends** that KHL submit accurate waste determinations for these wastes.

5.1 Waste Determination for Leachate (New alleged area of noncompliance)

This is a new alleged area of noncompliance. Failure to make a proper waste determination as required by s. NR 662.011.011, Wis. Adm. Code for leachate from the HWU and wastes that result from mixing any of these liquids with other liquids. As outlined in Attachment C, the department disagrees with the position that leachate is excluded under the DSE before it enters the public sewer system. To demonstrate compliance, the department **recommends** that KHL develop and submit accurate waste determinations for these wastes.

5.2 Waste Determination for Pipe Condensate (New alleged area of noncompliance)

This is a new alleged area of noncompliance. Failure to make a proper waste determination as required by s. NR 662.011.011, Wis. Adm. Code for gas condensate collected from gas transmission piping for HWU landfill gas and wastes that result from mixing any of these liquids with other liquids. As outlined in Attachment B, the department disagrees with the position that gas condensate collected from gas transmission piping is not a derived-from hazardous waste. To demonstrate compliance, the department **recommends** that KHL develop and submit accurate waste determinations for these wastes.

6. Hazardous Waste Generator Annual Reporting

In the NON, the department alleged a failure to accurately report hazardous waste quantities for several waste streams for calendar years 2015 through 2018 and recommended that KHL submit a report to address all potentially hazardous solid wastes and include accurate hazardous waste quantities. In its June 12, 2020 letter, within the "Hazardous Waste Generator Report" ("HWGR") developed by TRC, KHL discussed and presented

updated hazardous waste quantities. Table 2 of the HWGR included revised hazardous waste quantities for the years 2014 through 2019, based in part on shipment information summarized in Table 1 for parts cleaner and HWU oily wastes, and modified quantities for "hazardous waste sent to the Racine WWTP." Regarding the reported "Racine WWTP" quantities, Table 1 the HWGR asserts that the waste is excluded based on the domestic sewage exclusion (DSE). The HWGR was not complete and did not contain all of the information addressed in the NON. Therefore, the department continues to allege that KHL has failed to submit annual reports for the years 2014 through 2019, as required by s. NR 662.041, Wis. Adm. Code.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL revise and submit the HWGR (or a similar report) to consider and account for the following wastes, for 2014 through 2020:

- Discarded equipment or materials contaminated by F039 or other "derived-from" or "mixture rule" hazardous wastes.
- Discarded filters or other components used in hazardous waste liquid pumping or gas processing).
- Wastes removed or exhumed from the HWU.
- Solids or debris removed from the piping, pump station and manhole systems that convey hazardous wastes.
- Hazardous waste from heavy equipment maintenance activities (other than parts cleaner and used oil).
- Unacceptable wastes that are hazardous waste and delivered to the current landfill (and not retrieved by the transporter or generator) that KHL must manage off-site.
- Leachate, gas condensate and collected contaminated groundwater associated with the HWU, and other liquids that mix with these wastes.
- Wastes generated by the landfill gas chiller and compressor equipment, and other liquids that mix with these wastes.

In its letter dated April 14, 2020, KHL suggests that future annual reports would not include leachate and condensate. As indicated earlier in this letter, the department would disagree with this approach.

7. Hazardous Waste Generator Fees

In the NON, the department alleged a failure to pay environmental repair tonnage-based fees as required by s. 289.67(2), Wis. Stat., and recommended that KHL submit a fee reconciliation analysis and pay any unpaid fees. In its June 12, 2020 letter and HWFR (see Section 3.3 and Table 2), KHL claimed that even though KHL has self-reported as a large quantity generator for many years, KHL has not underpaid because it has been and is a small quantity generator (for which lower base fee applies) due to its assertions that its leachate (and other HWU liquids) and biogas system condensate wastes are not hazardous wastes. As noted previously the department disagrees with these assertions. KHL remains a large quantity generator. Also, as discussed in item 6 above, other hazardous wastes may not have been accurately reported in fee computations. Therefore, the department continues to allege that KHL has failed to submit accurate annual report fee computations and payments for the years 2014 through 2019.

To demonstrate compliance, and as previously recommended in the NON, the department **recommends** that KHL submit accurate fee computations for the years 2014 through 2020 and promptly pay any fees that are due.

8. LDR for POTW Discharges and NR 211 Notice

In the NON, the department alleged a failure to maintain a one-time written LDR notification form for hazardous waste discharged to the City of Racine sewer system, as required by s. NR 668.07(1)(g), Wis. Adm. Code, and recommended that KHL develop and provide a copy of this form. KHL did not submit this LDR notification. Rather, as discussed earlier, KHL provided a legal memorandum dated April 9, 2020 asserting that liquids

discharged to the sewer leachate are not hazardous waste due to the domestic sewer exclusion (DSE). The department disagrees. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, the department **recommends** that KHL provide the LDR notification form to the POTW and provide the department with documentation of this action, along with a copy of the form.

Please note that s. NR 211.17, Wis. Adm. Code, requires notifications to the POTW, the EPA Region V waste management division director and the department's bureau of waste management of the discharge of certain hazardous wastes at certain quantities. The bureau of waste management has no record of such notifications. To demonstrate compliance, the department **recommends** that KHL provide the required agencies with the applicable reports for the past three years.

9. Closure Plan

In the NON, the department alleged a failure to address the closure plan contents required in s. NR 665.0112, Wis. Adm. Code, and recommended that KHL update and submit a closure plan that met these requirements, and that clarified other issues identified in the NON. In its response letter dated June 12, 2020, KHL provided a closure status report (CSR) for corridors 1-6, prepared by TRC and dated June 2020. The CSR appears to contain most of the required information outlined in s. NR 665.0112, Wis. Adm. Code, but failed to include a closure schedule. Therefore, the department continues to allege that KHL has failed to comply with this requirement.

To demonstrate compliance, the department **recommends** that KHL ensure that the closure plan include a schedule for final closure, as required by s. NR 665.0112(2)(f), Wis. Adm. Code, and provide documentation to the department.

(One another note, Section 4.0 of the CSR suggests that the HWU is “closed” because certain capping activities have been previously competed. Is stated earlier, the department does not agree that closure in accordance with s. NR 665.0115, Wis. Adm. Code has occurred. This can be accomplished only when the department approves closure certification for the facility and long-term care begins).

10. Long-Term Care Plan

In the NON, the department alleged a failure to meet the long-term care plan requirements of s. NR 665.0118(3), Wis. Adm. Code, and recommended that KLH develop a hazardous waste long-term care plan that addresses items identified in the NON. In its June 12, 2020 letter KHL provided an updated long-term care plan and cost estimate for the HWU (developed by TRC, dated June 2020). This plan appears to address the minimum content requirements listed in ss. NR 665.0118(3)(a) though (e), Wis. Adm. Code, but should be revised to specifically address the following specific “activities that will be carried on after closure”:

a. A description of the site-specific requirements related to the operations and maintenance for groundwater corrective action program, including the applicable WDNR approval document(s).
b. A description of the site-specific requirements for leachate removal and leachate level criteria (e.g. provisions of KHL’s October 19, 2005 modification, and Condition 1 the December 28, 2009 approval letter), including any applicable WDNR approval document(s), such as the March 21, 1991 approval that is referenced in the 2009 letter.

The department continues to allege that KHL has failed to comply with this requirement. To demonstrate compliance, the department **recommends** that KHL ensure that the long-term care plan describe these activities, and that KHL and submit this revised long-term care plan as a proposed plan of operation modification to supplement its current approved closure/long-term care plan (originally dated May 1996) for department approval.

In this way, the approved long-term care plan would facilitate compliance with both the NR 500-series and NR 600-series long-term care plan requirements.

11. Training

In the NON, the department alleged a failure to maintain the training program and associated documentation as required by ss. NR 665.0016(1) through (5), Wis. Adm. Code. In its June 12, 2020 letter KHL provided a document titled "Hazardous Waste Training Program" (dated June 2020, prepared by TRC) that demonstrated substantial compliance with this requirement. The department considers this alleged area of noncompliance to be resolved.

12. Contingency Plan Distribution and Licensing

In the NON, the department alleged failure to properly distribute and its contingency plan as required by s. NR 665.0053(2), Wis. Adm. Code, and recommended that KHL distribute the plan to local emergency response entities. In its April 29, 2020 letter KHL provided documentation showing that copies of a June 2018 contingency plan for the closed hazardous waste unit were distributed to four local emergency response entities.

In its June 12, 2020 letter KHL provided a document titled "Hazardous Waste Unit Contingency Plan" (dated June 2020, prepared by TRC) which appears to represent a further updated contingency plan. However, no documentation was provided that this updated plan was properly distributed to local emergency response entities. Therefore, the department continues to allege this area of noncompliance.

To demonstrate compliance, the department **recommends** that KHL submit copies of the June 2020 contingency plan to local emergency response officials as required by s. NR 665.0053(2), Wis. Adm. Code, and provide documentation to the department.

Also, the NON had also identified the potential need for a license modification for changes to the contingency plan. For the purposes of this compliance assessment, the department no longer believes this is needed.

13. Operating Record

In the NON, the department alleged a failure to maintain the operating record required by s. NR 665.0073(2), Wis. Adm. Code, and recommended that LHL provide its plan to achieve compliance.

In its April 14, 2020 letter, KHL indicated that the operating record would be addressed after further discussions with the department regarding the closure plan and long-term care plan. The department does not see how these issues are connected.

Section 4.0 of the Closure Status Report submitted with its June 12, 2020 letter states that the operating record requirements are not applicable because the HWU has achieved the closure standard. This is not correct. As discussed earlier, closure has not occurred. The following applicable operating records are specifically identified to be maintained until closure, and have not been provided:

NR 665.0073(2)(a) - for hazardous waste disposed, the waste descriptions, quantities, and dates.
NR 665.0073(2)(b) - location and quantity of each hazardous waste (map or diagram), with references to the manifest numbers.
NR 665.0073(2)(f) - records and results pertaining to groundwater monitoring and cleanup
NR 665.0073(2)(s) - certifications of major repairs of tank systems

The department continues to allege this area of noncompliance. To demonstrate compliance, and as previously recommended on the NON, the department r**ecommends** that KHL provide a plan to properly establish and maintain the operating record.

14. FPOR

The NON alleged a failure to have an FPOR that addresses delayed closure. After further evaluation and for the purposes of this compliance assessment, the department currently believes that this FPOR is not needed. This alleged area of noncompliance is rescinded.

15. Financial Assurance Cost Estimates

The NON alleged a failure to maintain closure and long-term care cost estimates as required by ss. NR 665.0142(1)(b) and NR 665.0144(1)(a), respectively, and recommended that KHL revise and submit these estimates.

Regarding closure costs: No revised closure cost estimate was discussed or provided in KHL's responses. Therefore, the department continues to allege this area of noncompliance. As indicated in the NON, this cost estimate should:

- include all costs related to hiring a third party to do the work,
- properly account for costs that are not appropriate to be included in contingency costs, and
- includes an explanation of the basis for the cost estimate.

Regarding long-term care costs: For long-term care, in its June 12, 2020 letter KHL provided an updated cost estimate as part of the updated long-term care plan for the HWU (developed by TRC, dated June 2020). As recommended in the NON, this plan addressed costs related to hiring a third party to do the work (separate from contingency costs) and provided explanations for many of the cost estimate items. However, the cost estimate requires further revision:

- The costs did not appear to include hazardous waste management costs for the management of condensate from the biogas area r (as discussed in Item 4). This should be corrected.
- Footnote 7 refers to a vendor contract costs "for routine operation of landfill gas system, and routine monthly landfill gas plan maintenance." KHL should ensure that all utility costs (e.g. electrical costs for the chiller and compressor) that may not be borne by the vendor are included.

To demonstrate compliance, the department **recommends** that KHL develop and submit revised closure and long-term care cost estimates to address these issues.

Areas of Concern

16. Tank System Requirements

In the NON, the department expressed concern regarding KHL's compliance with the tank system requirements of subchs. B, J, BB and CC of NR 665, Wis. Adm. Code. After further evaluation, and for the purposes of this compliance assessment, the department concludes that these requirements do not apply. The department considers this area of concern to be resolved.

17. Gas Condensate Volumes; 90-day Storage

In the NON, the Department expressed concern related to KLH's compliance status with generator tank system requirements regarding 90-day storage limits for condensate materials from the oil-water separator. The department requested that KHL provide revisions to a table it had provided, and an explanation regarding future compliance assurance. KHL did not address these recommendations. Rather, KHL asserts that the condensate materials handled in this tank system are not hazardous waste. As discussed earlier, the department disagrees with this assertion. This issue remains an area of concern. To demonstrate compliance, the department again **recommends** that KHL provide the information addressed in Item 17 of the NON; this called for:

- Condensate removal quantities for October, November and December of 2015. Please provide the previous Table 5 updated to include this information. ("Table 5" was included in Attachment 7 of TRC's report dated March 4, 2019).
- A description of how KHL intends to ensure that the 90-day generator storage limit will not be exceeded for any hazardous waste within the Gas Condensate System, including for example the oil generated within the oil-water separator unit, the effluent generated within the oil-water separator unit, and the effluent stored in the underground tank.

18. Emergency Communications

NON Item 16 reiterated the request for information regarding emergency communications. KHL provided this information in its April 14, 2020 response. The department considers this area of concern to be resolved.

19. Hazardous Waste Facility Annual Reporting

In NON Item 19, the department expressed concern regarding KHL's compliance the facility annual report requirements of s. NR 665.0075, Wis. Adm, Code, and recommended that KLH submit the required annual report information for calendar year 2019 by March 30, 2020. In its various responses to the NON, KHL provided the recommended information. The department considers this area of concern to be resolved.

In the future, the department suggests that KHL submit the facility annual report in a letter to the department's hazardous waste program.

20. Solid Waste Program Annual Reports

In NON Item 20, the department expressed concerns regarding to the accuracy of various liquids quantities reported in solid waste annual reports. KHL's letter dated June 12, 2020 included a report titled "Hazardous Waste Generation Report" (June 12, 2020, prepared by TRC); Appendix D contained updated estimates of volumes at various monitoring points for 2014 through 2019. For the purposes of this hazardous waste compliance assessment, no additional information is needed at this time. The department considers this area of concern to be resolved.

21. Transportation of Gas Condensate

In NON Item 20, the department expressed concerns regarding the vacuum truck transport of condensate waste from the biogas processing area to the Landfill Liquid Conveyance System. If the route involves property that are not "on-site" as defined in s. NR 660.10(85), Wis. Adm. Code, the transportation may be subject to the requirements of ch. NR 663, Wis. Adm. Code. The NON recommended that KHL evaluate the route(s) and provide the department with the results. KHL's other responses assert that the condensate is not hazardous waste and did not provide the recommended information. As discussed earlier, the department disagrees with this assertion. This issue remains an area of concern. To demonstrate compliance, the department again **recommends** that KHL provide the information addressed in Item 21 of the NON, which called for the following:

The department recommends that KHL evaluate whether the routes used by the vacuum truck are "on-"site" in order to determine if KHL is arranging or providing for hazardous waste transportation. The department recommends that KHL, within 60 days of this letter, provide a summary of this analysis and its conclusions.

Wrap-up

The department encourages KHL take immediate action to address the unresolved areas of alleged noncompliance and areas of concern identified in the NON dated December 9, 2019 and further clarified in today's Addendum. Please note that the department has provided recommendations in today's letter. These recommendations have been shown in bold and underlined font within this letter. The department requests that KHL address these recommendations and provide the department with the associated information within 60 days of the date of this letter.

Please also note that future submittals should include the authorization and certification statements as required by s. NR 670.011, Wisc. Adm. Code. If the response relies on technical information or data, such as design drawings and specifications, or engineering studies, such information should be certified by a qualified professional engineer in accordance with s. NR 670.014(1), Wisc. Adm. Code.

While we appreciate receiving your written responses by the date(s) specified, please understand that the department alleges that you remain in noncompliance and will remain in noncompliance until all identified areas are addressed. Failure to respond in a timely manner may result in escalated enforcement actions. The alleged violations may also be enforced by the United States Environmental Protection Agency. As part of its hazardous waste regulatory program, the department may perform additional inspections at this facility to ensure compliance with chapters NR 660 to 679, Wisconsin Administrative Code. Please note that Chapters NR 660 to 679 of the Wisconsin Administrative Code are available on the department's website at http://dnr.wi.gov/topic/Waste/Laws.html

If we can provide further assistance on these issues, please contact me at douglas.coenen@wisconsin.gov or 608-264-9258. Thank you for your cooperation.

Sincerely,



Doug Coenen, P.E.
Waste Management Specialist
Waste and Materials Management Program

cc: Facility File – DNR SE Region
Gerald DeMers, DNR
David Buser, DNR
Jason Knutson, DNR
Jonathan Hotstreet, TRC

Attachment A
KHL Responses to the NON

Letter dated Jan. 22, 2020: Noted that the identified NON issues have developed over a long time period.
Letter dated Jan. 30, 2020: Provided a work plan and schedule; list of key documents
Letter dated March 5, 2020: Provided high-level conclusions and an updated document inventory
Letter dated March 12, 2020: Addressed NON items 1 and 4
1: Oil from leachate in HWU is F039 hazardous waste
4: Legal memo asserting that condensate is not a listed hazardous waste
Letter dated March 26, 2020: provided additional information/discussion regarding Item 4 (oil-water separator streams)

- Stated that non-oil (condensate) is non-characteristic
- Stated that oil from separator is hydraulic oil from compressor; determined as non-hazardous using generator knowledge; managed by Safety-Kleen along with machine shop used oil
- Provided oil quantities

Letter dated April 14, 2020: Addressed various NON items:
1,3,6: Profile and LDR for absorbent socks and skimmed oily material
4,6,16,17,23: Condensate testing ("GC Tank") indicates not characteristically hazardous
6,8,16: Legal memo asserting that leachate is not a solid waste due to DSE; KHL does not plan to include leachate in future annual reports.
5,8,16: Refers to legal memo similarly asserting that groundwater is not a solid waste due to DSE
6: Provided table summarizing waste determinations
9,10: Capping summary (to be followed by Closure Status Report); request to discuss updated C/LTC Plan
14: FPOR not necessary to address delayed closure.
18: Emergency communications provided via cell phone.
19: Letter for annual reporting will begin 2021 if needed
20: Solid waste annual reports to be updated
Letter dated April 29, 2020: Addressed various NON items
1,2,3,6: Skimmed oil shipment manifest (April 2020)
12: Copies of contingency plan distribution letters to emergency response entities
Letter dated June 12, 2020: Addressed various NON items
6,7,20: Provided June 12, 2020 Hazardous Waste Generation Report (TRC); KHL plans to update oil manifests; Solid waste annual reports volumes are accurate
9,13,14,15,19: Provided June 2010 Closure Status Report (TRC)
11: Provided June 2020 training program report (TRC)
12: Provided June 2020 Contingency Plan (TRC)
10,15: Provided June 2020 Long-Term Care Plan (TRC)

Attachment B
Landfill Gas Condensate

As a matter of background, it is the department's understanding that KHL pipes landfill gas to its gas processing facility. Some of the landfill gas is generated from the hazardous waste unit that was used for the disposal of non-hazardous and hazardous waste, including listed hazardous waste. The processing facility dewaters the gas using a chiller, compresses the dewatered gas, and injects the compressed gas into a gas pipeline that carries the gas for use by S.C. Johnson in its energy production system. The liquid generated by the dewatering and compression processes is routed to an oil-water separator (pre-separator condensate). The oil from the separator is periodically removed by a vendor and managed off-site (separator oil). The remaining liquid is routed to a nearby underground tank (separator effluent); these liquids are periodically trucked by a vendor to an on-site manhole that drains (along with other liquids such as leachate) to the City of Racine sewer system.

In Item 4 of the NON, the department alleged a failure to make hazardous waste determinations for the three landfill gas condensate wastes generated at the landfill gas chiller/compressor system and recommended that KHL submit specified information. KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment cannot be a derived-from hazardous waste. The department disagrees, as outlined below, and concludes that each of these wastes in a derived-from hazardous waste bearing the codes of the listed wastes disposed in the hazardous waste unit.

Contained/Uncontained Gases

KHL's letter dated March 12, 2020, included a legal memorandum from Jones Day, March 12, 2020 ("March 12 Legal Memo") concluding that the condensate from the landfill gas chiller equipment is not a hazardous waste. The key to this argument is the preposition that landfill gas is not a solid waste. More specifically, it stated:

> "In order to be a hazardous waste, a material must first be a solid waste. Wisc. Stat. §289.01(12); 42 U.S.C. §6903(5). The definition of "solid waste" requires that the material be in a solid, liquid or contained gaseous form. Wisc. Stat. § 289.01(33); 42 U.S.C. § 6903(27). Here, the landfill gas is not a contained gas at the point of generation when it exits the landfill. Since the landfill gas is not a solid waste and therefore cannot be a hazardous waste, the Condensate is not derived from the treatment of a hazardous waste. Similarly, the mixture rule does not apply because landfill gas is not a listed hazardous waste – indeed, the landfill gas cannot be a hazardous waste at all because it is an uncontained gas that is not a solid waste".

The March 12 Legal Memo also cited a United States District Court for the Northern District of Illinois opinion in 2016, which supported EPA's prior position that uncontained methane gas in a utility pipeline is not hazardous waste. The department does not disagree with this position. The department also agrees that landfill gas is not explicitly listed as a hazardous waste.

The March 12 Legal Memo states that landfill gas is not a contained gas at the point of generation when it exits the landfill. The department agrees that gas in the piping used to remove gas from the landfill is not a solid waste. However, based on EPA's repeated position, the department does not agree that hazardous wastes, or hazardous waste constituents within an uncondensed gas, cannot be regulated by RCRA.

The March 12 Legal Memo refers to EPA RO 12362, dated January 11, 1985 (RO 12362) which states the following:

> "Condensate derived from landfill gas processing from a fill that contains municipal waste or undefined (not listed) hazardous waste is a hazardous waste only if it exhibits one or more of the characteristics of

> hazardous waste (i.e., ignitability, corrosivity, reactivity, or extraction procedure toxicity). On the other hand, condensate derived from a landfill containing listed waste is always a hazardous waste, unless specifically excluded in response to a "delisting" petition. Of course, the other exemption-from-regulation provisions still apply -- those for small quantity generators and recycling." (underline added)

This guidance unambiguously established that condensate from a landfill containing listed waste is a hazardous waste (unless delisted).

The March 12 Legal Memo indicates that in this RO 12362, EPA only "speculates" this position and then cites EPA's subsequent reconsideration in 1989 (54 Fed, Reg. 50967, 50973, Dec. 11, 1989). In this preamble, EPA states "EPA now believes our authority to identify or list a waste as hazardous waste is limited to containerized or condensed gases". Because of this new consideration, EPA chose to not list uncondensed "light ends" generated in the manufacturing of chlorinated aliphatic hydrocarbons. However, EPA maintained the listing of condensed light ends in finalizing the listing of waste F025. EPA further explains that the condensed light ends, if disposed (rather than reused), "would be considered a solid waste and subject to today's listing". This makes it clear that EPA has authority under RCRA to regulate wastes created from the condensation of uncontained gas (condensed gases), even if that gas is created in a manufacturing process.

EPA has not modified or rescinded 1995's RO 12363, and the "reconsideration" in 1989 does not affect its position that condensate from a landfill containing listed waste is a hazardous waste. In fact, the 1989 discussion regarding uncondensed gas appears to support RO 12363.

In KHL's case, the landfill gas (and its entrained condensable constituents) is created by the treatment, storage and disposal of hazardous waste. EPA has consistently used RCRA to regulate such uncontained material. The following is a summary of examples.

a. In RO 11332, dated March 11, 1988 (RO 11332), EPA evaluated wastes contaminated by uncontained gases created by the incineration of a listed waste, including (1) removed refractory material, (2) dismantled pieces of the former scrubber system, (3) departiculate air filters, (4) scrubber wastewater, (5) soil contaminated with scrubber wastewater, and (6) ash. All wastes were determined to be hazardous due to the "derived-from" rule.

b. EPA RO 11684, dated August 11, 1992 (RO 11684) states, "Off-gases from the resource recovery kilns are regulated under RCRA since they originate from treatment of hazardous waste." In Federal Register Vol. 61, No. 28, Friday, February 9, 1996, page 4910 (FR 2/11/96) regarding air emission controls for Subparts AA, BB or CC, EPA states, "Spent carbon deriving from the treatment of listed hazardous waste is considered to be a type of listed waste by virtue of the derived from rule found at § 261.3(c)(2)". These positions support the position that the "derived from" rule can extend beyond an uncontained gas phase.

c. In Federal Register Vol. 54, No. 206, Thursday, Oct. 26, 1989, page 43733 (FR 10/26/89), regarding thermal combustion residues, EPA states, "Under the Agency's existing regulations, wastes that are derived from the treatment of hazardous wastes of listed hazardous wastes are also considered hazardous waste unless they are delisted." Similarly, it is the department's understanding that EPA has consistently interpreted that residues from air pollution control devices at a hazardous waste incinerator meets the "derived from rule." In RO 13491, (RO 13491) EPA bolsters this position, saying, "Residues such as scrubber blowdown, continue to be regulated as hazardous wastes if they result from processing listed hazardous wastes, or if they exhibit a hazardous waste characteristic".

d. In Federal Register Vol. 56, No. 35, Thursday, February 21, 1991, page 7200 (FR 2/21/91), EPA writes:

"Activated carbon units used as air emission control devices of gaseous industrial process emissions will not necessarily be regulated because trapped organics in such columns are not hazardous wastes because the gas originally being treated is not a solid waste (it is an uncontained gas), and therefore any condensed organics do not derive from treatment of a hazardous waste. (The nongas residues from these devices could be hazardous wastes if they are listed or if they exhibit a characteristic, however.) However, regeneration or reactivation of carbon used to control air emissions from hazardous waste treatment, storage, or disposal facilities (e.g., under 40 CFR parts 264 and 265, subpart AA, June 21, 1990, 55 FR 25454) is subject to regulations as a RCRA thermal treatment unit."

This makes it clear that EPA has the authority under RCRA to regulate treatment of uncontained gases from hazardous waste treatment, storage, or disposal facilities and their non-gas residues.

e. As mentioned earlier, in Federal Register Vol. 54, No. 236, Monday, December 11, 1989 (FR 12/11/89), EPA finalized a rule to add, as a RCRA listed waste, waste generated during the manufacture of chlorinated aliphatic hydrocarbons. On page 50972, EPA established that "our authority to identify or list a waste as hazardous under RCRA is limited to containerized or condensed gases." It goes on to state that uncondensed "light ends" of this listed waste are not regulated, but once they are condensed and disposed, they are considered solid waste and subject to the listing. In this case, EPA recognized the listing carries through an uncontained gas phase and applies to the condensate derived from uncontained gas.

f. Federal Register 78 FR 9128, February 7, 2013 (https://www.govinfo.gov/content/pkg/FR-2013-02-07/pdf/2012-31632.pdf) states, "We note, however, that although gases must be ''contained'' to be solid wastes, under RCRA, EPA maintains separate and independent authority under RCRA to regulate certain types of uncontained gases whether or not they themselves are solid wastes (e.g., gases emitted from the management of hazardous waste)". Footnote 8 goes into more detail.

g. EPA's "contained in" policy (see RO 11195, RO 11434, RO 11593, among others) can apply to non-solid wastes (such as environmental media) contaminated by hazardous waste and/or hazardous waste constituents actively managed. This aspect of the contained-in policy generally supports the position that a listing carries through a "non-solid waste" phase (such as an uncontained gas phase).

h. The KHL argument stating that condensate was determined to be free of any listed waste codes only because it was created from an uncontained gas implies that handlers of listed hazardous waste liquids could rid the wastes of its listing simply by evaporating and then condensing the liquid. The department does not accept that this evaluation is consistent with RCRA's derived-from rule.

Previous DNR Correspondence

The March 12 Legal Memo cites (and provides a copy of) a November 13, 1986, WDNR letter that established that landfill gas itself is not a solid waste. The department continues to agree that KHL's landfill gas is not a solid waste. The letter stated that condensate is a solid waste and could be characteristically hazardous, but the letter is silent regarding the subject of whether the condensate could be a listed waste based on the derived-from rule or mixture rule. The letter suggests that KHL contact U.S. EPA for further interpretation.

The March 12, 2020 Legal Memo cites (but does not provide a copy of) a later WDNR letter dated December 1987, that (according to the Legal Memo) "indicated, without any analysis, that the Condensate is a hazardous waste. It is not clear how WDNR reached this conclusion." The department's electronic files indicate that the department issued a draft closure plan approval under a cover letter dated December 16, 1987, provided to KHL for review and comment, and that the licensee and their counsel subsequently provided comments. It appears that the final version of this letter was issued on March 31, 1998, and retained (in Condition F.2.e, page 26) the requirement for the "(c)ollection of all condensate produced by the gas extraction system and treatment of the

condensate as a hazardous waste." The March 31, 1998 approval included a notification of appeal rights, and there is no indication that an appeal was made. Therefore, the department sees nothing in the historical record to suggest that condensate is neither a solid waste nor a hazardous waste; to the contrary, available correspondence suggests that condensate was required to be handled as hazardous waste. The department has not researched whether this approval condition was subsequently modified or superseded.

Summary

The department concurs with various U.S. EPA's position statements outlined above, and maintains the position outlined in previous department approvals that the KHL condensate is a listed hazardous waste.

Attachment C
Domestic Sewage Exclusion

In Item 5 of the NON, the department alleged a failure to make a hazardous waste determination for collected contaminated groundwater. In Attachment 3 of its April 14, 2020 letter, KHL included a legal memorandum dated April 9, 2020, asserting that leachate and contaminated groundwater (and other liquids so discharged) are not and are never listed F039 hazardous waste (and do not carry any other listing) due to the domestic sewer exclusion (DSE) contained in s. NR 661.04(1)(a)2. Wis. Adm. Code, because the liquid is being ultimately discharged under the DSE to the City of Racine's sewer system. As it relates to leachate, this assertion appears to be new, changing KHL's long-standing recognition and reporting that leachate from the HWU is F039 hazardous wastes.

The department disagrees with the assertion that the leachate and contaminated groundwater are not F039 listed hazardous wastes, as discussed below.

For the purposes of the following discussion, the term "leachate" is broadly used below to describe all collected liquids from the HWU or that are affected or contaminated by constituents from the HWU, such as traditional leachate, contaminated groundwater, and gas condensate drained from landfill gas piping.

According to s. NR 661.04(1)(a)1.Wis. Adm. Code, the DSE applies to "domestic sewage and any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly-owned treatment works for treatment. "Domestic sewage" means untreated sanitary wastes that pass through a sewer system." Thus, the DSE generally established that the hazardous waste must mix with domestic sewage to qualify for the exclusion. This mixing of waste with domestic sewage is discussed in the May 19, 1980, federal register [45 FR 33097] which states:

> "The "domestic sewage" exemption is only applicable to non-domestic wastes that mix with sanitary wastes in a sewer system leading to a POTW. An industrial waste stream that never mixes with sanitary wastes in the sewer prior to treatment or storage does not fall within the exemption, regardless of the public or private ownership of the treatment works. Defining the point at which "mixture" occurs may seem to be a relatively straightforward task. Practical problems arise, however, in defining the point at which mixture of sanitary and other wastes occurs in a complex sewer system. Moreover, it is particularly difficult to define this point for regulatory purposes in such a way that all parties understand when RCRA obligations begin and end. EPA has, therefore, decided that a waste falls within the domestic sewage exemption when it first enters a **sewer system** that will mix it with sanitary wastes prior to storage or treatment by a POTW. EPA recognizes that this interpretation brings various wastes within the exemption before they are actually mixed with sanitary wastes. In light of the fact that the wastes will be mixed prior to treatment and that the mixture will be properly, treated by the POTW, EPA believes that the need for administrative clarity in this otherwise complicated regulatory program warrants such an approach". (emphasis added.

Thus, the DSE is only applicable to non-domestic wastes that mix with sanitary wastes in a sewer system leading to a POTW and that this mixing occurs when the waste first enters the sewer system. EPA helps define what constitutes a sewer system in an October 10, 1982, guidance document (RO 12066):

> "Although RCRA does not define "sewer system**",** it is not the Agency's intent to include private sewers or wastewater treatment units up-stream from the point where pretreatment standards (Section 307(b) of CWA) would apply to wastes going by a sewer to a publicly-owned treatment works."

In this August 22, 1986, federal register [51 FR 30166] EPA adds further insight to what constitutes a qualifying sewer system: *"The exclusion thus covers industrial wastes discharged to POTW sewers which contain domestic sewage, even if the industrial wastes would otherwise be considered hazardous wastes."*

In these two documents, EPA makes it clear that the sewer system must be part of the publicly-owned sewer and treatment system. According to the City of Racine [https://www.cityofracine.org/WasteWater/SanitarySewers/], Kestrel Hawk's lateral to the sewer system is a private sewer lateral and therefore is not part of the public sewer system. As such, at the earliest, the DSE takes affect at the point where Kestrel Hawk's private sewer lateral connects to Racine's POTW sewer system.

In addition, there is the point of generation (POG) to consider. When a hazardous waste is generated it becomes subject to RCRA. In Kestrel Hawk's case, the POG for leachate in a landfill is when the leachate is first collected or otherwise actively managed [May 17, 1988; 53 FR 17586 and August 6, 1998; 63 FR 42191]. Leachate being subject to RCRA when it is first collected or otherwise actively managed was upheld by the U. S. Court of Appeals for the District of Columbia in 1989 (Chemical Waste Management vs. EPA, 869 f.2d 1526). The subsequent downstream management of the leachate by disposal in a sewer system does not change the fact that the hazardous waste was generated when collected.

Under s. NR 662.220(2) WAC, all of the following hazardous waste are not counted when making a quantity determination for generator status:

a. Exempt from regulation under s. NR 661.04 (3) to (6), 661.06 (1) (c), 661.07 (1) (a) or 661.08.
b. Managed immediately upon generation only in on−site elementary neutralization units, wastewater treatment units or totally enclosed treatment facilities as defined in s. NR 660.10.
c. Recycled, without prior storage or accumulation, only in an on−site process subject to regulation under s. NR 661.06 (3)(b).
d. Used oil managed under the requirements of s. NR 661.06 (1) (d) and ch. NR 679.
e. Spent lead−acid batteries managed under the requirements of subch. G of ch. NR 666 (spent lead−acid batteries being reclaimed).
f. Universal waste managed under s. NR 661.09 and ch. NR 673.
g. A hazardous waste that is an unused commercial chemical product (listed in subch. D of ch. NR 661 or exhibiting one or more characteristics in subch. C of ch. NR 661) and that is generated solely as a result of a laboratory clean−out conducted at an eligible academic entity according to the requirements of s. NR 662.213. For purposes of this paragraph, the term "eligible academic entity" shall have the meaning as defined in s. NR 662.200.

This list of exceptions does not include F039 leachate. The leachate collected by KHL does not meet any of the above qualifications, and therefore must be counted.

In summary, the department concurs with various U.S. EPA's positions outlined above and maintains that the leachate that KHL collects is an F039 hazardous waste until it enters the public sewer system.

Appendix A.9
Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #0572
August 23, 2024

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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
141 NW Barstow St. Room 180
Waukesha, WI 53188

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

August 23, 2024

FID #252076990
Racine County
SW/Approval

Mr. Khalid Umer, P.E.,
Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1969 Oakes Road Racine, WI 53406

Subject: Conditional Plan of Operation Approval Modification for Adjusting Owner Financial Responsibility for the Kestrel Hawk Landfill, Racine County, License #572

Dear Mr. Umer:

The Department of Natural Resources (department) is approving the requested plan of operation modification for changes to the Kestrel Hawk Landfill's owner financial responsibility (OFR) by reducing the cost estimate for the hazardous waste unit corrective action fund to eliminate redundant costs that have also been accounted for the in the long-term care cost estimate for the Kestrel Hawk Landfill. Please include this approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The changes to the corrective action cost estimate include removing duplicate costs associated with the following: landfill surface care, leachate treatment and disposal, leachate collection system operations and maintenance, gas extraction system operations and maintenance, environmental monitoring, and annual reporting. Table 1 of the attached approval displays updated hazardous waste unit corrective action cost estimate. Table 2 of the attached approval displays the long-term care cost estimate, which was updated to account for changes in the operations and maintenance costs anticipated for the landfill during the 40-year long-term care period.

Please be advised that condition 1 of the attached approval requires Republic Services to establish proof of OFR based on the approved hazardous waste unit corrective action cost estimate contained in Table 1 of the attached approval within 60 days of the date of this approval. Please work with Dustin Sholly, OFR Specialist, regarding the required proof of OFR. Dustin can be reached at dustin.sholly@wisconsin.gov or at (608) 866-0154.

Please note that the long-term care and corrective action cost estimates will need to be re-evaluated as part of the application for a hazardous waste long-term care license for the Kestrel Hawk Landfill, to ensure that the cost estimates reflect the up-to-date scope of work for these activities.

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state and local permits or regulatory requirements. If you have questions regarding this approval, please contact Tony Peterson at (715) 491-8546 or anthony.peterson@wisconsin.gov.

Sincerely,

James C. Delwiche

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

cc: Todd Martin – TRC Companies (twmartin@trccompanies.com)
Tony Peterson – WDNR (anthony.peterson@wisconsin.gov)
Dustin Sholly – WDNR (dustin.sholly@wisconsin.gov)
Doug Coenen – WDNR (douglas.coenen@wisconsin.gov)
David Buser – WDNR (david.buser@wisconsin.gov)

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION FOR UPDATES TO THE HAZARDOUS WASTE UNIT CORRECTIVE ACTION COST ESTIMATE FOR THE REPUBLIC SERVICES, INC. KESTREL HAWK LANDFILL, LICENSE #572

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Republic Services, Inc. (Republic Services) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk Landfill (formerly known as Land Reclamation Landfill, LRL).

2. The department initially licensed the LRL on April 20, 1970.

3. The department issued conditional plan of operation approvals for the Kestrel Hawk Landfill on December 19, 1984, and August 30, 1996, for the Kestrel Hawk Park Northwest Expansion Landfill.

4. On September 11, 2023, TRC Companies, on behalf of Republic Services, submitted a request to the department for modifications to owner financial responsibility (OFR) hazardous waste unit corrective action cost estimates. The department received the review fee of $1,650 on October 10, 2023.

5. The information submitted in connection with the plan of operation modification request includes the following:

    a. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance” and dated September 11, 2023. The department received the report on September 12, 2023.

    b. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 1” and dated received by the department on March 12, 2024.

    c. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 2” and dated and received by the department on May 30, 2024.

    d. A report prepared by TRC Companies titled “Plan Modification Request for Kestrel Hawk Landfill – Financial Assurance Addendum 3” and dated and received by the department on August 20, 2024.

6. Additional documents considered in connection with the review of the plan of operation modification request includes the following:

    a. The department’s August 16, 2024, email requesting additional information for the plan of operation modification request.

b. The department's April 8, 2024, email requesting additional information for the plan of operation modification request.

c. The department's December 5, 2023, email deeming the plan of operation modification incomplete and requesting additional information.

d. The department's May 2, 2018, plan modification approval adjusting the long-term care cost estimates for Kestrel Hawk Landfill.

e. The department's July 6, 2007, plan modification approval adjusting the long-term care cost estimates for Kestrel Hawk Landfill.

f. The department's August 30, 1996, plan of operation approval for the Northwest Expansion of Kestrel Hawk Landfill.

g. The department's files pertaining to the Kestrel Hawk Landfill (License #572).

7. Additional facts relevant to the review of the plan of operation modification request include:

a. The department's August 30, 1996, plan of operation approval established the requirement for Republic Services to have and maintain an owner financial responsibility (OFR) corrective action fund for the hazardous waste unit of the Kestrel Hawk Landfill.

b. The department is approving changes to the Kestrel Hawk Landfill's OFR by reducing the hazardous waste unit corrective action cost estimate to eliminate redundant costs that have also been accounted for in the standard long-term care cost estimate for the Kestrel Hawk Landfill.

8. The special conditions set forth below are needed to assure that the sites are operated and maintained in an environmentally sound manner. If the special conditions are complied with, the proposed modification will not inhibit compliance with the standards set forth in the applicable portions of chs. NR 500-538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The department has the authority under s. 289.30(6), Wis. Stats., to modify a plan of operation approval if the modification would not inhibit compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

2. The department has the authority to approve a modification to the plan of operation with special conditions if the conditions are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

3. The conditions of approval set forth below are needed to ensure compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

4. In accordance with the foregoing, the department has the authority under s. 289.30(6), Wis. Stats., to issue the following conditional plan of operation modification approval.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The department hereby approves the proposed plan of operation modification for the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code and the following condition:

1. Within 60 days of the date of this approval, Republic Services shall establish proof of financial responsibility in accordance with ch. NR 520, Wis. Adm. Code. The amount of proof of financial responsibility shall be determined based upon the approved annual hazardous waste unit corrective action cost estimate contained in Table 1 of this approval.

Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the department to file your petition with the appropriate circuit court and serve the petition on the department. The petition shall name the Department of Natural Resources as the respondent.

Dated: August 23, 2024

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

Tony Peterson
Waste Management Engineer
Southeast Region

Table 1: Kestrel Hawk Hazardous Waste Unit Corrective Action Cost Estimate

Major Cost Item	Unit	Unit/Cost (2023 Dollars)	Quantity	Annual Cost Years 1-4 (4 years)	Annual Cost Years 6-9, 11-14,16-19,21-24,26-29, 31-34, 36-39 (28 years)	Annual Cost Years 5, 10, 15, 25, 30, 35 (6 years)	Annual Cost Years 20 and 40 (2 years)
Operation Labor							
Technician Hour	hour	$ 24.18	1102	$ 26,646.36	$ 26,646.36	$ 26,646.36	$ 26,646.36
Equipment LS	lump sum	$ 3,719.60	0.53	-	-	$ 1,971.39	$ 1,971.39
Land Surface Care							
Fence Repair	linear foot	$ 11.16	77.5	$ 864.90	$ 864.90	$ 864.90	$ 864.90
Leachate Collection System							
Groundwater Treatment	gallon	$ 0.00707	2300000	$ 16,261.00	$ 16,261.00	$ 16,261.00	$ 16,261.00
Leachate Extraction Well Replacement	each	$ 3,719.60	3.8	-	-	$ 14,134.48	$ 14,134.48
Lift Station Pump Replacement	each	$ 7,439.20	1.04	-	-	$ 7,736.77	$ 7,736.77
Header Repair	liner foot	$ 27.90	720	-	-	$ 20,088.00	$ 20,088.00
Environmental Monitoring							
Gas	lump sum	$ 4,054.36	0.49	$ 1,986.64	$ 1,986.64	$ 1,986.64	$ 1,986.64
Subtotal				$ 183,035.59	$ 1,281,249.10	$ 538,137.19	$ 179,379.06
Total 40-Year Corrective Action Cost Estimate				**$**		**2,181,801.00**	

Note:

1) The total 40-year corrective action cost estimate was rounded to the nearest dollar.

Table 2: Kestrel Hawk Long-Term Care Cost Estimate

Major Annual Cost Item	Unit	Unit Cost (2023 Dollars)	Quantity	Average Cost Per Year (1-5 years)	Average Cost Per Year (6-40 years)
Cover System Maintenance/Erosion Control					
Reseeding of erosion damage (5% of 125 acres)	acre	$ 2,417.36	6.25	$ 15,108.00	$ -
Reseeding of erosion damage (1% of 125 acres)	acre	$ 2,417.36	1.25	$ -	$ 3,022.00
Lawn mowing	acre	$ 48.15	125	$ 6,019.00	$ 6,019.00
Road repair & Sed. Basin Cleaning	LS	$ 7,641.58	1	$ 7,642.00	$ 7,642.00
Snow Plowing	LS	$ 289.17	10	$ 2,892.00	$ 2,892.00
Ditches	LS	$ 1,520.61	1	$ 1,521.00	$ 1,521.00
Leachate System					
Leachate disposal/treatment, total 125 acres: 1"/year over 96 acres (composite cover area) + 3"/year over 29 acres (non-composite area) = 4,970,000 gallons per year	gal	$ 0.00707	4,970,000	$ 35,155.00	$ 35,155.00
Leachate system operation and maintenance	LS	$ 4,144.50	1	$ 4,145.00	$ 4,144.50
Leachate collection line cleaning	LS	$ 16,670.02	1	$ 16,670.00	$ 16,670.00
Leachate collection line televising (every 5 years)	LS	$ 240.00	1	$ 240.00	$ 240.00
Leachate pump with controls	LS	$ 3,178.20	1	$ 3,178.00	$ 3,178.00
Gas Extraction System					
Operation and maintenance	LS	$ 106,149.64	1	$ 106,150.00	$ 53,075.00
Blower and flare replacement	LS	$ 3,178.20	1	$ 3,178.00	$ 3,178.00
Header Repair	LS	$ 40.66	50	$ 2,040.00	$ 2,040.00
Gas well replacement	LS	$ 6,478.39	1	$ 6,478.00	$ 6,478.00
Other Environmental Monitoring					
Electrical costs	LS	$ 128,354.21	1	$ 128,354.00	$ 53,184.00
Groundwater (GW) monitoring well maintenance	LS	$ 6,906.43	1	$ 6,906.00	$ 6,906.00
GW/Surface Water/Leachate sampling & analysis: Monthly and Quarterly years 1-5	LS	$ 72,570.97	1	$ 72,571.00	$ -
GW/Surface Water/Leachate sampling & analysis: Monthly and Semi-annual years 6-40	LS	$ 36,285.49	1	$ -	$ 36,286.00
Quarterly Monitoring Reports, years 1-5	LS	$ 24,913.00	1	$ 24,913.00	$ -
Semi-Annual Monitoring Reports, years 6-40	LS	$ 12,456.50	1	$ -	$ 12,457.00
Routine Air Compliance Services	LS	$ 12,545.85	1	$ 12,546.00	$ 12,546.00
Annual report	LS	$ 21,663.10	1	$ 21,663.00	$ 21,663.00
Annual site inspections	LS	$ 2,729.83	1	$ 2,730.00	$ 2,730.00
Hazardous Waste Generator Fees and disposal	LS	$ 3,249.89	1	$ 3,250.00	$ 3,250.00
Condensate removal and disposal	LS	$ 13,322.75	1	$ 13,323.00	$ 6,661.00
Annual Subtotals				$ 496,672.00	$ 300,937.50
Management and Administrative Fees				$ 49,667.13	$ 30,094.00
Contingency (10%)				$ 54,633.91	$ 33,103.15

Total Annual Costs	$ 600,973.04	$ 364,134.65
Total 40-Year Costs	$ 3,004,865.22	$ 12,744,712.75
Overall Total 40-year Long-Term Care Cost Estimate	**$**	**15,749,578.00**

Notes:

1) The average costs per year were rounded to the nearest dollar for the long-term care cost estimate.
2) The overall total 40-year long-term care cost estimate was rounded to the nearest dollar.

Appendix A.10
Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill
August 30, 1996

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

PO Box 7921
101 South Webster Street
Madison, Wisconsin 53707-7921
DNR TELEPHONE 608-266-2621
DNR FAX 608-267-3579
DNR TDD 608-267-6897
SOLID WASTE MGMT 608-266-2111
SOLID WASTE FAX 608-267-2768

AUG 3 0 1996

Mr. Hank Koch
Land Reclamation Company
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID# 252076990
Racine
SW
Appr

SUBJECT: Plan of Operation Approval for the Northwest Expansion of the Land Reclamation Company Landfill

Dear Mr. Koch:

We have completed our review of your plan of operation for the proposed Northwest Expansion of the Land Reclamation Company Landfill and determined that it is consistent with Wisconsin's solid waste regulations. Therefore, the plan of operation is approved, subject to compliance with NR 500-520, Wis. Adm. Code and the conditions of the attached approval document.

We concur with your request to waive baseline groundwater monitoring at wells 210U and 211U because those wells are being installed to measure inward gradients to corridor 11. However we are requiring baseline groundwater quality at the 5 replacement wells (48TR, 48UR, 48LR, 204TR, and 204URR) because they will not be constructed in close proximity to the wells they replace.

You are reminded that approval by the Bureau of Waste Management does not relieve you of obligations to meet all other applicable federal, state, and local permits, zoning and regulatory requirements.

If you have any questions regarding this approval, please contact Cindy Cook at (608)267-3542, Tim Kessenich at (608)264-6018, or Ken Hein at (414)229-0843.

Sincerely,

Dennis Mack for

Lakshmi Sridharan, Ph.D., P.E., Chief
Bureau of Waste Management

LS:cmc c:\data\wp50\lrc\planofop.app

cc: Dennis Mack - WA/3
Ken Hein - SED
Kate Martin - RMT

PROJECT SUMMARY
LAND RECLAMATION COMPANY NORTHWEST EXPANSION

GENERAL INFORMATION

AUTHORIZED CONTACT:

Henry A. Koch, P.E.
General Manager
Land Reclamation Company
1989 Oakes Road
Racine, WI 53408
(414)884-7080

LICENSEE/PROPERTY OWNER: Land Reclamation Company
A Sanifill of Wisconsin Company

SITE LOCATION: Land Reclamation Company, Inc (LRC) is proposing to vertically and horizontally expand their LRC Landfill located in the S 1/2 of NE 1/4 of Section 23, Township 3N, Range 22E, Racine County, Wisconsin. The site is located 3/4 of a mile south of Highway 20 and 1/4 of a mile west of Highway 31 in Racine, Wisconsin.

ACREAGE AND ACCESS: The total acreage of the existing landfill is 70.1 acres and the Northwest expansion adds an additional 55.3 acres. Access to the expansion will be via the route for the existing site, primarily from Highway 20 onto Oakes Road. The landfill access is off Oakes Road.

CAPACITY AND SITE LIFE: The expansion will provide 7,217,000 cubic yards of waste disposal capacity (design capacity of 7,775,000 cubic yards). The expansion will provide 12 years of additional site life.

WASTE TYPES AND GENERATORS SERVED: The site will accept non-hazardous municipal, commercial, and industrial solid waste. The proposed primary service area includes Milwaukee, Racine, Kenosha, Walworth and Waukesha Counties in Wisconsin, and Lake, Cook, and McHenry Counties in Illinois. Land Reclamation Co. has an existing approved Special Waste Acceptance Plan. The plan is used to screen industrial wastes (referred to as "special wastes"). The program calls for specific testing protocols and disposal procedures based on the waste type. Under this program the landfill is able to accept many specifically categorized special wastes without additional Department review. The program identifies certain waste types which must receive prior Department approval on a case-by case basis.

FACILITY DESIGN

LINER SYSTEM: The horizontal portion of the landfill will be constructed with a composite liner consisting of four feet of recompacted clay overlain with a 60 mil geomembrane. A gradient control system will be constructed below the composite liner to maintain groundwater heads below the overlying liner system. A leachate collection system will be constructed over the composite liner to provide collection and removal of leachate generated within the expansion. Leachate collected at the landfill will continue to be transported to the City of Racine Wastewater Treatment Plant via sanitary sewer.

FINAL COVER: The expansion will have an elevation of approximately 150 feet above the surrounding terrain with sideslopes of the landfill having a 4:1 grade and a top grade of 5 percent. The final cover system will consist of the following from the bottom up: 6 inch grading layer, 24 inch thick recompacted clay layer, 40 mil very flexible polyethylene, 12 inch thick granular drainage layer, geotextile filter layer, 18 inch thick rooting zone and a 6 inch thick topsoil layer. A vegetative cover will be established over the final cover to minimize erosion. Drainage piping will be installed within the drainage layer to direct infiltration of precipitation outside of the final cover. The water collected in these pipes will be directed through 4 inch diameter polyethylene pipe. The pipe will outlet approximately every 200 feet along the perimeter of the landfill.

SURFACE WATER MANAGEMENT: Surface water will be managed at the site through the construction and use of ditches, diversion berms, spillways, culverts and sedimentation basins, all designed to control surface water during both the operational and post-closure care periods of the landfill. Four new sedimentation basins will be constructed to handle runoff from the expansion. Surface water will be discharged to the Gunderson drainage ditch along the north side of the property and to a drainage ditch along the southwest side of the property. Both ditches carry water to the Pike River which is located 1/2 mile west of the LRC site.

The discharge from the surface water sedimentation basins will be monitored quarterly during a discharge event as outlined in the attached conditions. Annual inspections and quarterly visual inspections of the storm water discharge system are required in the attached approval in order to comply with provisions of ch. NR 216, Wis. Adm. Code.

GAS EXTRACTION SYSTEM: A vertical gas extraction system will be constructed within the expansion area to extract landfill gas produced by the decomposition of the waste. Landfill gas collected at the site will be combusted in a pedestal flare, sent to the S.C. Johnson Wax Company as boiler fuel, used at the Payne and Dolan asphalt plant for fuel, and used on-site for electricity generation.

FACILITY OPERATION

DISPOSAL OPERATION: Waste placement will begin in the eastern portion of the expansion and will progress to the west. Daily operations will be confined to as small an area as practicable within the filling limits. Waste will be placed in such a manner as to minimize windblown papers, dust and odors. A comprehensive Odor, Dust and Wind-Blown Debris Control Plan has been approved as part of this letter.

WASTE SCREENING: Incoming waste loads will be weighed at the scale. If the gate attendant identifies unauthorized waste in a load, the load will not be accepted for disposal. The site manager will be consulted in instances when the gate attendant questions the acceptability of a waste load. In conjunction with the landfill's Special Waste Plan, a random load inspection

program will be implemented to check for the presence of detectable hazardous or toxic wastes. The entrance gate will be locked during non-operating hours.

ENVIRONMENTAL MONITORING

The environmental monitoring plan at the Land Reclamation Landfill is designed to monitor the groundwater, gradient control layer, leachate, landfill gas, surface water and air borne particulates.

Groundwater in the area of the inactive hazardous waste unit will be monitored quarterly for inorganic parameters, VOCs and ch. NR 635 Appendix 1 compounds detected. Four monitoring wells designated for Subtitle D compliance will be monitored semi-annually for indicator parameters and VOCs. Additional wells will be monitored semi-annually for indicator parameters and annually for VOCs. Water level monitoring will be conducted in the remaining wells and in 2 sub-base piezometers to ensure that inward gradients to the landfill are being maintained. Field parameters and VOCs will be monitored at wells inside the containment structure south of the inactive hazardous waste unit. The gradient control layer will be monitored monthly for field parameters, TSS, BOD_5, COD and total volume of water pumped.

The leachate collection system will be monitored monthly for quality and volume at various points prior to discharge to the City of Racine sewage system. Additional leachate monitoring will be performed semiannually for the parameters listed in ch. NR 507, Appendix I, Table 4 and annually for base/neutral acid extractable compounds. Leachate head elevations will be monitored quarterly in the existing portion of the landfill and semi-annually in the horizontal expansion area.

The active gas extraction system will be monitored twice monthly at all extraction wells for vacuum, percent methane, percent oxygen, valve setting, flow, stabilized methane levels and temperature. Soil gas probes will be monitored twice monthly for vacuum percent methane, percent oxygen and temperature. The gas compressors will be monitored twice monthly for percent methane, percent oxygen, estimated flow and vacuum; and monitored annually for VOCs and semi-volatiles. Finally, the volume of gas sent to the Johnson's Wax Company and to the Landfill flares will be measured twice monthly.

Surface water will be monitored quarterly for water quality parameters at sedimentation basin outfalls and in the Gunderson Canal and in the southwest drainage ditch.

An Air Pollution Control Construction Permit (#96-EJD-240) issued by the Department's Air Management Program will require monitoring for total suspended particulates at three stations. The initial frequency of monitoring will be every two days, but may be modified during the operation of the landfill.

CLOSURE AND LONG-TERM CARE COSTS

Although LRC will be perpetually responsible for the long-term care of this landfill, proof of financial responsibility for a long-term care period of 40 years is required by law. Actions to be taken during closure and the owner 40 year financial responsibility period, along with the associated cost estimates, are summarized below. Closure costs reflect the most expensive area to close, which is Phase 5 of the expansion. The closure costs include the installation of a multi-layered composite cap and a vertical gas extraction system. Long-term care costs reflect estimated yearly expenses for: groundwater, surface water, gas, leachate, and gradient control system monitoring; leachate collection and treatment; gas extraction system operation and maintenance; site maintenance; and site inspections and erosion repairs. All costs are based on 1996 unit prices. Long-term care costs have been calculated for the entire LRC landfill, the existing site and the expansion.

CLOSURE COSTS:

	ITEM	QUANTITY	UNIT COST	ESTIMATED COSTS
FINAL COVER CONSTRUCTION				
1.	Rooting Zone (1.5 feet) Off-site	33,700 cy	$5/cy	$168,500
	On-site	54,300 cy	$3.5/cy	$190,000
2.	Clay Cap (2 feet)	117,300 cy	$7.2/cy	$844,600
3.	Drainage Layer (1 foot)	58,700 cy	$10.5/cy	$616,400
4.	Pipe Bedding (In drainage layer)	3,200 cy	$10.5/cy	$33,600
5.	Topsoil (6 inch)	29,300 cy	$3.5/cy	$102,600
6.	Geotextile	183,300 sy	$0.60/sy	$110,000
7.	40 mil geomembrane (Includes installation and testing)	176,000 sy	$3.15/sy	$554,400
8.	Seed, fertilizer, mulch	36.4 acre	$1,300/acre	$47,300
9.	Mobilization of Equipment	lump sum	$10,000	$10,000
DRAINAGE LAYER COLLECTION SYSTEM				
10.	4 inch HDPE perforated pipe	10,900 lf	$15/lf	$163,500

11.	4 inch HDPE solid wall pipe	1,200 lf	$15/lf	$18,000
SURFACE WATER				
12.	Diversion berm	8,200 lf	$5/lf	$41,000
13.	Downslope flume	1	$31,000/each	$31,000
GAS SYSTEM				
14.	6" HDPE lateral pipe	3,850 lf	$20/lf	$77,000
15.	10" HDPE header pipe	4,000 lf	$42/lf	$168,000
16.	Gas wells	2,335 lf	$100/lf	$233,500
17.	Gas wellheads	27	$1,500/each	$40,500
18.	Gas monitoring assembly	3	$2,500/each	$7,500
19.	Pipe boots	64	$200/each	$12,800
20.	Dripleg	1	$5,000/each	$5,000
MISCELLANEOUS				
21.	Remove diversion berm	4,300 lf	$2/lf	$8,600
22.	Strip intermediate cover	34,400 cy	$1.4/cy	$48,160
23.	Site Trailer	2	$500/each	$1,000
ENGINEERING FEES				
24.	Plans and specs	lump sum	$30,000	$30,000
25.	Construction assistance	lump sum	$50,000	$50,000
26.	Documentation	lump sum	$25,000	$25,000
	SUBTOTAL			$3,638,000
	Contingency Cost (10%)			$363,800
	TOTAL			$4,002,000

LONG-TERM CARE COSTS:

Item	Quantity	Unit Cost	Cost/Year (Years 1-5)	Cost/Year (Years 6-40)
Land Surface Repair				
Reseed (10%)	12.5 Acre	$1,700/ac	$21,300	
Erosion Damage	2 Events	$200/Event	$400	
Road Repairs	4 Events	$200/Event	$800	
Lawn Mowing	4 Days	$500	$2,000	$2,000
Site Environmental Monitoring	Lump sum		$66,500	$58,300
Monthly Manhole Inspections	Lump sum	$300	$300	$300
Sed. Basin Maintenance	Lump sum	$2,000	$2,000	
Gas System Maintenance				
Operation and Maintenance	Lump sum	$1,000	$1,000	$1,000
Header Repair	15 lf	$100/lf	$1,500	
Blower and Flare Replacement (Replace in Years 20 and 40)	Lump sum	$80,000		**
Leachate Treatment	3,406,000 gal	$0.0036/gal	$12,300	$12,300
Leachate Line Cleaning	23,900 lf	$0.40/lf	$9,600	$9,600
Leachate System O&M	Lump sum	$10,000	$10,000	$10,000
Energy Cost	Lump sum	$9,000	$9,000	$9,000
Annual Inspections	8 hours	$13/hr	$100	$100
Annual Submittal	Lump sum	$2,000	$2,000	$2,000
Reporting	Lump sum	$3,000	$3,000	$3,000
	SUBTOTAL		$141,800	$107,600
	CONTINGENCIES (10%)		$14,200	$11,000
	TOTAL		$156,000	$118,600

** Not included in annual cost.

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL FOR THE
NORTHWEST EXPANSION OF THE
LAND RECLAMATION COMPANY LANDFILL (LICENSE # 0572)

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the existing facility on December 19, 1984, under which the landfill is currently operating.

3. The Department issued a determination of need and feasibility approval for the Northwest Expansion on April 11, 1996.

4. On May 31, 1996, RMT, Inc, on behalf of LRC, submitted to the Department a proposed plan of operation report for the expansion of the Land Reclamation Company Landfill.

5. The information submitted as part of the plan of operation review includes the following:

   a. The report and appendices entitled, "Land Reclamation Company Northwest Expansion Plan of Operation," and accompanying plan sheets. The report was submitted by RMT, Inc., on behalf of LRC, and was dated May 31, 1996. The report was received by the Department on May 31, 1996.

   b. A letter sent to the Department from RMT, Inc, dated June 27, 1996. The letter included a revised signed certification page to the Plan of Operation Report.

   c. A report entitled, "Addendum No. 1, Plan of Operation, Northwest Expansion, Sanifill - Land Reclamation Company Landfill," and its associated plan sheets. The report was dated August 13, 1996 and was received by the Department on the same day.

   d. A submittal entitled, "Addendum No. 2, Plan of Operation, Northwest Expansion, Sanifill - Land Reclamation Company Landfill". The report was dated August 26, 1996 and was received by the Department on the same day.

6. Additional documents considered in the review of the plan of operation include the following:

a. The Department's April 11, 1996 Determination of Need and Conditional Feasibility Approval.

b. The Department's September 1, 1995 Bioremediation Plan of Operation Approval for the Land Reclamation Landfill.

c. A letter from the Department to Hank Koch of LRC which requests that additional information be submitted before a determination could be made for the LRC Northwest Expansion plan of operation. The letter was dated August 1, 1996.

7. The $7000 plan of operation review fee was received by the Department on June 5, 1996.

8. Exemptions under s. NR 140.28, Wis. Adm. Code, were granted by the Department in the feasibility determination dated April 11, 1996 and remain in effect.

9. Baseline groundwater monitoring data was submitted with the plan of operation which shows that a preventive action limit or enforcement standard has been exceeded for additional substances and wells at the proposed Land Reclamation Landfill expansion.

10. The Department considered the following information in considering the need for additional exemptions to groundwater standards at this facility:

a. Background groundwater monitoring data provided in the Feasibility Report and Plan of Operation

b. Well construction details and boring logs provided in the Feasibility Report.

c. Well location plan sheets and water table maps provided in the Feasibility Report and Plan of Operation.

d. The landfill design specifications provided in the Feasibility Report and Plan of Operation as conditioned herein.

11. Based on an examination of site conditions, the Department finds the following:

a. Groundwater concentrations of antimony, arsenic, chloride, fluoride and thallium in the site area are found at concentrations exceeding the ch. NR 140, Wis. Adm. Code groundwater standards. These exceedances are due to background groundwater quality associated with natural hydrogeologic conditions or substances released by other human activities on, or near, the proposed expansion area.

b. To minimize the incremental increase in contamination, the proposed expansion has been designed to contain and collect leachate. The horizontal component of the expansion includes a gradient control layer to maintain the water table below the base of the liner, a composite liner system consisting of 4 feet of recompacted clay and a 60 mil HDPE geomembrane and a granular leachate collection layer. The entire expansion includes a composite final cover system, in part composed of 2 feet of compacted clay overlain by a 40 mil HDPE geomembrane. These design features will limit increases of contaminants in the groundwater, including antimony, arsenic, chloride, fluoride and thallium. Therefore, the proposed landfill is designed to achieve the lowest possible concentration of these substances in the groundwater which is technically and economically feasible.

12. Based on an examination of the groundwater quality data for the proposed facility for substances of public health concern, other than nitrate, and the information listed in Findings of Fact 10 and 11 above, the Department finds the following:

a. Background concentrations above the preventive action limit but below the enforcement standard established for the following substances of public health concern, other than nitrate, were observed in groundwater samples from the monitoring wells listed below:

Substance	Wells
Antimony	208U
Arsenic	208T, 209T
Fluoride	47TR, 208T
Thallium	204UR

b. The proposed facility will not cause the concentration of antimony, arsenic, fluoride and thallium to exceed the enforcement standard for these substances at a point of standards application because of the landfill design.

c. The proposed facility is designed to achieve the lowest possible concentrations for antimony, arsenic, fluoride and thallium which are technically and economically feasible.

13. Based on an examination of the groundwater quality data for the proposed facility for nitrate or substances of public welfare concern and the information listed in Findings of Fact 10 and 11 above, the Department finds the following:

a. Background concentration above the enforcement standards established for the following substances of public welfare concern was observed at the monitoring well listed below:

Substance	Well
Chloride	202T

b. The proposed facility is designed to achieve the lowest possible concentrations for chloride which are technically and economically feasible.

c. The anticipated increase in the concentrations of chloride does not present a threat to public health or welfare because of the landfill design.

14. Granting the exemptions that are set forth below will not inhibit compliance with Wisconsin solid waste management standards in chs. NR 500 through 526, Wis. Adm. Code.

15. The applicant has greater than 10% interest in the Land Reclamation Company Landfill located in Wisconsin and is in noncompliance with the plan approval issued by the Department as a plan of operation approval modification for the gas and leachate extraction system, dated March 12, 1991. The Land Reclamation Company has provided the Department with proof of financial responsibility for the Land Reclamation Company Landfill to ensure the availability of funds to comply with the plan using a method under s. 144.443, Stats.

16. With the exception of the Land Reclamation Company Landfill, neither the applicant, nor any person owning a 10% or greater legal or equitable interest in the applicant, or the assets of the applicant:

a. Is in noncompliance with a plan approval or order issued by the Department for a solid or hazardous waste facility in Wisconsin;

b. Owns or previously owned a 10% or greater legal or equitable interest in a person, or in the assets of a person, who is not in compliance with a plan approval or order issued by the Department for a solid waste or hazardous waste facility in Wisconsin.

17. Hazardous waste constituents, including vinyl chloride, have been detected in groundwater adjacent to corridors 1 through 6. Therefore, the Land Reclamation Company Landfill is subject to the requirements of compliance monitoring under s. NR 635.14, Wis. Adm. Code.

18. If the special conditions set forth below are complied with, the proposal will meet the requirements of chs. NR 500-526 and NR 600-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3)(c), Stats. to approve a Plan of Operation with special conditions if the conditions are needed to ensure compliance with the ch. NR 500 series and NR 600-685, Wis. Adm. Code.

2. The conditions of approval set forth below are needed to ensure compliance with the ch. NR 500 series and NR 600-685, Wis. Adm. Code.

3. In accordance with the foregoing, the Department has the authority under s. 144.44, Stats., to issue the following conditional approval.

4. The Department has the authority under ss. NR 140.20 and NR 507.18, Wis. Adm. Code to require sampling for baseline water quality and to specify parameters for such sampling.

5. The Department has the authority under s. NR 140.28, Wis. Adm. Code, and ss. 160.19(8), (9) and (10), Stats., to grant exemptions to the Wisconsin groundwater standards for antimony, arsenic, chloride, fluoride and thallium in ch. NR 140, Wis. Adm. Code.

GRANT OF EXEMPTIONS

1. Land Reclamation Company has demonstrated circumstances which warrant an exemption from s. NR 514.05(2), Wis. Adm. Code, to allow a scale of 1 inch=250 feet rather than the required minimum scale of 1 inch=200 feet. The exemption is hereby granted for the existing conditions plan sheet in order to provide a detailed survey of the expansion within 1,500 feet from the proposed limits of filling.

2. Land Reclamation Company has demonstrated circumstances which warrant an exemption to the groundwater standards for antimony, arsenic, chloride, fluoride and thallium in ch. NR 140, Wis. Adm. Code, as specified in s. NR 140.28, Wis. Adm. Code, to allow the expansion of a municipal solid waste landfill in an area where a preventive action limit or enforcement standard has been attained or exceeded. Exemptions are hereby granted for the parameters and wells listed in Findings of Fact 12 and 13. The Department may establish alternative concentration limits for the parameters and wells listed in Findings of Fact 12 and 13 when sufficient rounds of background groundwater quality samples have been collected and analyzed as required in Condition 17 below.

3. An exemption is hereby granted to s. NR 507.26 (3), Wis. Adm. Code, so that environmental monitoring and water elevation data obtained more frequently than quarterly may be submitted to the Department with the subsequent quarterly monitoring report. This exemption does not apply to notification and response requirements when values attain or exceed a standard under s. NR 507.30, Wis. Adm. Code.

4. Land Reclamation Company has demonstrated circumstances which warrant an exemption from s. NR 507.18(4), Wis. Adm. Code, to waive the requirement for obtaining baseline groundwater quality at wells 210U and 211U. An exemption is hereby granted for wells 210U and 211U which will be installed to monitor groundwater elevation adjacent to corridor 11.

5. This facility is exempt from storm water permit requirements under s. NR 216.21(3)(a), Wis. Adm. Code, provided the conditions in the attached approval are followed.

CONDITIONAL PLAN OF OPERATION APPROVAL

The Department hereby approves the Land Reclamation Company Northwest Expansion subject to compliance with the ch. NR 500 series, Wis. Adm. Code, and the following conditions:

1. The total design capacity of the Northwest Expansion (combined refuse, daily and intermediate cover volume) shall not exceed 7,775,000 cubic yards.

2. All aspects of construction and operation of the landfill shall be performed in accordance with the plan of operation, the requirements of the ch. NR 500 series, Wis. Adm. Code, and the conditions of this approval. In the case of any discrepancies between the approval conditions and the plan of operation, the approval conditions shall take precedence.

3. Any proposed changes to the plan or this approval shall be presented to the Department. If the changes are compatible with the desired performance of this landfill, as determined by the Department, an addendum will be added to this approval indicating acceptance of those changes. Written Department approval is necessary prior to implementing any changes with the exception of the provisions of NR 514.09, Wis. Adm. Code, and that field modifications may, at the Department's discretion, be verbally approved.

Operations

4. Random load inspections and record keeping requirements shall be in conformance with the requirements under ss. NR 506.16(1)(a) and NR 506.17.

5. The current wastewater treatment agreement with the City of Racine Wastewater Treatment Plant ends on December 31, 1996. The new agreement for the 1997 calendar year shall be submitted to the Department along with the Phase 1 construction documentation report. Subsequent annual agreements shall be submitted to the Department on January 1 of each calendar year.

6. LRC's Northwest Expansion Plan of Operation report proposes constructing refuse core berms on the North and West perimeter of the expansion to aid in screening the daily operations from nearby residents. Refuse core berms shall also be constructed on the Eastern perimeter of the expansion.

Construction

7. The clay portions of both the liner system and the final cover system shall be constructed in accordance with NR 504.06(2)(f), Wis. Adm. Code.

8. All construction of the LRC Northwest Expansion shall be documented according to NR 516, Wis. Adm. Code.

9. The thickness of the geotextile separating the gradient control layer from the recompacted clay portion of the liner shall be increased to 10 ounces per square yard.

10. The curved portions of leachate cleanout lines, numbers 3, 4, 5, 6, 7, and 8, shall be constructed using the following considerations:

    a. The stone pipe bedding shall be placed up to the pipe haunches and compacted to keep the pipe in place during construction.

    b. Whenever possible, pipe segments shall be constructed longer than required in the curved portions, so that the radii can be constructed at one time avoiding interruptions in construction due to weather or evening periods.

    c. After the survey location of the centerpoint of the curve is set, a tape shall be used to set the pipe location with paint lines on the stone. This is to allow for more accurate placement of the pipe curve within the center of the trench.

11. Construction inspections will be performed at this landfill as indicated below. The Department's environmental engineer assigned to this site shall be notified a minimum of one week prior to beginning each of the construction events listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation review fee is submitted to the Department.

    a. Geomembrane seaming and installation

    b. Geotextile and leachate collection line placement.

    c. Side slope riser and sump installation.

    d. Construction of the geomembrane component of the final cover system.

Environmental Monitoring

12. The Land Reclamation Company shall perform environmental monitoring in accordance with this plan approval and the requirements of chs. NR 500 to 526, NR 600 to 685 and NR 140, Wis. Adm. Code. In the case of any discrepancies between the conditions of this approval and any prior approvals, the conditions of this approval shall take precedence.

13. Air monitoring shall be performed as required by the Air Pollution Control Permit issued by the Department Air Management Program.

14. The following items regarding the storm water pollution prevention plan was not sufficiently addressed in the plan of operation report and shall be included in the initial construction documentation report: 1. A discussion of all potential source areas of storm water contamination which were not part of the plan of operation report including the maintenance building and recycling center areas; 2. Any significant polluting materials or activities associated with the storm water contamination from source areas shall be identified.

15. An annual facility site compliance inspection shall be performed to verify that:

    a. The storm water pollution prevention plan (SWPPP) remains current.

    b. Potential pollution sources at the facility are identified.

    c. The facility site map and drainage map remain accurate.

    d. Best management practices prescribed in the SWPPP are being implemented, properly operated, and adequately maintained.

    Documentation of the inspection shall be submitted in the annual report, which was previously required in the Department's February 7, 1994 plan of Operation Modification. Documentation of the inspection shall include the inspection date, inspection personnel, scope of the inspection, major observations and revisions needed in the SWPPP.

Additional to Annual Report

16. Quarterly visual inspections of storm water discharge quality at each outfall shall be performed and documented. The inspections shall be conducted within the first 30 minutes after runoff begins discharging from the outfall, or as soon as practical, but no later than 60 minutes. The inspections shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen or other obvious indicators of storm water pollution. Documentation of the inspections shall be included in the annual report and include the inspection date, inspection personnel, visual quality of the storm water discharge and probable sources of any storm water contamination.

17. The Land Reclamation company shall provide a minimum of 8 rounds of baseline groundwater sampling data for the substances and wells

requiring an exemption from the groundwater standards of ch. NR 140, Wis. Adm. Code.

18. Within one year from the date of this approval, the Land Reclamation Company shall propose preventive action limits for inorganic monitoring parameters and alternative concentration limits for inorganic public health and welfare parameters for which an exemption has been granted in accordance with ss. NR 507.27 (1) and (2), Wis. Adm. Code.

19. The environmental monitoring requirements contained herein shall commence with the issuance of this approval and shall continue until otherwise modified by the Department in writing.

20. The design management zone (DMZ) for the existing corridors 1 through 6, 7, 8, 9, 10, and 11 shall be the limits of filling. The design management zone for phases 1 through 5 of the horizontal area of the expansion shall be 150 feet horizontally from the limits of filling or the property line, whichever is closer.

21. The designated monitoring wells for Subtitle D compliance shall be 49LR, 204UR, 208U, and 209U.

22. Monitoring wells 49LR, CS8, CS10, CS12, CS14, UB6, UB8 and UB9 shall be sampled according to protocols that fulfill the requirements of ch. NR 635, Wis. Adm. Code.

23. The Land Reclamation Company shall implement an environmental monitoring program in accordance with the following schedules:

GROUNDWATER MONITORING		
Monitoring Wells	Frequency	Parameters
(Unit A) 7U, 40U, 47TR, 109TRR, 134U, 141U, 152U, 153U, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R (Unit B) 109L, 201U, 208U, 209U, UB2, UB4, UB5, UB7	Semiannually	72020 Groundwater Elevation 00010 Field Temperature 00094 Field Conductivity @ 25°C 00400 Field pH 39036 Alkalinity, filtered 00341 COD, filtered 22413 Total Hardness, filtered 00940 Chloride 00950 Fluoride 00930 Sodium, dissolved

GROUNDWATER MONITORING		
Monitoring Wells	Frequency	Parameters
(Unit A) 7U, 40U, 47TR, 109TRR, 201T, 202T, 204TR, 208T, 209T, CS2, CS6R (Unit B) 109L, 201U, 208U, 209U, UB2, UB4, UB5, UB7	Annually	VOCs (Using EPA Solid Waste Method 8021 or 8260)
134U, 141U, 152U, 153U, 204U, 208U, 209U	Semiannually	VOCs (Using EPA Solid Waste Method 8021 or 8260)
49LR, CS8, CS10, CS12, CS14, UB6, UB8, UB9	Quarterly	72020 Groundwater Elevation 00010 Field Temperature 00094 Field Conductivity @ 25°C 00400 Field pH 39036 Alkalinity, filtered 00341 COD, filtered 22413 Total Hardness, filtered 00940 Chloride 00950 Fluoride, dissolved 00930 Sodium, dissolved VOCs (Using EPA Solid Waste Method 8021 or 8260) Plus compounds detected during the annual NR 635 Appendix 1 monitoring.
49LR, CS8, CS10, CS12, CS14, UB6, UB8, UB9	Annually	As listed under ch. NR 635, Appendix 1, Wis. Adm. Code.
5TR, 5UR, 5LRR, 6TR, 6U, 6L, 7T, 17TR, 17UR, 17LR, 46TR, 46U, 47U, 48TR, 48UR, 48LR, 49T, 49U, 108T, 108U, 108L, 109U, 120T, 120U, 120L, 126T, 126U, 126L, 126D, 134T, 141T, 146UR, 202U, 202D, 209D, 210U, 211U, CS 1, CS3, CS4, CS5, UB1, SBPZ1, SBPZ2	Semiannually	72020 Groundwater Elevation

INTERIOR CONTAINMENT STRUCTURE		
Wells	Frequency	Parameters
CS7, CS9, CS11, CS13	Quarterly	00094 Field Conductivity @ 25°C 72020 Groundwater Elevation
CS9, CS13	Annually	VOCs (Using EPA Solid Waste Method 8021 or 8260)

GRADIENT CONTROL STRUCTURE		
Sample Locations	Frequency	Parameters
GCS1, GCS2, GCS3, GCS4, GCS5	Monthly	00010 Field Temperature 00094 Field Conductivity @ 25°C 00150 Total Suspended Solids 00310 BOD_5 00340 COD, Unfiltered 00400 Field pH
GMH1	Monthly	50052 Groundwater Volume Pumped

LEACHATE AND GAS CONDENSATE MONITORING		
Sample Locations	Frequency	Parameters
MH15B, LMP6A	Monthly	00032 Leachate Volume
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Monthly	00410 Alkalinity, total as $CaCO_3$ 00310 BOD_5 00340 COD, unfiltered 00094 Field Conductivity @ 25°C 00556 Oil and Grease 00400 Field pH 00665 Phosphorus, total 00150 Total Suspended Solids 00010 Temperature, field
LHW100 through LHW121, RS1R, LH38	Quarterly	00023 Leachate elevation, feet MSL 00031 Leachate depth in feet
LH1, LH2, LH3, LH4, LH5, LH6, LH7, LH8, LH9, LH10	Semiannually	00023 Leachate elevation, feet MSL 00031 Leachate depth in feet

LEACHATE AND GAS CONDENSATE MONITORING		
Sample Locations	Frequency	Parameters
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Semiannually	00310 BOD_5 00094 Field Conductivity @ 25°C 00400 Field pH 00410 Alkalinity, total as $CaCO_3$ 01027 Cadmium, total 00940 Chloride 00340 COD, unfiltered 00951 Fluoride, total 00900 Hardness, total 74010 Iron, total 01051 Lead, total 01055 Manganese, total 71900 Mercury, total 00610 Nitrogen, Ammonia, total 00625 Nitrogen, Kjeldahl, total 00929 Sodium, total 00945 Sulfate, total 00150 Total Suspended Solids VOCs (Using EPA Solid Waste Method 8021 or 8260)
MH15B, LMP6A, LMP8A, DL2, DL5, DL6, DL7, DL8	Annually	Base/Neutral Extractable Compounds Acid Extractable Compounds

LANDFILL GAS MONITORING		
Sample Locations	Frequency	Parameters
LGW300 through LGW325, LGW326S, LGW326D, LGW327S, LGW327D, LGW328S, LGW328D, LGW329S, LGW329D, LGW36, LGW38, LGW39, LGW40, LGW41, LGW45, LGW46, LGW47, GW21, GW9, GW11, GW12, GT1, GT2, GW200, GW201, GW202, GW203, GMP6A, CO5, CO6, CO7, CO7S, CO7X GW401 through GW451	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46386 Gas Flow Rate 46387 Valve Percent Open 46388 Gas Temperature 00021 Ambient Air Temperature 00025 Barometric Pressure 00024 Trend in Barometric Pressure Ground Conditions

LANDFILL GAS MONITORING		
Sample Locations	Frequency	Parameters
Blower house east Blower house west	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46386 Gas Flow Rate
Blower house east Blower house west	Annually	VOCs and semivolatiles using methods 0030 for VOCs and 001 for semivolatiles from USEPA Test Methods for Evaluating Solid Waste, SW-846, 3rd Ed., November 1986.
GMW1RA, GMW1RB, GMW2R, GMW4, GMW8, GMW9, GMW22, GMW26A, GMW27A, TP1 through TP9, GP1 through GP4, GP10 through GP16, 17UR, 141U	Twice Monthly	46390 Vacuum 85547 Percent Methane 85550 Percent Oxygen 46388 Gas Temperature 00021 Ambient Air Temperature 00025 Barometric Pressure 00024 Trend in Barometric Pressure Ground Conditions
Johnson Wax Flow Meter	Twice Monthly	46384 Gas Volume
Flare Flow Meter	Twice Monthly	46384 Gas Volume

SURFACE WATER MONITORING		
Monitoring Locations	Frequency	Parameters
Outfall 1, Outfall 2, Outfall 4, Outfall 5, SW1, SW2	Quarterly	00010 Field Temperature 00094 Field Conductivity @ 25°C 00150 Total Suspended Solids 00310 BOD_5 00340 COD, Unfiltered 00400 Field pH 00937 Potassium 00929 Sodium, total 00940 Chloride 00945 Sulfate, total
SG1, SG3	Monthly	Water Surface Elevation

SURFACE WATER MONITORING		
Monitoring Locations	Frequency	Parameters
Outfall 6, Outfall 7	Quarterly	00150 Total Suspended Solids

Financial Responsibility and Long-Term Care

24. Revised proof of financial responsibility for closure and long-term care shall be provided with the Phase 1 construction documentation report, in accordance with ch. NR 520, Wis. Adm. Code. The proof of financial responsibility shall be established based upon the approved costs contained in the attached summary document.

25. The long-term care proof of financial responsibility period for this facility shall begin following final closure of the Northwest Expansion area. LRC shall provide long-term care for this facility in perpetuity.

26. LRC shall obtain a closure and long-term care license for the landfill immediately upon ceasing to accept waste at the landfill.

27. LRC shall continue to collect and treat leachate and landfill gas and remove groundwater from the gradient control system as they are produced until otherwise directed by the Department in writing.

The Department retains the jurisdiction either to require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications. Unless specifically noted, the conditions of this approval do not supersede or replace conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after this decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review

shall name the Department of Natural Resources as the respondent. This notice is provided pursuant to section 227.48(2), Stats.,

Dated: AUG 3 0 1996

DEPARTMENT OF NATURAL RESOURCES
For the Secretary,

Lakshmi Sridharan, Ph.D., P.E., Chief
Bureau of Waste Management

Cindy Cook, P.E.
Bureau of Waste Management

Timothy Kessenich, P.G.
Bureau of Waste Management

Appendix A.11
Conditional Close Out – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008
June 4, 2021

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State of Wisconsin
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June 04, 2021

HW CMEL
File Ref: FID 252076990
Racine County

Khalid Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Conditional Close Out – Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

The department initiated a hazardous waste compliance assessment of the Kestrel Hawk Landfill (KHL) in 2018 and issued a Notice of Noncompliance (NON) dated December 9, 2019. The NON contained alleged areas of non-compliance and areas of concern and requested further information and action. After receiving and reviewing response information from KHL, the department issued an Addendum to the Notice of Noncompliance dated September 16, 2020 (Addendum). The Addendum identified certain issues to be resolved, identified additional alleged areas of non-compliance and requested further information and action. KHL then provided the following responses regarding the Addendum.

- Letter dated November 16, 2020, regarding Addendum items 2,3,4,5,12, 13, 17 and 21.
- Letter dated March 2, 2012, regarding Addendum item 6.
- Letter dated April 7, 2021, regarding Addendum items 2, 4, 6, 7, 8, 9, 10, 13 and 15.

Thank you for these responses and for your cooperation through the course of this compliance assessment effort.

Today's letter is to close-out the compliance assessment, conditioned on remaining actions to be taken by KHL. If KHL takes the actions identified below within 90 days of the date of this letter, this compliance assessment will be considered closed and the department will not pursue further action. These actions are identified below within the subsection regarding A.9 and A.10. The department reserves the right to take further enforcement action if KHL does not take these actions, or if the department becomes aware of additional information that warrants further action.

Each of the 21 issues identified in the Addendum are discussed below in sections A and B. A new area of concern is added in section C as Item 22, although it does not require any action by KHL at this time. Sections D and E provide additional information and a conclusion, respectively.

A. Previously Identified Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks" – No further action required
   In the Addendum, the department indicated that this issue was resolved.

2. Manifesting of Oil-Absorbent "Socks" – No further action required

KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved.

3. LDR requirements for Oil-Absorbent "Socks" – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

4. Waste Determinations for Gas Processing Residuals – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

4.1 Disposal of Separator Oil – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

5. Waste Determination for Contaminated Groundwater - No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

5.1 Waste Determination for Leachate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

5.2 Waste Determination for Pipe Condensate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

6. Hazardous Waste Generator Annual Reporting – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

7. Hazardous Waste Generator Fees – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. Payment for $80.00 was received on April 29, 2021 for additional generator fees. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

8. LDR for POTW Discharges and NR 211 Notice – No further action required
KHL's April 7, 2021 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

9. Closure Plan -and- 10. Long-Term Care Plan
KHL's April 7, 2021 letter provided additional information in response to the Addendum.

Condition: As a condition of this close-out letter, KHL should submit within 90 days of the date of this letter a complete plan approval modification under chs. NR 500 and NR 514, Wis. Adm. Code, to request review and approval of the following:

- The "Closure Report" contained in Attachment 4 of KHL's April 7, 2021 letter, which describes hazardous waste unit (HWU)closure-related controls that were constructed in the 1980s and 1990s.
- The "Long-Term Care Plan" contained in Attachment 5 of KHL's April 7, 2021 letter, which is intended to consolidate long-term care responsibilities and requirements for the HWU and the non-hazardous waste units.

We recommend that regulatory citations in these documents be updated from ch. NR 665, Wis. Adm. Code, to the counterpart provisions of ch. NR 664, Wis. Adm. Code. This is addressed in the later section of this letter titled "Additional Information". See Item D.2 below for additional information,

Page 10 of the Closure Report "The amended feasibility and plan of operation requested under s. NR 665.0113(4) is not applicable because the HWU is separated from the non-hazardous wastes by the barrier wall that separates the nonhazardous waste disposal area from the areas where hazardous wastes were previously disposed". While the barrier wall may have been a contributing factor to continued non-hazardous waste operations after the final receipt of hazardous wastes, this statement is not entirely accurate. We recommend that this statement in the Closure Report be corrected when it is submitted as part of the plan approval modification.

11. Training – No further action required
In the Addendum, the department indicated that this issue was resolved.

12. Contingency Plan Distribution and Licensing – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved.

13. Operating Record – No further action required
KHL's November 16, 2020 and April 7, 2021 letters provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

14. FPOR – No further action required
In the Addendum, the department indicated that this issue was resolved.

15. Financial Assurance Cost Estimates – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

B. Previously Identified Areas of Concern

16. Tank System Requirements – No further action required
In the Addendum, the department indicated that this issue was resolved.

17. Gas Condensate Volumes; 90-day Storage – No further action required

KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

18. Emergency Communications – No further action required

In the Addendum, the department indicated that this issue was resolved.

19. Hazardous Waste Facility Annual Reporting– No further action required
In the Addendum, the department indicated that this issue was resolved.

20. Solid Waste Program Annual Reports – No further action required
In the Addendum, the department indicated that this issue was resolved.

21. Transportation of Gas Condensate – No further action required
KHL's November 16, 2020 letter provided additional information in response to the Addendum. The department considers this issue to be resolved. Please refer to Item 22 below for a related area of concern regarding the regulatory status of condensate from landfill gas processing.

C. New Area of Concern

22. Condensate from Landfill Gas Processing; Regulatory Status
KHL operates a biogas plant that dewaters landfill gas prior to off-site shipment via pipeline for use as energy. There has been a question raised about the RCRA status of the liquid generated from the dewatering process (sometimes referred to as "condensate" or "gas processing residuals" in the correspondence). Much of this information is captured in Attachment 5 of KHL's November 16, 2020 letter. Additional information was provided by KHL's counsel in emails dated December 30, 2020 and January 13, 2021. KHL's information has contributed to the positions currently taken by the department in this letter regarding Items 4, 4.1, 6, 7, 13, 15, 17 and 21 in this letter and there are no further actions that KHL needs to take with respect to these issues at this time.

The department intends to seek clarification on this issue from U.S. EPA, including further discussion regarding RO 12362 (January 11, 1985), which generally states that condensate generated from landfill with listed hazardous waste is always a hazardous waste. If additional information is developed that is not consistent with KHL's position, the department reserves the right to revisit the related aspects of today's letter.

D. Additional Information

1. Current Operating License
KHL has operated since 1970 and continues to operate under license #572. The following identifies some key hazardous waste-related aspects of the license history, taken from previous approval documents:
    - License 572 incorporates all plans of operations and approvals since the original licensing for the Land Reclamation Landfill, Inc (LRL) in 1970. Approvals issued in the 1970's allowed for the disposal of solid waste and hazardous waste (as defined prior to RCRA).
    - In November 1980 LRL submitted a Part A application to U.S. EPA in order to continue hazardous waste disposal activities under interim status when the RCRA hazardous waste program first took effect. Hazardous waste disposal occurred in Corridors 1 through 6 (the HWU).
    - LRL's interim license application for continued hazardous waste disposal was denied by the Department on December 10, 1982 based on the absence of sufficient information and detail in LRL's application documents. This required the cessation of hazardous waste disposal by January 1, 1993.
    - U .S . EPA "called in" LRL's RCRA Part B permit application on February 7, 1983 . LRL responded to U. S. EPA in a letter dated August 5, 1983, by stating that LRL had "decided not to pursue, at this time, a federal permit or state license to operate a hazardous waste landfill", and

that the Part B permit application would not be filed. This letter also stated that nonhazardous waste was continuing to be placed in the HWU and that the HWU would be closed when final approved grades were reached.

- On December 19, 1984 was LRL was granted approval to continue and contiguously expand its solid waste disposal operations under license #572 into Corridors 6 through 13. This required construction of containment barriers for the HWU and capping of the HWU prior to contiguous filling in new corridors. Later, on August 30, 1996, the Northwest Expansion was approved to allow for continued solid waste landfilling at the facility under License #572.
- The facility took actions under license #572 to install a number of environmental controls for the HWU. These activities and approvals are described in KHL's Closure Report (contained in Attachment 4 of KHL's April 7, 2021 letter) and include, for example, a barrier wall, containment structure, "RCRA Cover", slope stabilization, drainage trench, and a slurry cutoff wall. These improvements occurred in phases between 1985 and 2001 as required under license #572 to, in part, allow for the continued non-hazardous waste disposal at the facility rather than overall facility closure.
- The plan of operation and long-term care requirements of License #572 have established requirements for ongoing maintenance and monitoring of the HWU.

In summary, the facility (including the HWU) has not achieved facility closure because of continuing non-hazardous solid waste landfill operations. However, as required by License #572, the HWU was capped and has been maintained and monitored in a manner consistent with the long-term care requirements in s. NR 664.0117, Wis. Adm. Code. The imposition of these requirements under License #572 served to represent final administrative disposition of the operating license application under s. NR 670.073(1), Wis, Adm. Code. Accordingly, License #572 serves to function as an enforceable document for long-term care under s. NR 670.001(3)(g), Wis. Adm. Code, until the facility achieves closure under s. NR 664.0113, Wis. Adm. Code, and a long-term care license is issued under ch. NR 670, Wis. Adm. Code.

2. NR 664 Requirements
   As established in s. NR 664.0003, Wis, Adm. Code, because final administrative disposition of the owner or operator's operating license application has occurred under license #572, KHL is subject to the requirements of ch. NR 664, Wis. Adm. Code. In previous correspondence the department had inaccurately referred to certain parallel requirements in ch. NR 665, Wis. Adm. Code. We apologize for this error.

3. Revised Procedures
   In correspondence related to this compliance assessment, including its responses dated November 16, 2020 and April 7, 2021, KHL has informed the department of several changes to its previous procedures intended to demonstrate compliance with the hazardous waste requirements in chs. NR 600 through 679, Wis, Adm. Code. The department recommends that KHL continue to implement these updated procedures. Examples include annual reporting for generators and licensed facilities and operating record maintenance. KHL may also desire to memorialize these sorts of procedures within its Plan of Operation under License #572, perhaps as part of the plan approval modification per Items and 10 above.

E. Conclusion

As previously discussed, the history of compliance requirements and actions for this facility is long and complex. The continued goal of the department is to assist KHL in navigating these issues and to support KHL's continued efforts to achieve compliance. We hope that this compliance assessment process assists KHL in its efforts to

demonstrate compliance with hazardous waste requirements in chs. NR 600 through 679, Wis, Adm. Code, and in preparing to achieve closure and enter long-term care in the future.

The department recommends you take the actions recommended in this letter to address the remaining areas of noncompliance and areas of concern within 90 days of the date of this letter. While we appreciate your response and completion of these actions, please understand that failure to properly respond in a timely manner may result in escalated enforcement actions. Alleged noncompliance may also be enforced by the United States Environmental Protection Agency.

If additional time is needed, please provide a request for a new due date and the reason(s).

Please contact me with any questions at 608-843-2160 (mobile) or douglas.coenen@wisconsin.gov.

Regards,



Douglas W. Coenen, P.E.
Hazardous Waste Engineer
Hazardous Waste Prevention and Management Section
Waste and Materials Management Program

cc: Jerry Demers, WDNR
David Buser, WDNR
Mike Williams, KHL
Jonathan Hotstream, TRC

Appendix A.12
Notice of Non-Compliance – Hazardous Waste Compliance Assessment – Kestrel Hawk Landfill – EPA ID WID076171008
December 9, 2019

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State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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December 9, 2019

HW CMEL
File Ref: FID 252076990
Racine County

Khalil Umer, P.E.
Republic Services
1969 Oakes Road
Racine, WI 53406

SUBJECT: Notice of Non-Compliance (NON)
Hazardous Waste Compliance Assessment
Kestrel Hawk Landfill
EPA ID WID076171008

Dear Mr. Umer:

The department has completed its hazardous waste inspection and compliance assessment for Republic Service's Kestrel Hawk Landfill (KHL), located in Racine County, Wisconsin. The assessment was initiated with an on-site visit on June 14, 2018, which was followed by several records requests. In support of this review, KHL and their consultant, TRC Environmental (TRC) provided a substantial amount of information and records to the department. Attachment A summarized the key information requests and responses. Thank you for your cooperation in this effort.

As background, KHL is a large quantity hazardous waste generator subject to the requirements of Ch. NR 662, Wis. Admin. Code, and a licensed hazardous waste landfill under the interim status provisions of s. ch. NR 665 and NR 670.010(5)(a), Wis. Admin. Code. According to KHL, the landfill unit historically used for interim-licensed hazardous waste disposal generally consists of Corridors 1-6 (which total approximately 30 acres) and is referred to as the hazardous waste unit (HWU). According to KHL, the HWU ceased accepting hazardous waste in 1982. Though much of the HWU is capped with final cover, KHL has not yet obtained closure approval, because non-hazardous solid waste disposal has continued to occur in waste disposal units contiguous with the HWU. Also, a small portion of the HWU (about 2 acres, according to TRC's July 26, 2018 report) has not been capped with approved final cover because KHL plans to add non-hazardous waste above this area prior to capping.

The HWU does not have a base liner and leachate collection system that meets current landfill requirements. KHL is undergoing hazardous waste corrective action due to past releases from the HWU.

The compliance inspection and assessment indicate that KHL is not in compliance with the hazardous waste requirements of Chapters NR 660 to 679, Wis. Adm. Code. Identified below are 15 alleged areas of noncompliance with Chapters NR 660 to 679, Wis. Adm. Code, and the actions you should take to move towards resolution of these issues. Also identified below are 6 areas of concern and recommended actions to address these issues.

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This compliance assessment was coupled with a field visit in July 2018 by the department's David Buser and subsequent completion of the groundwater monitoring O&M form. These findings were provided to KHL in a letter dated October 5, 2018. No alleged areas of non-compliance were noted.

This compliance assessment primarily relied on information provided by KHL and its consultant, TRC Environmental Corporation regarding applicable code requirements (Attachment 1). However, in general, it did not involve review of the requirements of past department approval letters.

Alleged Areas of Noncompliance

1. Waste Determinations for Absorbent "Socks": Failure to make a correct hazardous waste determination as required by s. NR 662.011, Wis. Adm. Code, for the oil-absorbent "socks" used to extract floating product from the Hazardous Waste Unit's (HWU) leachate and gas extraction wells. According to the records provided (see Attachment B), KHL has periodically generated these oil-absorbent "socks" and shipped them off-site for disposal as a non-hazardous waste, but improperly determined that they were only TSCA-regulated materials and not hazardous waste. A correct waste determination would conclude that these oil-absorbent "socks" are listed hazardous wastes per ss. NR 661.03(1), (2) and (7), Wis. Adm. Code (commonly referred to as the "mixture rule") and/or ss. NR 661.03(3), (4) and (7), Wis. Adm. Code (commonly referred to as the "derived-from rule"), bearing the codes of the listed wastes that were disposed in the HWU. The oil-absorbent "socks" are be a F039 listed hazardous waste and could be a characteristic hazardous waste. If analytical testing is used to determine if the oil-absorbent "socks" are a characteristic hazardous waste, then a representative sample of the oil-absorbent "socks" should be collected and analyzed. Please feel free to contact the department for assistance in understanding what a meant by a representative sample.

   To comply with this requirement, KHL shall determine perform a waste determination and identify all applicable hazardous waste codes for the oil-absorbent "socks" in accordance with s. NR 662.011, Wis. Adm. Code. The department recommends that KHL provide the department with documentation showing a correct waste determination within 60 days of the date of this letter.

2. Manifesting of Oil-Absorbent "Socks": Failure to properly manifest a hazardous waste shipment, as required by s. NR 662.020(1), Wis. Adm. Code. According to the records provided, KHL generated and shipped off-site for disposal hazardous waste oil-absorbent "socks" (see Attachment B, Section B-1) and improperly manifested them as TSCA-regulated materials but not as hazardous wastes. To comply with this requirement, all shipments of hazardous waste shall be properly manifested.

   This failure to properly manifest wastes requires recordkeeping and reporting updates. For improperly manifested shipments that occurred since Jan. 1, 2015:

   a. The department recommends that KHL update the manifest records. For shipments prior through June 30, 2018, please contact the department's Aggie Cook at (608) 266-2414, or Agnes.Cook@Wisconsin.gov for detailed instructions. For shipments after, June 30, 2018, corrections should be made within U.S. EPA's e-manifest system.
   b. The department recommends that KHL notify the recipient(s) of improperly manifested hazardous waste so they can take appropriate actions, such as the unmanifested waste report

requirements of s. NR 664.0076, Wis. Adm. Code, or for out-of-state facilities, 40 CFR 264.76 or similar destination state requirements.

The department recommends that KHL provide the department with documentation of these recommended actions within 90 days of this letter.

3. LDR requirements for Oil-Absorbent "Socks": Failure to provide a land disposal restriction (LDR) notification, as required by s. NR 668.07(1)(b), Wis. Adm. Code. According to the records provided, KHL generated and shipped off-site for disposal hazardous waste oil-absorbent "socks" since 2015 (see Attachment B, Section B-1) without an LDR notification. To comply with this requirement, the initial LDR written notification shall be retained on-site and provided to the destination facility when it receives the initial shipment of the hazardous waste.

   The department recommend that KLH, within 60 days of this letter, provide the department with a copy of the LDR notification developed for use in future shipments, and documentation that the LDR has been provided to all destination facilities that received shipments of hazardous waste oil-absorbent "socks" since Jan. 1, 2015.

4. Waste Determination for Gas Processing Residuals: Failure to make a hazardous waste determination as required by s. NR 662.011, Wis. Adm. Code, for landfill gas condensate waste generated at the landfill gas blower/flare facility. The department's December 4, 2018, information request (item 5.d) asked for the waste determination for this waste stream. TRC's March 4, 2019, response to Item 5.d referred to analytical results from a different waste which consisted of combined flows of multiple liquid waste streams at manhole 15B. The response did not provide consider or provide any analytical data regarding characteristic waste codes and did not consider that condensate waste from its landfill gas blower/flare facility that handles gas from the HWU is a F039 listed hazardous waste per the "mixture rule" and/or "derived-from rule". U.S. EPA's RO 12363 also establishes that gas condensate derived from a landfill containing listed waste is always a hazardous waste (unless it is delisted).

   It is further noted that TRC's report dated April 30, 2019, item 3.a. discussed an oil-water separator located between the point of generation and a storage tank that generates two waste streams. Separate waste determinations are required for the "oil" component generated at the separator and the remaining condensate wastes that are routed to the tank.

   To comply with this requirement:

   - a waste determination of the landfill gas chiller condensate shall be made at the initial point of generation, and the determination shall consider the waste's characteristics, including but not limited to ignitibility, and its listing under the "mixture rule" and/or "derived-from rule".

   - a waste determination of both wastes generated by the oil-water shall be made at the point of generation, and the determinations shall consider the waste's characteristics, including but not limited to ignitibility, and its listing under the "mixture rule" and/or "derived-from rule".

   The department recommends that, with 60 days of this letter, KHL provide the department with:

   a. copies of these waste determinations and supportive documentation.

b. quantities and dates of oil removed from the separator for each removal event since Jan. 1. 2015, and a description of how the oil was managed.
c. if the oil component is managed off-site, a summary of the dates, quantities and destination facilities (intermediate and final) for shipments initiated since Jan. 1. 2015, including copies of all associated manifests and/or bills of lading.
d. a description of how the management of the oil component has complied with s. NR 679.10(2)(a), Wis. Adm. Code (Used Oil Management Standards).

5. Waste Determination for Contaminated Groundwater: Failure to make a hazardous waste determination for liquids generated in association with the HWU, as required by s. NR 662.011, Wis. Adm. Code. These liquids include, for example, contaminated groundwater collected from the area 141U extraction system and from the groundwater collection pipe/trench along the southern perimeter of the HWU. These liquids are collected as part of corrective actions intended to control releases from the HWU and contain waste constituents or leachate from the HWU and are actively managed as part of corrective actions.

   Item 6 of the department's information request dated December 4, 2018 asked for waste determination information regarding contaminated groundwater generated from these systems (which according to TRC's April 30, 2019, report is discharged to the local sewer system). TRC's March 4, 2019, response (Item 6) asserted that the liquids from area 141U system are exempt under the domestic sewage exclusion. This is incorrect; under s. NR 661.04(1)(a)2., Wis. Adm. Code, the exclusion applies only after the hazardous waste mixes with domestic sewage that is passing through a sewer system to a publicly-owned treatment works (POTW). The point of generation for the contaminated groundwater occurs upon its collection and active management (well prior to any mixing with domestic sewage), at which point it is subject to a hazardous waste determination. If the waste is a hazardous waste, then the waste is subject to all applicable hazardous waste requirements prior to meeting the exclusion. It is also noted that in several RCRA Online documents (e.g. RO 11051, RO 13121, RO 13438, and RO 13509), U.S. EPA has articulated that groundwater contaminated by a listed hazardous waste (e.g. F039 leachate, or constituents derived from the listed hazardous wastes disposed in the HWU) is a hazardous waste when actively managed.

   To comply with this requirement, waste determinations shall be made for contaminated groundwaters at the point of generation and shall consider the "mixture rule" and/or "derived from rule". These groundwaters include:

   - the extracted groundwater from the area 141U system,
   - the groundwater collection pipe/trench along the southern perimeter of the HWU, and
   - any other groundwater that is collected and is potentially affected or contaminated by the HWU or constituents from the HWU.

   The department recommends that KHL provide the department with these waste determinations and associated documentation within 60 days of this letter.

6. Hazardous Waste Generator Annual Reporting: Failure to properly report generated hazardous waste in the annual report as required by s. NR 662.041, Wis. Adm. Code.

a. Adsorbent “Socks”; According to the records provided, KHL generated and shipped off-site for disposal hazardous wastes (oil-absorbent “socks”) since 2015. These wastes were not reported in the annual hazardous waste reports for 2015 through 2018.

   It is also noted that Item 4 of TRC’s March 4, 2019 report states that there have been 3 removal events for this material since July 7, 2015. However, as summarized in Attachment B, Section B-1, there appears to have been at least 5 such removal events.

b. Manifest Records: The department’s manifest records indicate the off-site shipment of three loads of hazardous waste bearing the waste code D039 (Tetrachloroethylene) during 2015. Information on these shipments is summarized in Attachment B, Section B-2. These wastes were not reported in the annual hazardous waste report for 2015 (nor for the other odd-numbered 2017 report).

c. Leachate Volumes: The 2017 annual hazardous waste report indicated a that the total waste quantity and leachate quantity were equal and reported to be 4,140,490 gallons (34,490,282 pounds). TRC’s April 30, 2019, report states that this number is incorrect due to errors in transposing totalizer numbers and should have been reported to be 342,000 gallons (or approximately 2,848,860 pounds).

d. Leachate Volume Variability: Please note that the department’s compliance assessment work to date has not included a detailed analysis of quantities reported in annual hazardous waste annual reports for years other than 2017. However, it is noted that the amounts of amount of hazardous waste and leachate reported for 2015 through 2018 have varied widely (5,770,691 lbs. in 2015, 14,827,650 lbs. in 2016, and 841,030 lbs. in 2018). Such variability is not consistent with the department’s understanding of the facility’s leachate management operations during this period. This could represent additional annual reporting inaccuracies.

e. Non-Leachate Liquids and Mixtures: It is not clear if quantities of hazardous wastes other that “leachate” have been reported in KHL’s past annual hazardous waste reports, including the following examples:

   - According to information provided, KHL generated two condensate wastes (oil/water separator oil and effluent) from its landfill gas chiller and blower/flare facility, which are derived-from listed hazardous waste. According to Table 2 of TRC’s report dated March 4, 2019, there was a total of 50,200 gallons of gas condensate pumped from the tank located at the gas chiller/blower/flare facility and transported for disposal at the Racine sewer manhole
   - No information regarding the disposal of separated oil volumes for the oil-water separator at the gas processing facility has been provided.
   - KHL generated contaminated groundwater from its area 141U extraction system and groundwater collection systems/trenches impacted by the HWU, which is hazardous waste.
   - Figure 11 of KHL’s solid waste annual report dated June 12, 2018 suggests that all leachate and liquids collected throughout the facility for sewer disposal are combined at MH15B prior to discharging to pipe that delivers the mixture to the City of Racine sewer system at manhole within Oakes Road. If leachate, condensate, or other liquids from non-HWU parts of the landfill (such as liquids from or near the old City of Racine Landfill, and Corridors 7-11)

are mixed with hazardous waste prior to mixing with domestic sewage, then the entire mixture is hazardous waste.

f. Waste Generation Information: Item 1 of the department's request, dated December 4, 2018, requested the identification of and waste determinations for solid wastes and hazardous wastes generated for each of the past 3 years and 10 years, respectively, and basic information related to these wastes. KHL's response did not provide a complete response. For example:

- Item 1.a of TRC's March 4, 2019 report identified leachate from the HW and oil-absorbent "socks" as hazardous waste based on generator knowledge. The response added that KHL "does not regularly generate on-site any additional solid wastes other than the normal non-hazardous trash and garbage generated by employee and maintenance shop activities". The department's request was not limited to wastes generated "regularly".
- While Item 1.a of TRC's March 4, 2019 report mentions leachate, it does not discuss landfill gas condensate, contaminated groundwater extracted from the 141U area remediation system, and contaminated groundwater extracted from the groundwater gradient control systems.
- Item 1.a of TRC's March 4, 2019 report mentions solid wastes generated by maintenance shop activities" but does not discuss any waste determination for these waste streams.
- Item 1.a of TRC's March 4, 2019 report refers to Attachment 2 for the oil removal activities. Otherwise, the response did not make any mention of hazardous waste examples identified by the department in its request: old wastes exhumed or taken from the HWU, materials mixed with HWU wastes, and discarded equipment that contacts HWU wastes.
- No mention of waste determinations was made in TRC's March 4, 2019 report, except for wastes associated with HWU oil removal.

To comply with this requirement, KHL shall accurately report all hazardous wastes generated in its annual hazardous waste reports. The annual reports should consider the results of all waste determinations performed per s. NR 662.011, including but not limited to HWU leachate, HWU condensate, HWU contaminated groundwater, and other "derived-from" or "mixture rule" wastes such as:

- oil absorbent materials
- oil-water separator oils and post-separator effluent at the landfill gas processing area
- discarded equipment or materials contaminated by F039 or other "derived-from" or "mixture rule" hazardous wastes
- discarded filters or other components used in hazardous waste liquid pumping or gas processing)
- combined flows of hazardous wastes with other wastes under the "mixture rule" (such as leachate or gas condensate from other landfill units that are mixed with hazardous wastes prior to mixing with domestic sewage)
- wastes removed or exhumed from the HWU
- solids or debris removed from the piping, pump station and manhole systems that convey hazardous wastes.

Annual reports also need to report hazardous wastes generated through other operations at KHL apart from HMU, such as waste from heavy equipment maintenance activities, and unacceptable wastes delivered to the current landfill but not disposed).

The department recommends that KHL provide a report (for the purposed of this letter, the "Hazardous Waste Generation Report") to the department, within 60 days of this letter, with accurate quantities (and other information required in ss. NR 662.041(3)(a) through (d), Wis. Adm. Code) for hazardous waste generated during each of the years 2014, 2015, 2016, 2017 and 2018. The department also recommends the following:

- This report should provide appropriate support/documentation for the quantities, and a table that details the quantities of each different hazardous waste.
- The report should include copies of all of manifests or shipping papers from KHL through final disposal for all off-site shipments of hazardous waste initiated during these years and indicate if off-site management occurred at a RCRA-permitted hazardous waste facility or not.
- The report should identify hazardous wastes and quantities that were disposed in the City of Racine sewer system, by year.
- It may be helpful to include a schematic that identifies and depicts the flows of the various liquid hazardous wastes prior and after to mixing with non-hazardous wastes.
- In order to support its contents and conclusions, the report should include copies of the waste determinations made for each solid waste* generated during the years 2014, 2015, 2016, 2017 and 2018. Please refer to Publication WA1152, Waste Determinations and Recordkeeping, for further information. (*Note that this publication states, "Solid waste streams that do not require a waste determination include wastes that have no potential to be a hazardous waste"). This can be found at: https://dnr.wi.gov/files/PDF/pubs/wa/WA1152.pdf

We recommend that KHL present this information in normal correspondence format; if revisions to previous electronic submittals are necessary, we can then advise KHL of the procedures to do so.

7. Hazardous Waste Generator Fees: Failure to pay environmental repair tonnage-based fees ($20 per ton of hazardous waste generated), as required by 289.67(2), Wisc. Stats. To comply with this requirement, hazardous waste quantities shall be properly reported and applied to fee calculations.

   Based on the findings of Item 6 above, KHL has not included all quantities of generated hazardous waste in its annual hazardous waste reports. The waste quantities in these reports are also used to compute fees required to be paid to the State. The department recommends that:

   a. Within 60 days of the days of this letter, KHL provide a report to the department that calculates, by waste type and in total, the total amount of paid and unpaid fees for 2014, 2015, 2016, and 2017. KHL may choose to include this along with the information provided in response to Item 6 above.

      We recommend that KHL present this information in normal correspondence format; if revisions to previous electronic submittals are necessary, we can then advise KHL of the procedures to do so.

b. Within 90 days of the days of this letter, KHL provide payment for the unpaid fees. The department reserves the right to impose fees for additional amounts due and/or other years of underpayment, and payment of appropriate late fees and/or interest.

Please note that according to 289.67(2)(c), Wisc. Stats., fees are not required for "leachate which contains hazardous waste which is being transported to a wastewater treatment plant or is discharged directly to a sewer pipe" and for "hazardous wastes which are removed from a site or facility to repair environmental pollution."

8. LDR for POTW Discharges: Failure to maintain a one-time written LDR notification form in KHL's on-site file, as required by s. NR 668.07(1)(g), Wis. Adm. Code. This notice shall "describe the generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from ch. 291, Stats., and chs. NR 660 to 673 regulation, and the disposition of the waste", and shall be placed in the on-site files. TRC's March 4, 2019, report, section 6.c., refers to a 1983 leachate testing agreement, which does not contain or reference the required information.

   To comply with this requirement, KHL shall develop and place a one-time written LDR notice form in the facility file. To return to compliance, the department recommends that, within 90 days of the days of this letter, KHL provide a copy of this notice.

9. Closure Plan: Failure to have the required contents in the closure plan, as listed in s. NR 665.0112(2), Wis. Adm. Code.

   On December 4, 2018, the department requested that KHL confirm that all required elements are contained in the approved closure plan. TRC's response (dated March 4, 2019, item 18) asserted that these closure plan requirements do not apply to KHL because KHL ceased accepting hazardous waste in 1982, and all areas of the HWU have been partially or completely closed. This is incorrect; under s. NR 665.0001(2) Wis. Adm. Code, all closure requirements apply to KHL until closure is approved and a long-term care license is issued.

   The department has reviewed KHL's current closure plan (provided as Appendix 13 of TRC's response dated March 4, 2019) and found that the plan does not contain the information required in s. NR 665.0112, Wis. Adm. Code. Also note that the current plan's introductory sections refer to NR 500-series solid waste rules but do not refer to the applicable hazardous waste requirements.

   Item 19 of the department's request dated December 4, 2018, asked for confirmation that the closure plan contains the closure schedule, as required by ss. NR 665.0112(2)(f) and 665.0112(3)(a)2, Wis. Adm. Code. TRC's March 4, 2019, response did not provide this information. The department recommends that the updated HWCP include the expected closure schedule.

   To comply with this requirement, KHL's closure plan shall at a minimum address each of the pieces of information required by ss. NR 665.0112(2)(a) through (h), Wis. Adm. Code.

   More specifically, as provided for in s. NR 665.0112(3)(d), Wis. Adm. Code the department hereby requests that KHL submit a license modification to the department within 90 days of this letter to propose a hazardous waste closure plan (HWCP) that includes the plan contents in s. NR 665. 0112(2), Wis. Adm. Code. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. KHL may combine the applicable

requirements of the NR 500-series solid waste rules into this plan. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

If KHL determines that certain elements of information in s. NR 665.0112(2), Wis. Adm. Code, are not applicable, the HWCP should explain the reason. Examples may include those items applicable only to clean-closure of HWU's.

The updated HWCP should consider the following additional comments from the department's review of the information presented by TRC, which identified a 2.04-acre area of the HWU that remains uncapped. The department recommends that the HWCP describe the current cover conditions for this area and the remaining capping that is planned. The department's review of TRC's information regarding current and proposed cover conditions identified the following issues, which the department recommends be clarified in the updated HWCP:

- It appears that the barrier wall does not extend across the entire 2.04-acre uncapped area (see Figure 1 in Attachment 5 of TRC's August 25, 2018 report). Yet TRC's text (see page 2 of the same report) states that the barrier wall separates the HWU from the non-hazardous waste area. This seems inconsistent; are there HWU wastes in this area that are not covered by the barrier wall?
- Per TRC's Figure 2-A, the entire 2.04-acre uncapped area extends into the Corridor 8, 9 and 10 area and the Corridor 11 area. This suggests that portions of the HWU are outside of Corridors 1 through 6. Is this correct?
- Referring to the 2.04-acre area, TRC's August 25, 2018 report states that "Republic will install a "Resource Recovery and Conservation Act (RCRA) final cover over this area" after final grades are achieved through additional landfilling of non-hazardous wastes. However, the design of this cap system (e.g. the cross-sectional layers and the method of tie-in to existing cap) is not described.
- TRC provided a drawing entitled "Figure 1, Constructed Final Cover Locations", dated July 2018, as Attachment 5 to its August 2, 2018 report. It depicts (among other things) previously-placed final cover locations and profile descriptions, the "location of RCRA final cover not yet installed", and the location of the "sloped barrier wall". The HWCP should include this sort of drawing, but the drawing should also show the horizonal boundary of the HBU, along with associated corridor limits.

The department recommends that the updated HWCP address the cover standards of s. NR 665.0310(1), Wis. Adm. Code and the closure performance standards of s. NR 665.0111, Wis. Adm. Code, and that the HWCP incorporate the closure cost estimates addressed in Item 15 below.

10. Long-Term Care Plan: Failure to meet the long-term care plan requirements as established in s. NR 665.0118(3), Wis. Adm. Code.

On December 4, 2018, the department requested that KHL confirm that all required elements are contained in the approved long-term care (LTC) plan. TRC's response (dated March 4, 2019, item 18) asserts that these all LTC plan requirements do not apply to KHL because KHL ceased accepting hazardous waste in 1982, and all areas of the HWU have been partially or completely closed. This is incorrect; under s. NR 665.0001(2) Wis. Adm. Code, all long-term care plan requirements apply to KHL.

The department reviewed KHL's current LTC plan (provided as Appendix 13 of TRC's response dated March 4, 2019) and determined that it does not refer to or contain the information required in NR 665.0118(3), Wis. Adm. Code. Our review noted that the introductory section of this plan refers to the NR 500-series solid waste rules, but do not refer to the applicable hazardous waste requirements.

To comply with this requirement, KHL's long-term care plan shall contain at a minimum each of the pieces of information required by s. NR 665.0118(3), Wis. Adm. Code.

More specifically, as provided for in s. NR 665.0118(4)(d), Wis. Adm. Code the department hereby requests that KHL submit a license modification to the department within 90 days of this letter to propose a hazardous waste long-term care plan (HWLTCP) that includes the plan contents in NR 665. 0118(3), Wis. Adm. Code. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. KHL may combine the applicable requirements of the NR 500-series solid waste rules into this plan. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

If KHL determines that certain elements of information in s. NR 665.0118(3), Wis. Adm. Code, are not applicable, the HWCP should explain the reason. An example may include s. NR 665.0118(3)(d), Wis. Adm. Code, which refers to provisions in s. NR 665.0121 regarding enforceable documents in lieu of a license.

The department recommends that the HWLTCP address the long-term care standards of s. NR 665.0310(2), Wis. Adm. Code and the long-term care and property use provisions in s. NR 665.0117, Wis. Adm. Code, and incorporate the long-term care cost estimates addressed in Item 15 below.

11. Training: Failure to maintain a training program and documentation as required by ss. NR 665.0016(1) through (5), Wis. Adm. Code. To comply with this requirement, KHL shall ensure that these code requirements are met.

    a. Training Program: The department's December 4, 2018, request asked for a description of KHL's training program required by ss NR 665.0016(1), Wis. Adm. Code. TRC's response (dated March 4, 2019, item 10) referred to the facility's contingency plan for its training plan. This plan did not address each of the required elements listed in ss. NR 665.0016(1) through (3), Wis. Adm. Code. In particular, the contingency plan does not address the requirements of s. NR 665.0016(1)(a), Wis. Adm. Code, which requires that the training program "ensures the facility's compliance with the requirements of this chapter", and include [by reference to NR 665.0016(4)(c)] "a written description of the type and amount of both introductory and continuing training that will be given".

       The department recommends that, within 60 days of this letter, KHL provide a written description of its training plan that addresses each of the requirements of ss. NR 665.0016(1) through (3), Wis. Adm. Code. Alternatively, rather than submitting a stand-alone document, KHL may include the plan as part of the FPOR addressed in Item 14.

    b. Training Documentation: The department's December 4, 2018, request asked for training documents and records as required by ss. NR 665.0016(4) and (5), Wis. Adm. Code. Attachment 9 of TRC's response (dated March 4, 2019) contained some documentation of annual "HWU

contingency plan" training but did not contain the information required be maintained at the facility, such as job titles and descriptions, names, a description of the type and amount of both introductory and continuing training, and documentation of training completed by assigned personnel.

The department recommends that, within 90 days of this letter, KHL deliver all necessary training defined by the training program requirements of ss. NR 665.0016(1) though (3), Wis. Adm. Code and provide the department with copies of the training documentation and records required in s. NR 665.0016(4), Wis. Adm. Code.

More broadly, in order to address ch. NR 665, Wis. Adm. Code, training program requirements, we recommend that KHL identify in its training plan a list of positions/personnel performing activities needed to properly and safely maintain and monitor the hazardous waste unit to ensure compliance with all applicable NR 665 requirements (rather than just the contingency plan), and the associated a description of the training required for these personnel. For example, such individuals could be those involved in inspections, repairs, monitoring and recordkeeping required by HWU maintenance requirements and corrective action obligations. Note that training for these positions/personnel and activities could involve site employees and vendors/contractors that participate in or perform such tasks.

12. Contingency Plan Distribution and Licensing: Failure to submit copies of the contingency plan to local emergency response officials as required by s. NR 665.0053(2), Wis. Adm. Code. Failure to submit a license modification in accordance with s. NR 670.042, Wis. Adm. Code.

    Attachment 9 of TRC's March 4, 2019, response included provided a copy of KHL's contingency plan, bearing a revision date of June 2018, and a copy of a contingency plan notification and transmittal letter to local municipal entities in Attachment 11. According to TRC's letter report dated April 30, 2018, the correct date of this notification letter was January 2, 2019, rather that the date mistakenly shown as January 2, 2018 in Attachment 11.

    a. The notification and transmittal letter to local municipal entities dated January 2, 2019, did not occur until at least 180 days after the plan was modified. This is later than allowed in s. NR 670.042, Wis. Admin. Code for any class of license modification.

    b. The notification and transmittal letter was not addressed to local hospitals and police departments, as required by s. NR 665.0053, Wis. Adm Code.

    Furthermore, changes to contingency plans represent an alteration as described in s. NR 670.041(1)(a), Wis. Adm. Code, and require a license modification in accordance with s. NR 670.042, Wis. Adm. Code. KHL did not submit a license modification.

    To comply with these requirements, KHL shall submit copies of the contingency plan to all specified local emergency response officials and submit the appropriate license modification when changes to the plan occur. The department makes the following recommendations:

    (i) KHL shall first ensure that the current contingency plan is promptly provided to local hospitals and police departments. The department recommends that KHL, within 60 days of this letter, provide documentation of this correspondence.

(ii) The department recommends that that KHL submit, within 60 days of this letter, a license modification to the department addressing contingency plan changes. In proposing what class this modification would be, KHL should consider the process outlined in s. NR 670.042(4)(a), Wis. Adm. Code. Alternatively, rather than submitting a stand-alone plan, KHL may include the plan as part of the FPOR addressed in Item 14.

13. Operating Record: Failure to maintain the operating record as required by s. NR 665.0073, Wis. Adm. Code. Item 13 of TRC's March 4, 2019, response asserts that the operating record requirements of s. NR 665.0073(2) do not apply to KHL because it "is not a currently active hazardous waste facility and has not accepted hazardous waste since 1982". This is not correct. Per s. NR 665.0001(1), Wis. Adm. Code, the facility is subject to these (and other) requirements until it achieves approved closure under ch. NR 665. To comply with this requirement, KHL shall ensure that the operating record is complete and properly maintained.

    The department recommends that, within 60 days of this letter, KHL provide a description of its plan to properly establish and maintain its operating record. Alternatively, rather than submitting a stand-alone plan, KHL may include this description as part of the FPOR addressed in Item 14.

14. FPOR: Failure to have a feasibility and plan of operation report (FPOR) addressing delayed closure as required by s. NR 665.0113(4), Wis. Adm. Code. Delayed closure of a landfill facility or landfill unit is allowed when the requirements of s. NR 665.0113(4), Wis. Adm. Code are met. These requirements generally address effects and impacts related to the acceptance of non-hazardous wastes after final receipt of hazardous wastes. This requirement specifically relates to KHL's current status as a non-closed facility and the fact that KHL has not closed its HWU within 180 days after receiving the final volume of hazardous waste. Item 16 of TRC's March 4, 2019, response asserts, "This rule does not apply to Kestrel Hawk since it has always been permitted to receive non-hazardous waste. The HWU is now closed and does not accept non-hazardous waste." This is not correct. Until the landfill facility achieves approved closure, it is subject to these code requirements.

    To comply with this requirement, KHL shall submit an FPOR. The department recommends that KHL, within 120 days of this letter, submit an FPOR to the department in the form of a license modification under s. NR 670.042, Wis. Adm. Code. The FPOR should address the currently applicable requirements of ch. NR 665, Wis. Adm. Code, and the relevant content requirements of ch. 670, Wis. Adm. Code. The department is willing to work with KHL to more precisely identify these content requirements.

    KHL may be required to provide public notice when submitting this plan in accordance with s. NR 670.042, Wis. Adm. Code. KHL is required to pay a review fee when submitting this plan, as required in NR 670.010(12), Wis. Adm. Code. Notice requirements and fee requirements depend on the type of submittal. This particular FPOR submittal required by ch. NR 665, Wis. Adm. Code, is not explicitly listed in Appendix I and II of ch. NR 670, Wis. Admin. Code. Preliminarily, the department's staff estimates that the FPOR submittal may represent a Class 2 license modification as described in section D.1.f of Appendix I of ch. NR 670, Wis. Admin. Code, and be subject to a $4,000 review fee per Appendix II of ch. NR 670, Wis. Admin. Code.

    It is recommended that in the manner outlined in NR 670.042(4)(a), that (in advance of or together with the FPOR submittal) KHL submit information to support, and request the department to determine, the classification of the submittal. In this case, after KHL submits this request and the

department makes the determination per s. NR 670.042(4)(b), Wis. Adm. Code, the department will invoice KHL for the applicable review fee and KHL would undertake the applicable public notice actions.

15. Financial Assurance Cost Estimates: Failure to comply with s. NR 665.0142(1)(b) and NR 665.0144(1)(a), Wis. Adm. Code, which require that the closure and long-term care cost estimates be based on the costs to the owner or operator of hiring a third party to perform the work.

    Item 21 of the department's information request (dated December 4, 2018) asked for confirmation that the cost estimates for closure and long-term care are based on the costs to the owner or operator of hiring a third party to close the facility. TRC's March 4, 2019, response states that project management and administrative oversight costs associated with closure and long-term care activities were assumed to be addressed within the contingency amounts. Contingency costs should only be used for unanticipated cost components. Costs for the use of a third party to perform project management and administrative oversight shall be estimated and identified separately. These costs should address design, contract document preparation, procurement, work performance tracking and review, quality assurance, change order development, invoice review and processing, management of insurance and other contract requirements, and the like.

    Furthermore, the cost estimates provided by KHL do not include the facility maintenance costs of managing the hazardous wastes generated in the course of long-term care and corrective action and managed off-site, and associated state generator fees, as required by s. NR 665.0144(1); Wis. Adm. Code

    To comply with this requirement, KHL shall revise closure and long-term care cost estimates to include all required costs.

    The department recommends that KHL provide to the department within 90 days of this letter the revised cost estimates. These should be incorporated in to the updated closure and long-term care plans addressed in Items 9 and 10 above. At a minimum, the revised cost estimates should:

    - include all costs related to hiring a third party to do the work,
    - properly account for costs that are not appropriate to be included in contingency costs
    - include all costs of managing the hazardous wastes generated in the course of long-term care and corrective action and managed off-site.
    - Include an explanation of the basis for the cost estimates.

Areas of Concern

16. Tank System Requirements: The department has identified the following two storage and conveyance systems that may represent potential tank systems at KHL, and that may be subject to hazardous waste tank systems requirements in subchapters B, J, BB and CC of ch. NR 265, Wis. Adm. Code, and the licensing requirements in ch. NR 670, Wis. Admin. Code. Without additional information, the department is unable to confirm compliance with these requirements.

    Gas Condensate System: Item 3 of TRC's report dated April 30, 2019, describes the use of an oil/water separator and a single-walled 5,000-gallon underground tank to store hazardous waste (gas condensate) generated by KHL's landfill gas blower/flare operation, and ancillary

equipment in the form of associated piping and a pump-out system with a riser pipe ("Gas Condensate Tank System"). The report also describes this as a "new tank system" for the purposes of Subchapter J of chapter NR 665, Wis. Adm. Code. According to TRC, the wastes in the 5,000-gallon tank are periodically pumped out by a vacuum truck and hauled to a manhole controlled by KHL; from this manhole, the wastes are routed through KHL piping to the City of Racine's sewer system. KHL has not described how the oil component from the oil/water separator is managed.

Landfill Liquid Conveyance System: TRC's responses describe a conveyance system, generally consisting of piping, manholes and pump stations, that transmits liquid wastes from the HWU and HWU area to the local sewer system ("Landfill Liquid Conveyance System"). These liquid wastes include the following hazardous wastes:

- F039 hazardous waste leachate and gas condensate generated within the HWU
- hazardous waste condensate trucked from the Gas Condensate Tank System
- contaminated extracted groundwaters from the groundwater trench collection system (e.g. along the southern perimeter of the HWU).
- contaminated extracted groundwaters from the 141U area remediation system.
- Gas condensate hauled by truck to the conveyance system (to Lift Station LS4 near the northwest corner of the City of Racine Landfill, according to Figure 11 of the 2017 solid waste annual report dated June 2018).

Note that when other liquid wastes (such as leachate or gas condensate from other landfill units) are mixed with these F039 or "derived-from" hazardous wastes, the other liquid wastes become hazardous wastes under the "mixture rule".

One or both systems may be exempted from hazardous waste tank system requirements by the wastewater treatment unit (WWTU) exemption in s. NR 665.0001(3)(j), Wis. Adm. Code. To qualify for this exemption, the three requisites within the definition of "wastewater treatment unit" in s. NR 660.10(141), Wis. Adm. Code, shall be met. Also note that in the September 2, 1988 Federal Register 53 FR 34079, U.S. EPA establishes that a tank system shall be "part of an on-site wastewater treatment facility"; this creates a fourth requisite. Each of these four requirements is reviewed below, along with the department's preliminary conclusions regarding the two KHL tank systems.

a. s. NR 660.10(141)(a), "Part of a wastewater treatment facility that is subject to regulation under either 33 USC 1317(b) or 1342". It is the department's understanding that Landfill Liquid Conveyance System may meet this criterion because it discharges directly to the City of Racine sewer system. However, it is not clear if this system is "part of a wastewater treatment facility". The department requests that KHL provide supportive information for the position that the Landfill Liquid Conveyance System is "part of a wastewater treatment facility".

   The effluent from the oil-water separator in the Gas Condensate System does not discharge directly to the sewer in this way; rather, its effluent is reportedly loaded into a vacuum truck and hauled to the Landfill Liquid Conveyance System. Available reports identify two locations where the discharge from the truck occurs, after which the effluent mixes with other landfill liquid wastes prior to flowing and discharging to the City of Racine's sewer (presumably at the sewer system manhole within Oakes Road, referred to as the "Existing Sanitary Sewer Manhole" in TRC's July 26, 2018, report, item 7):

- Lift Station LS4, (according to Figure 11 of the 2017 solid waste annual report dated June 2018)
- Manhole MH-14 (according to TRC's March 4, 2019, report, item 4.a.)

In any case, the effluent then flows within a portion of the Landfill Liquid Conveyance System to the City of Racine sewer. The effluent becomes subject to hazardous waste regulation as a hazardous waste, at a new point of generation, while being loaded into a tanker truck for subsequent handling. In effect, 33 USC 1317(b) or 1342 may be regulating the discharge from the truck, not from the Gas Condensate System. The department requests that KHL provide supportive information for the position that the eligibility of the Gas Condensate System to be a wastewater treatment unit is not forfeited by being loaded, handled and hauled in a truck, prior to being discharged to the Landfill Liquid Conveyance System to the City of Racine sewer.

b. s. NR 660.10(141)(b), "Receives and treats or stores an influent wastewater that is a hazardous waste as defined in s. NR 661.03, or that generates and accumulates a wastewater treatment sludge that is a hazardous waste as defined in s. NR 661.03, or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in s. NR 661.03". It is the department's understanding that the Gas Condensate System meets this criterion because it includes both treats (in the oil/water separator) and stores (in the effluent tank) an influent wastewater. However, the department is unable to presently determine if storage or treatment is occurring in Landfill Liquid Conveyance System, as its function appears to be conveyance. The department requests that KHL provide supportive information for the position that treatment and/or storage occurs in the Landfill Liquid Conveyance System.
c. s. NR 660.10(141)(c), "Meets the definition of tank or tank system in this section". It is the department's current understanding that the Gas Condensate System meets this criterion because it contains a tank or tanks. However, the department is unable to presently determine if the Landfill Liquid Conveyance System is a tank system. The department recommends that KHL provide a detailed description of the components of the Landfill Liquid Conveyance System to determine if, or confirm that, the system meet the definition of "tank system" in s. NR 660.10(117), Wis. Adm. Code. Note that, in general, manholes may be "sumps" if used for storage (and not principally for conveyance), and that sumps may be tanks. Also note that, in general, EPA has indicated that devices to protect pumps (such as screens and sediment traps) do not perform treatment.
d. September 2, 1988 Federal Register 53 FR 34079, in which U.S. EPA establishes that a tank system shall be "part of an on-site wastewater treatment facility". The department does not have enough information to determine if the Gas Condensate System meets this criterion. The department requests that KHL provide information that demonstrates that the Gas Condensate System is "on-site".

To assist in determining compliance, the department recommends that KHL provide the department, within 90 days of the date of this letter, with the information requested above to confirm the applicability of the wastewater treatment unit exemption to the two tank systems.

17. Gas Condensate Volumes; 90-day Storage: Attachment 7 of TRC's response dated March 4, 2019 (entitled Table 5), suggests that gas condensate was not removed from the tank for the months of January and February of 2016. 2015 data was not requested, so it is not known if the 90-day generator storage limit of s. NR 662.034(1), Wis. Adm. Code, was met. Also, no information was

available to determine the frequencies of oil removal and effluent removal from the oil-water separator. To demonstrate compliance, the department recommends that, within 60 days of this letter, KHL provide the department with:

- Condensate removal volumes for October, November and December of 2015. Please provide the previous Table 5 updated to include this information.
- A description of how intends to ensure that the 90-day generator storage limit will not be exceeded for any hazardous waste within the Gas Condensate System, including for example the oil generated within the oil-water separator unit, the effluent generated within the oil-water separator unit, and the effluent stored in the underground tank.

18. Emergency Communications: Item 11.a of the department's information request dated December 4, 2018 asked for a description of equipment KHL relies on to provide its personnel with immediate access to an internal alarm or emergency communication device. This is required by s. NR 665.0034(1), Wis. Adm. Code, for areas where hazardous waste is being poured, mixed, spread or otherwise handled. TRC's March 4, 2019, response did not provide this information. The department recommends that within 60 days of this letter, KHL inform the department of how this requirement is met.

19. Hazardous Waste Facility Annual Reporting: s. NR 665.0075 establishes requirements for submittal of annual reports. Item 14(a) of TRC's March 4, 2019, response asserts that these requirements "do not apply to Kestrel Hawk as the facility ceased accepting hazardous waste for co-disposal with non-hazardous solid waste, within the HWU, in 1982." This is incorrect. Under s. NR 665.0001(1), Wis. Adm. Code, until the facility achieves approved closure, it is subject to these requirements.

    The Department recommends that beginning with the March 30, 2020 due date, and annually thereafter, that KHL submit the information required in ss. NR 665.0075(1) through (10), Wis. Adm. Code. Because the department has not developed the "department forms" referred to in this regulation for each item of this information, it is recommended that KHL provide the information in letter format. In cases when the information is provided separately, this annual report letter can make such reference (an example may be monitoring data that is submitted to the department's GEMS database).

20. Solid Waste Program Annual Reports: There appear to be inaccuracies or inconsistencies in Table 5 of KHL's 2017 annual report submitted to the department's solid waste program and dated June 12, 2018. The following are examples.

    a. Table 5 contains a column called MH15B, which for 2017 data totals 7,643,900 gallons. TRC's April 30, 2019 report states that this represents the total volume of liquids associated with the HWU, City of Racine Landfill, and 141U area. Other Table 5 totals show 745,115 gallons as the "volume of leachate collected from the HWU (Corridors 1- 6)", and 419,057 "141U-Area" gallons, which total 1,164,172 gallons. This suggests that 6,479,728 gallons (7,643,900 - 1,164,172 = 6,479,728) were generated from the old City of Racine Landfill, which does not seem correct.

    b. Table 5 indicates a leachate removal volume from the HWU of 745,115 gallons. Item 6 of TRC's April 30, 2019, report states that this number was mis-reported and should have been reported as 342,000 gallons.

c. Table 5 (footnote 2) describes the LMP8A figure as the "volume of leachate collected from the HWU (Corridors 1- 6)". Page 28 of the report's text states, "The volume of liquid at LMP8A, as well as a portion of the LS4 volume, represents the amount of leachate collected from the HWU, Corridors 1 through 6.".

d. Attachment 7 (Table 2) of TRC's March 4, 2019 report shows a total removal volume of 50,200 gallons of gas condensate from the 5,000-gallon tank at the landfill gas processing facility. According to Table 5 of the 2017 solid waste annual report, this volume appears to be reported as 41,700 gallons.

Please note that other information in the 2015, 2016 and 2018 solid waste annual reports regarding quantities of leachate and other liquids generated was not reviewed.

The department recommends that KHL review the data provided to the department in its solid waste annual reports. The department recommends that KHL, within 90 days of this letter, provide a report that identifies the corrections to any past solid waste annual reports for calendar years 2015 through 2018.

21. Transportation of Gas Condensate: TRC's March 4, 2019, report, item 4.a., indicates that condensate effluent from the blower/flare station is loaded into a vacuum truck and hauled to the Landfill Liquid Conveyance System. Available reports identify two locations where the discharge from the truck occurs, after which the effluent mixes with other landfill liquid wastes prior to flowing and discharging to the City of Racine's sewer:

    - Lift Station LS4 (according to Figure 11 of the 2017 solid waste annual report dated June 2018), located near the northwest corner of the former City of Racine Landfill.
    - Manhole MH-14 (according to TRC's March 4, 2019, report, item 4.a.), located along the southern border of the former City of Racine Landfill.

    In any case, s. NR 660.10(125), Wis. Adm. Code defines "transporter" to refer to off-site transportation. Section NR 660.10(85), Wis. Adm. Code defines "on-site". However, the department is unable to presently determine if the hazardous waste transportation is occurring. The department recommends that KHL evaluate whether the routes used by the vacuum truck are "on-site" in order to determine if KHL is arranging or providing for hazardous waste transportation. The department recommends that KHL, within 60 days of this letter, provide a summary of this analysis and its conclusions.

Wrap-up

The department recommends you take immediate action to address the alleged areas of noncompliance and areas of concern identified in this letter. Please note that the department has provided recommendations to help re-establish compliance with each of the identified areas of noncompliance and recommendations to help determine and/or confirm compliance regarding each of the identified areas of concern.

Please also note that your responses to the requirements and recommendations in this letter shall include the authorization and certification required by NR 670.011, Wisc. Adm. Code. If the response

relies on technical information or data, such as design drawings and specifications, or engineering studies, it is recommended that it such information be certified by a qualified professional engineer.

While we appreciate receiving your written responses by the dates specified, please understand that you are currently in noncompliance and will remain in noncompliance until all identified areas are addressed. Failure to respond in a timely manner may result in escalated enforcement actions. The alleged violations may also be enforced by the United States Environmental Protection Agency. As part of its hazardous waste regulatory program, the department may perform additional inspections at this facility to ensure compliance with chapters NR 660 to 679, Wisconsin Administrative Code. Please note that Chapters NR 660 to 679 of the Wisconsin Administrative Code are available on the department's website at http://dnr.wi.gov/topic/Waste/Laws.html

The department recognizes that the actions recommended in this letter may require substantial effort. We have attempted to allow for reasonable timeframes for this work and for responses. If KHL finds that the process would be improved by alternative timeframes for some responses, please provide a written request (via email is acceptable).

If I can help you in meeting these standards, or you have any questions, please contact me at douglas.coenen@wisconsin.gov or 608-264-9258. Thank you for your cooperation.

Sincerely,



Doug Coenen, P.E.
Waste Management Specialist
Waste and Materials Management Program

cc: Facility File – DNR SE Region
Gerald DeMers, DNR
David Buser, DNR
Curt Madsen, P.E., TRC

Attachment A
Information Requests and Responses

1. DNR information request dated July 2, 2018
2. TRC response report dated July 26, 2018
3. DNR information request dated August 20, 2018
4. TRC response report dated August 28, 2018
5. DNR information request dated December 4, 2018
6. TRC response report dated March 4, 2018
7. DNR clarification request regarding contingency plan dated April 15, 2018
8. KHL response dated April 16, 2018
9. DNR information requests dated April 6, 12 and 15, 2018
10. TRC response report dated April 30, 2018

Attachment B
Summary of Waste Shipment Information

Section B-1

The records provided in TRC's report dated March 4, 2019, Attachment 3, include an unorganized assortment of different types of documents. The department's review indicates hazardous wastes generated from the removal of oil-absorbent "socks" from the HWU were shipped offsite in the following five cases since September 13, 2015:

1. Based on a Certificate of Disposal from Clean Harbors dated Nov. 16, 2015, for "date received" of 10/27/15, for manifest 005053298SKS. The manifest was not included in the records provided.
    a. Date removed from service: 9/15/15
    b. Quantity: 3 drums
    c. Material: "High Blu PCB Liquids For Incineration"
    d. Disposal Date: 11/10/18 and 11/12/15
    e. Method of Disposal: Incineration
    f. Disposal Facility: Deer Park, TX Facility
2. Based on a Certificate of Disposal from Clean Harbors dated November 16, 2015, for "date received" of 10/17/15, for manifest 005053209SKS. The manifest was not included in the records provided.
    a. Date removed from service: 9/13/15
    b. Quantity: 1 drum
    c. Material: "PCB Solids For Incineration"
    d. Disposal Date: 11/09/15
    e. Method of Disposal: Incineration
    f. Disposal Facility: Deer Park, TX Facility
3. Based on Manifest 005096377SKS*; no certificate of disposal provided
    a. Generator Date: 3/23/16
    b. Quantity: 1 drum (150 lbs.)
    c. Material Description: "Non-DOT Regulated (Used Oil and Absorbents)"; no waste code
    d. Designated Facility: Spring Grove Resource Recovery, Cincinnati, OH
    e. Date Received: 4/6/16
    f. Management Method: H141
4. Based on a Certificate of Disposal from Clean Harbors dated January 25, 2017, for "date received" of 1/25/17, and based on manifest 005724045SKS*.
    a. Date removed from service, and date shipped: 9/13/15
    b. Quantity: 1 drum
        c. Material: "PCB Solids For Incineration"; "UN2315 Polychlorinated Biphenyls, Liquid"; no waste code
    d. Designated Facility: Spring Grove Resource Recovery, Cincinnati, OH
    e. Date Received: 1/25/17
    f. Disposal Date: 4/91/17
    g. Method of Disposal: Incineration
    h. Disposal Facility: Deer Park, TX Facility
    i. Records also included an LDR form, largely illegible but bearing this manifest number
5. Based on invoice 79321195-1900933823 from Safety-Kleen

a. Service date: 02/27/18
b. Manifest 012275313FLE* (only a blank continuation sheet provided)
c. Profile: 1794978
d. Quantity: 1 drum
e. Apparent waste type: DH2-PCB LQD DECHL/INA 500
f. TSDF: SG

Note: Manifests listed in Safety-Kleen's email dated 1/1/19 as "all manifests dating back though January 2019". Safety-Kleen's 2/11/19 email suggested all shipments were non-hazardous waste.

a. 005724045SKS (listed above in item 4)
b. 005777416SKS (noted as "aqueous parts washer solvent")
c. 005587368SKS (noted as "aqueous parts washer solvent")
d. 006056580SKS (noted as "aqueous parts washer solvent")
e. 006361950SKS (noted as "aqueous parts washer solvent")
f. 006522959SKS (noted as "aqueous parts washer solvent")
g. 006570485SKS (noted as "aqueous parts washer solvent")
h. 006542565SKS (noted as "aqueous parts washer solvent")
i. 006785893SKS (noted as "aqueous parts washer solvent")
j. 006818105SKS (noted as "aqueous parts washer solvent")

*manifest referred to in Safety-Kleen's email dated 2/28/19

Section B-2

A review of the department's manifest records shows that KHL initiated three shipments of hazardous waste since Jan. 1, 2015. All were shipped in the first 7 months of 2015. A waste description was not provided in the data set.

Date Shipped	Quant	Code	TSD	Date Received
Jan. 27, 2015	20 gal	D039	SK-Waukesha	Jan. 27, 2015
Apr. 15, 2015	20 gal	D039	SK-Waukesha	Apr. 15, 2015
Jul. 7, 2015	23 gal	D039	SK-Waukesha	Jul. 7, 2015

Appendix B: Cross-walk

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Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(1) NR 670.014(2)(a): A general description of the facility	X			Section 1.2 Section 1.3.2	
(2) Security- and inspection-related information:					
(a) NR 670.014(2)(d): A description of security procedures and equipment required by s. NR 664.0014	X			Section 4.1	
(b) NR 670.014(2)(e): A copy of the general inspection schedule required by s. NR 664.0015(2)					
(3) NR 670.014(2)(f): Justification of any request for a waiver of the preparedness and prevention requirements of subch. C of ch NR 664			X		Not applicable
(4) NR 670.014(2)(k): Floodplain information	X			Section 1.3.1	
(5) NR 670.014(2)(m): A copy of the closure plan and, where applicable, the long term care plan required by ss. NR 664.0112, 664.0118, and 664.0197					
(a) A copy of the long-term care plan is required (Closure plan is not needed)	X			Entire Document	
(b) Further closure-related information, not applicable			X		
(c) Activities that will be carried on after closure of each disposal unit the frequency of these activities, which include:					
(i) Description of the existing system that require long-term care (e.g. final cover, leachate collection system, run-on control systems, run-off control systems, monitoring systems, etc.) and describe associated routine and contingent LTC activities	X			Section 2.2-2.6	
(ii) A description of the activities to comply with other applicable requirements of NR 664, including for example:					
NR 664.0014 Security	X			Section 4.1	
NR 664.0015 General Inspection Requirements	X			Section 4.3	
NR 664.0016 Personnel Training	X			Section 4.4	
NR 664, Subchapter C, Preparedness and Prevention	X			Section 4.5	
NR 664, Subchapter D, Contingency Plan and Emergency Procedures	X			Section 4.5	
The operating record requirements of NR 664.007	X			Section 4.8	
Annual reporting requirements of NR 664.0075	X			Section 4.9	
(d) and at least all of the following:					
(i) NR 664.0118(2)(a): regarding monitoring: This should describe the groundwater monitoring and corrective action program and describe how it complies with the requirements of NR 664, Subchapter F			X	Section 3.5.1	Groundwater monitoring program is conducted as approved in previously WDNR approvals.
(ii) NR 664.0118(2)(b): This should include the planned maintenance activities and frequencies to ensure integrity of the cap and final cover or other containment systems (such as leachate collection systems and cut-off wall-related liquid collection systems) and the function of the monitoring equipment	X			Section 2 Section 3	
(iii) NR 664.0118(2)(c): facility contact information	X			Section 1.2	
(iv) NR 664.0118(2)(d): alternate requirements for monitoring and LTC financial assurance (probably not applicable)			X		
(e) NR 664.0197: Contingent long-term care for and cost estimates for tank systems			X	Section 4.7 Section 8.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(6) NR 670.014(2)(m): Include, where applicable, as part of the plans, specific requirements in ss. NR 664.0178, 664.0197, 664.0228, 664.0258, 664.0310, 664.0351, 664.0601 and 664.0603". (Note that most of these sections are not applicable because they relate to units other than landfills). NR 664.0310(2) applies to landfill long-term care below (for ease of reference, each of these requirements is labelled below with bold font as 6 and 6.a through 6.f). "After final closure, the owner or operator shall comply with all long-term care requirements contained in ss. NR 664.0117 to 664.0120, including maintenance and monitoring throughout the long-term care period (specified in the operating license under s. NR 664.0117). The owner or operator shall do all of the following:					
(a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events.	X			Section 3.1.2	
(b) Continue to operate the leachate collection and removal system until leachate is no longer detected.	X			Section 2.3 Section 3.2	
(c) Maintain and monitor the leak detection system in accordance with ss. NR 664.0301 (3) (c) 4. and (d) and 664.0303 (3), and comply with all other applicable leak detection system requirements of this chapter.			X		The Hazardous Waste Units of Kestrel Hawk Landfill, Corridors 1 through 6, were all constructed prior to 1995. Therefore leak detection system were not required. Only non-hazardous waste units not covered under NR 664 were developed following 1995.
(d) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of subch. F.			X	Section 3.5.1	Groundwater monitoring program is conducted as approved in previously WDNR approvals.
(e) Prevent run-on and run-off from eroding or otherwise damaging the final cover.	X			Section 2.2 Section 2.4 Section 3.1 Section 3.4	
(f) Protect and maintain surveyed benchmarks used in complying with s. NR 664.0309."	X			Section 3.7	
(7) NR 670.014(2)(n): "…documentation that notices required under s. NR 664.0119 have been filed."					
(a) NR 664.0119(1): Submit a record of the type, location and quantity of hazardous wastes disposed of within each cell, to be submitted to the local land use authority.	X			Section 4.10	
(b) NR 664.0119(2)(a): File a notation on the property's deed regarding hazardous waste management, restriction of use, and survey plan information.	X			Section 4.10	
(c) NR 664.0119(2)(b): Certification of the deed notation, to be provided to the department.	X			Section 4.10	
(8) NR 670.014(2)(p): relates to closure costs and is not applicable.			X		
(9) NR 670.014(2)(p): "…the most recent long-term care cost estimate for the facility prepared according to s. NR 664.0144 plus a copy of the documentation required to demonstrate financial assurance under s. NR 664.0145."	X			Section 5.0 Section 6.0	
(10) NR 670.014(2)(s): "A topographic map showing a distance of 1,000 feet around the facility…". This section goes on to establish the specifications and minimum contents of the map.	X			Section 1.5.1	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(11) NR 670.014(3): This establishes the required information regarding protection of groundwater. NR 670.014(3)(b) through (h) identifies the detailed groundwater-related information required to be provided for the regulated unit(s), such as:					
(a) NR 670.014(3)(a): Not applicable.			X		
(b) NR 670.014(3)(b): specifies hydrogeologic information	X			Section 3.5.1.1	
(c) NR 670.014(3)(c): specifies groundwater-related information to be presented in maps	X			Figure 4, Appendix J.2	
(d) NR 670.014(3)(d): specifies groundwater contamination-related information	X			Section 3.5.1.3.2, Appendix F.5, F.6	
(e) NR 670.014(3)(e): requires “Detailed plans and an engineering report describing the proposed	X			Section 3.5.1.3	
(f) NR 670.014(3)(f): requires information regarding the detection monitoring program (if applicable).			X		Hazardous constituents have been detected, the HWU is in compliance monitoring and corrective action monitoring.
(g) NR 670.014(3)(g): requires information regarding the compliance monitoring program (if applicable).	X			Section 3.5.1.3.1	
(h) NR 670.014(3)(h): requires information regarding the corrective action program (if applicable).	X			Section 1.3.3, Section 3.5.1.3.2	
(12) NR 670.014(4): This establishes the required information regarding solid waste management units.					
(a) NR 670.014(4)(a)1. through (a)5: includes information regarding SWMUs.	X			Section 7.1	
(b) NR 670.014(4)(a)6: requires past and future corrective action information (if applicable):	X			Section 7.1	
(c) NR 670.014(4)(b): requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units.	X			Section 7.1	
(d) NR 670.014(4)(c): refers to completion of a RCRA Facility Assessment. The facility should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, the corrective actions taken to date, and future corrective actions planned.	X			Section 7.2	
(13) The final part of NR 664.028 goes on further to allow the department to determine that additional information related to NR 670.014 (General Requirements), 670.016 (Tanks), 670.017 (Surface Impoundments), 670.018 (Waste Piles) or 670.021 (Landfills) is necessary. The department has currently identified the following additional informational requirements that should be included in a long-term care application:					
(a) From NR 670.014, General Requirements					
(i) NR 670.014(2)(g): a copy of the contingency plan	X			Section 4.5	
(ii) NR 670.014(h)2: runoff controls	X			Section 3.4	
(iii) NR 670.014(h)3: how contamination of water supplies is prevented	X			Sections 3.6, 3.9	
(iv) NR 670.014(h)4: how equipment failure and power outages are mitigated	X			Section 4.2	
(v) NR 670.014 (h)5: how personnel are protected	X			Section 4.6.1	
(vi) NR 670.014(h)6: how releases to atmosphere are prevented	X			Section 4.6.2	
(vii) Per NR 670.014(2)(L): an outline of both the introductory and continuing training programs.	X			Section 4.4	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment A
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The order the requirements from Attachment A are listed first with Attachment B references to the right.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(b) From NR 670.021, Landfills. Most of these additional informational requirements generally relate to active landfill operations and closure, which do not need to be addressed. However, NR 670.021(5) requires "…a description of how each landfill will be maintained and monitored after closure according to s. NR 664.0310(2)." This is covered in item 6 above.			X		Covered in item 6 above.
(14) Part A Application: NR 670.001(2) states, "A license application consists of two parts, part A (see s. NR 670.013) and a feasibility and plan of operation report (see s. NR 670.014 and applicable sections in ss. NR 670.015 to 670.029". [Note that a feasibility and plan of operation report (FPOR) is generally not needed for closed facilities; rather, the LTC license application; rather, for the purposes of s. NR 670.014, Wis. Adm. Code, the long-term care license application will constitute the facility's FPOR]. The following Part A application information specified in NR 670.013 should be included in the LTC license application:					
(a) NR 670.013(1): The activities conducted by the applicant which require it to obtain a license.	X			Section 1.3.2	
(b) NR 670.013(2): Name, mailing address and location, including latitude and longitude of the facility for which the application is submitted.	X			Section 1.2	
(c) NR 670.013(4): The operator's name, address, telephone number, ownership status and status as federal, state, private, public, or other entity.	X			Section 1.2	
(d) NR 670.013(5): The name, address, and phone number of the owner of the facility.	X			Section 1.2	
(e) NR 670.013(6): Whether the facility is located on Indian lands.	X			Section 1.2	
(f) NR 670.013(8): For existing facilities, all of the following:					
(i) A scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas.	X			Section 1.5.1	
(ii) Photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas.	X			Section 1.5.2	
(g) NR 670.013(9): A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items.			X		No proposed treating, storage, and disposal of waste. Facility is a closed landfill that is not accepting waste materials onsite.
(h) NR 670.013(10): A specification of the hazardous wastes listed or designated under ch. NR 661 to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed annually, and a general description of the processes to be used for the wastes.	X			Section 1.3.2	
(i) NR 670.013(11): A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.	X			Section 1.4	
(j) NR 670.013(12): A topographic map (or other map if a topographic map is unavailable) extending one mile beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or otherwise known to the applicant within ¼ mile of the facility property boundary.	X			Section 1.5.3	
(k) NR 670.013(13): A brief description of the nature of the business.	X			Section 1.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(1) General Facility Description					
(a) A brief description of the property, location, and current status of the facility (A.1). The property description information should and briefly describe the history of the development of the facility's various landfill areas. A property map(s) depicting these areas and other key appurtenant improvements (e.g. the landfill gas control units, key leachate management components, corrective action components, office, and maintenance buildings, fencing and access points, etc.) should be included. The location information should include the address, the name of the local municipality in which it is located (and any affected municipalities), and the latitude/longitude (A.14.b). This should also address Indian lands (A.14.e) and floodplain information (A.4).	X			Section 1.2 Section 1.3.1	
(b) Facility owner, operator, and contact information. (A.5.d.iii; A.14.c; A.14.d)	X			Section 1.2	
(c) A brief history of the hazardous waste management activities at the facility that may be relevant to current hazardous waste requirements, such as the types, approximate quantities, locations, and timeframe of hazardous wastes disposed (A.1, A.14.a, A.14.h), the disposal methods used (e.g. the use of trenches dug into previously-landfilled solid wastes) and the different parts of the HWU that were used for hazardous waste disposal.	X			Section 1.3.2	
(d) A summary of capping units and segregation layers that were installed. (A.5.b)	X			Appendix D	
(e) A brief description of any other environmental licenses, permits, or authorizations that relate in any way to the HWU (A.14.i)	X			Section 1.4	
(f) Maps and drawings, which include maps/drawings that are needed to support the general description of the facility and that are:					
(i) required in NR 670.014(2)(s). (A.10) Note that if certain detailed NR 670.014(2)(s) mapping requirements are pertinent or not of value, the applicant should identify them and state the reason they are not needed.	X			Section 1.5.1	
(ii) required as part of the groundwater monitoring plan (A.11.b)				Figures 4, 5	
(iii) required for the Part A application. (A.14.f; A.14.j) Note that if certain NR 670.013 detailed mapping requirements are not of value, the applicant should identify them and state the reason they are not needed			X	Section 1.5.2 Section 1.5.3	Determined not to be of value.
(g) Photos. (A.14.f) Please describe the purpose of the photo, and indicate the date, location from which the photo was taken, and the direction faced	X			Section 1.5.2	
(h) If corrective action requirements in NR 664.0100 and NR 664.0101 are occurring the facility description briefly describe the program.	X			Section 1.3.3	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(2) Long-Term Care Summary					
(a) Identification of the components and systems that require or facilitate long-term care (e.g. final cover, leachate and gas collection, conveyance and control systems, run-on control systems, run-off control systems, monitoring systems and components, etc.) (A.1; A.5.c.i; A.5.d.i; A.5.d.ii; A.6.c)	X			Section 2.0	
(b) A description of long-term leachate management and extraction goals/requirements	X			Section 2.3.1.1	
(c) A general summary of the site maintenance and repair program activities for these systems and components. (A.5.c.i; A.5.d.ii; A.6; A.6.a through e)	X			Section 2.0	
(d) A general description of LTC-related environmental monitoring programs (A.5.d.i; A.6.d)	X			Section 2.5	
(e) The minimum and remaining estimated duration of LTC and corrective action activities	X			Section 2.1	
(3) Long-Term Care Details					
(a) Final Cover (A.5.c.i; A.5.d.ii; A.6.a; A.6.e) This should include a detailed description of the final cover/cap system, and drawings/schematics that depict its key components and location(s). Different caps placed in different areas should be addressed. Separation barriers and cover systems that were left in place to separate and or/create barriers between landfill sections this should be described. This should also address any perimeter berms that provide structural support.	X			Section 3.1.1	
A detailed description of the routine and contingent operational and maintenance activities of the final cover systems should be provided.	X			Section 3.1.2	
(b) Leachate Management (A.5.c.i; A.5.d.ii; A.6.b) This should include a detailed description of leachate containment systems for the facility (such a liners, documented base, cutoff walls, etc. regarding the old east hill, west hill, and saddle area) and the leachate/gas collection systems used for these areas. It should also provide This should include a detailed description of the standards to be met for leachate extraction activities, the rationale for the standards, and associated reporting activities	X			Section 3.2 Section 3.3	
(c) Run-on and Run-off Controls (A.5.c.i; A.5.d.ii; A.6.e; A.13a.ii) This should include a detailed description of the run-on and run-off control system(s), drawings/schematics that depict its key components, and all routine and contingent operational and maintenance activities	X			Section 3.4	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(d) Groundwater Monitoring Program (A.5.d.i; A.6.d; A.11; A.13.a.iii) This should include a detailed description the groundwater monitoring program, drawings/schematics that depict its key components, and all routine and contingent activities.					
The facility has indicated it is currently implementing a detection monitoring program per ss. NR 664.0091(1)(d) and NR 664.0098, Wis. Adm. Code for the HWU, so this should be articulated along with the basis for this status. The plan should then identify and describe how each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099 are met, including but not limited to requirements for well network/layout, parameters, frequencies, points of compliance, data evaluation, concentration limits, reporting, etc.); more information is presented in subsection C below. The plan should briefly address the triggers for moving into compliance monitoring.	X			Section 3.5.1.3.1	Hazardous constituents have been detected at concentrations exceeding concentration limits (i.e., vinyl chloride in the 141U Area); therefore, the HWU is in corrective action monitoring. Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(i) We recommend that the groundwater monitoring plan address the applicable requirements of NR 507. The plan may be written and organized in a manner typical of other monitoring plans (such as NR 507 plans) but must and address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099.	X			Section 3.5.1.3.1	The groundwater monitoring plan address requirements of NR 507; however, provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(ii) Note that NR 670.014(3) requires information regarding protection of groundwater and the monitoring plan, including for example site hydrogeologic information, a map, and specific details regarding the monitoring program. Please see section 11 of Attachment A (A.11) for more information.	X			See Section 11 of Attachment A Cross Walk	
(iii) The plan should address each of the applicable monitoring program requirements in NR 664.0091 through NR 664.0099. We recommend that the plan include a "crosswalk" that identifies where each of these requirements is addressed. The following is list of examples of these requirements for facilities in detection monitoring	X			Section 3.5.1.3.1	Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
NR 664.0091(1)(a) Compliance monitoring	X			Table 5	
NR 664.0091(1)(b) Corrective action - Groundwater Protection Standard	X			Table 5	
NR 664.0091(1)(c) Corrective action - Concentration Limits	X			Table 5	
NR 664.0091(1)(d) Detection monitoring	X			Table 5	
NR 664.0091(1)(e) Certified lab use	X			Table 5	
NR 664.0091(2) Department shall specify program elements in license	X			Table 5	
NR 664.0092 Department shall specify the groundwater protection standard	X			Table 5	
NR 664.0093 Hazardous constituents	X			Table 5	
NR 664.0094 Concentration limits	X			Table 5	
NR 664.0095 Point of standards application	X			Table 5	
NR 664.0096 Compliance period	X			Table 5	
NR 664.0097(1) Number, location, and depth of wells	X			Table 5	See section 3.5.1.3, Appendix H, and the August 30, 2017 Conditional Plan Modification Approval (Appendix A.5) for monitoring program details.
NR 664.0097(2) Multiple units	X			Table 5	
NR 664.0097(3) Casing	X			Table 5	
NR 664.0097(4) Sampling and analysis procedures	X			Table 5	
NR 664.0097(5) Sampling and analysis methods	X			Table 5	
NR 664.0097(6) GW elevation	X			Table 5	
NR 664.0097(7) Establishment of background	X			Table 5	
NR 664.0097(8) Data evaluation and methods	X			Table 5	
NR 664.0097(9) Data evaluation and methods	X			Table 5	
NR 664.0097(10) Recordkeeping and reporting	X			Table 5	
NR 664.0098 Detection monitoring program	X			Table 5	
NR 664.0099 Compliance monitoring program	X			Table 5	
NR 664.0100 Corrective action program	X			Table 5	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
The plan should clearly identify and justify any alternative requirement proposed pursuant to s.NR 664.0090(6), Wis, Adm. Code.					Groundwater monitoring program is conducted as approved in previous WDNR approvals.
(iv) Certain parts of NR 664.0091 through NR 664.0099 refer to requirements to be established in the license and/or by the department. The groundwater monitoring program plan presented by the facility should identify and propose these requirements for the department's consideration in reviewing and approving the plan as part of the re-issued LTC license.	X			Section 3.5.1.3, Table 5	Provisions (a) and (b) of NR 664.0090(6) apply to the KHL groundwater monitoring program. Therefore, we request that the department replace the requirements of NR 664.0091 to 664.0100 with the requirements of the current groundwater monitoring program.
(e) Benchmarks: Please describe the locations of surveyed benchmarks and how they are protected and maintained. (A.6.f)	X			Section 3.7	
(f) Corrective Action: Please describe in detail the corrective actions taken to date, and future corrective actions planned. Include descriptions of equipment, operations, and monitoring related to the corrective action program	X			Section 3.8	
(g) Please address any other facility components and systems identified in section 2 above that require or facilitate long-term care.	X			Section 3	
(4) Other Applicable NR 664 Requirements					
(a) Security procedures and equipment (A.2.a; A.5.c.ii)	X			Section 4.1	
(b) Equipment failures (A.13.a.iv)	X			Section 4.2	
(c) Inspection program (A.2.b; A.5.c.ii; A.6): This should include documentation forms and protocols for maintaining the operating record.				Section 3 Section 4.3	
(i) The inspection program should include all the components fitting within NR 664.0015(2)9(a), which includes "monitoring equipment, safety and emergency equipment, security devices and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards". This would also include, for example, monitoring wells, fencing/gates, run-off controls, etc.	X				
(ii) The inspection program should identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection, per NR 664.0015(2)(c).	X				
(iii) The inspection program should describe the frequencies of inspections, per NR 664.0015(2)(d).	X				
(iv) In addition to meeting NR 664.0015(4), the inspection forms should match with the LTC plan's inspection program description. clearly identify the item(s) that are inspected.	X				
(v) The inspection forms should provide for documentation of remedies/repairs per NR 664.0015(3).	X				
(d) Personnel training program (A.5.c.ii; A.13.a.vii): This should describe the training program and associated documentation/records. At and minimum, the program should describe training that is necessary or appropriate for proper contingency plan implementation, and necessary for proper inspections and repairs to occur, and awareness training such that key facility components (e.g. the cap and monitoring equipment) are not inadvertently damaged by personnel doing work at the facility. The program should describe who (which positions or roles) receives the training and the training frequency.	X			Section 4.4	
(e) The Contingency Plan (A.5.c.ii; A.13.a.i) which should also address all applicable preparedness and prevention requirements in subch. C of ch. NR 664, Wis. Adm. Code.	X			Section 4.5	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(f) How personnel are protected (A.13.a.v)	X			Section 4.6.1	
(g) How releases to the atmosphere are prevented (A.13.a.vi)				Section 4.6.2	
(h) The contingent long-term care plan (and cost estimates) for tank systems per NR 664.0197. (A.5.e) Note that this may not apply because of the WWTU exclusion, which exempts certain units from NR 664 and NR 670 requirements; see NR 664.0001(7)(f); if this exclusion applies the facility should assert this, and identify the tank system components to which it applies.			X	Section 4.7	
(i) The operating record requirements of NR 664.0073. This should describe operating record and recordkeeping requirements, such as the following: (i) NR 664.0073(2)(d), contingency plan incident records (ii) NR 664.0073(2)(e), inspection records (iii) NR 664.0073(2)(h), LTC cost estimates (iv) NR 664.0016(4), training records	X			Section 4.8	
(j) The annual reporting requirements per s. NR 664.0075, Wis. Adm Code.	X			Section 4.9	
(k) Documentation that demonstrates compliance with the requirements for long-term care notices per s. NR 664.0119(1) , Wis. Adm. Code (A.7.a) and the deed notice/certification per s. NR 664.0119(1), Wis. Adm. Code (A.7.b and c)	X			Section 4.10	
(5) Long-Term Care Cost Estimate (A.9)					
The long-term care cost estimate should be certified by a qualified professional engineer and/or qualified professional geologist. The cost estimate should be summarized in tabular form showing tasks and subtasks in rows, and units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks, and provide sufficient detail and support to ensure that they:	X			Section 5.0	
(a) estimate LTC and corrective action costs for the duration of the long-term care period;					
(b) are based on and present costs for each of the discreet tasks and subtasks described in the work descriptions contained in the LTC Plan. An example of a task may be groundwater monitoring, with example subtasks for sampling, lab analyses, data review, reporting, etc.;					
(c) for each discrete task and sub-task, include units, quantities, unit costs, and extended totals, along with a grand total of all tasks and subtasks;					
(d) for each quantity and unit cost, provide the source of or basis for the numbers;					
(e) are based on exclusive use of a third parties to perform the work, and include costs to procure, administer and manage the third-party work;					
(f) include a minimum 10% contingency for unforeseen activities;					
(g) clearly show the basis year of the cost estimate (costs “as of” year, e.g. “all costs are in 2021 dollars”); and					
(h) cover all costs until the end of the minimum 40-year long-term care financial assurance period.					
The department recommends that the LTC Plan discuss a minimum “rolling 30-year window” (i.e. to begin during Year 10 of the LTC period) for its LTC cost estimate (and associated financial assurance) that annually maintains financial assurance for the following 30 years, until the facility demonstrates (and the department approves) that a shorter time period is justified.					
(6) Long-Term Care Financial Assurance (A.9) This should address documentation to demonstrate the establishment of LTC and corrective action financial assurance.	X			Section 6.0	

Feasibility and Plan of Operation Report Application Crosswalk - Attachment B
Kestrel Hawk Landfill (License #0572)
Racine, Racine County, Wisconsin

As requested in Attachment C of the November 29, 2022 Guidance Document, the following "crosswalk" or checklist has been provided to the Reviewer to denote locations within the Application the required components are found. The Attachment B requirements below include the cross-referenced Attachment A requirements.

APPLICATION REQUIREMENT	COMPLETE Y	N	NA	LOCATION	COMMENTS
(7) Solid Waste Management Units and Corrective Action (A.12)					
This should identify and describe all SWMUs (A.12.a - c). Note that NR 670.014(4)(a)1. through (a)5. specifies minimum information to be provided for each SWMU (A.12.a). Also note that that NR 670.014(4)(b) requires all available information pertaining to any release of hazardous wastes or hazardous constituents from the unit or units. Note that the facility may refer to previous reports rather than repeating such information, to the extent the previous reports may provide some of this information. In particular, the facility should consider the waste disposal areas outside of the HWU, as well as any other SWMUs at the facility.	X			Section 7.1	
This section should provide a summary of monitoring-related information that was developed previously and led to the need to enter corrective action, and should describe in detail the corrective actions taken to date, and future corrective actions planned.	X			Section 7.2	
(8) Other Hazardous Waste Requirements in NR 600-679					
To memorialize other hazardous waste compliance details, the LTC Plan should include information assembled by KHL as part of the hazardous waste compliance assessment that concluded with the department's June 4, 2021 Conditional Close-Out letter, such as: • Generator waste determinations • Documentation regarding gas processing residuals, including condensate • WWTU exemption support	X			Section 8.0	

Appendix C: WDNR and EPA Forms

- C.1 – WDNR Form 4400-117 “Solid Waste Facility Closure and Long-Term Care License Application”
- C.2 – EPA Form 8700-12 “Site Identification Form”
- C.3 – EPA Part A Form

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Appendix C.1
WDNR Form 4400-117 “Solid Waste Facility Closure and Long-Term Care License Application”

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State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Solid Waste Facility Closure and Long Term Care License Application

Form 4400-117 (R 1/15)

Notice: Under s. NR 520.04, Wis. Adm. Code, owners or operators of landfills are required to have a long term care license during the closure and long term care period. Failure to comply with that requirement may result in forfeitures of $10-$5000 for each day of violation and injunctive relief. Personally identifiable information provided on this form will be used for program administration and will also be provided to other state and federal agencies as required by law. It will also be available to requesters as required under Wisconsin's open records law [ss. 19.31 - 19.39, Wis. Stats.].

Facility Name	License Number
Kestrel Hawk Landfill	0572

Authorized Representative Name	Title
Matt Healy	Vice President
Address	**Telephone Number (include area code)**
8525 183rd Street, Suite K	(708) 297-3990

City	State	ZIP Code	DNR FID No.
Tinley Park	IL	60487	252076990

Licensee Name	Property Owner Name
Republic Services of Wisconsin, Limited Partnership	Republic Services of Wisconsin, Limited Partnership

A license fee of $6,600.00 is required pursuant to s. NR 520.04(3), Wis. Adm. Code. Make check payable to: Wisconsin Department of Natural Resources. Send application and payment to:

Michael Schmit – WA/5
Wisconsin Department of Natural Resources
Box 7921
Madison WI 53707

Site Location Legal Description

N2	of	____	¼ of Section	23	, Town	03	N, Range	22	◉E ○W ,	Racine County
____	of	____	¼ of Section	____	, Town	____	N, Range	____	○E ○W ,	____ County
____	of	____	¼ of Section	____	, Town	____	N, Range	____	○E ○W ,	____ County
____	of	____	¼ of Section	____	, Town	____	N, Range	____	○E ○W ,	____ County

Location Address (Road - Highway)

1969 Oakes Road

Township	Size In Acres
Racine	125.6

I certify that the information provided on this application is true and accurate to the best of my knowledge and belief.

Printed Name and Title of Authorized Representative
Matthew Healy

Signature and Title of Authorized Representative — VICE PRESIDENT

Date Signed: 3-17-2025

LEAVE BLANK - WISCONSIN DEPARTMENT OF NATURAL RESOURCES STAFF USE ONLY

Amount of Fee Received	Date Fee Received	Check Number

Date Application Received	Date License Issued	Staff Approval	Date Approved

LE03-AWIN MANAGEMENT INC
REPUBLIC SERVICES

No 20081366
Check Date: 03/19/2025

WISCONSIN DEPT OF NATURAL RESOURCES PO BOX 78816 ACCOUNTS RECEIVABLE
MILWAUKEE, WI 53278-0816

Vendor Number: 10020082

INVOICE	DATE	DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
0572-031825	03/14/2025	URG RTD 3063 - ATTN: STEVE MACK	$6,600.00	$0.00	$6,600.00
Detach at perforation Before Depositing Check		**TOTALS:**	**$6,600.00**	**$0.00**	**$6,600.00**

THIS IS A WATERMARKED PAPER - DO NOT ACCEPT WITHOUT NOTING WATERMARK - HOLD TO LIGHT TO VERIFY WATERMARK

REPUBLIC SERVICES
LE03-AWIN MANAGEMENT INC
18500 NORTH ALLIED WAY
PHOENIX ARIZONA 85054

Bank of America
52-153/112 ME

Check Date
03/19/2025

Number
20081366

PAY SIX THOUSAND SIX HUNDRED AND 00/100 DOLLARS*****

Amount
$***6,600.00

Void after 180 Days

PAY TO THE ORDER OF
WISCONSIN DEPT OF NATURAL RESOURCES
PO BOX 78816
ACCOUNTS RECEIVABLE
MILWAUKEE, WI 53278-0816

Authorized Signature

Security Features Included. Details on back.

⑈00 20081366⑈ ⑆011201539⑆ 000080231000⑈

Appendix C.2
EPA Form 8700-12 “Site Identification Form”

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United States Environmental Protection Agency
RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (Select only one.)

☐	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
☐	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
	☐ Site was a TSD facility, a reverse distributor, and/or generator of ≥ 1,000 kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in **one or more months of the reporting year** (or State equivalent LQG regulations)
☐	Notifying that regulated activity is no longer occurring at this Site
☐	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
☑	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

W	I	D	0	7	6	1	7	1	0	0	8

3. Site Name

Kestrel Hawk Landfill

4. Site Location Address

Street Address **1969 Oakes Road**		
City, Town, or Village **Racine**		County **Racine**
State **WI**	Country **USA**	Zip Code **53406**
Latitude **42.708843**	Longitude **-87.864133**	☐ Use Lat/Long as Primary Address

5. Site Mailing Address ☑ Same as Location Street Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

6. Site Land Type

☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	**562212**	C.	**562219**
B.	**562211**	D.	

8. Site Contact Information

☐ Same as Location Address

First Name **Khalid**	MI	Last Name **Umer**
Title **Environmental Manager**		
Street Address **26W580 Schick Road**		
City, Town, or Village **Hanover Park**		
State **IL**	Country **USA**	Zip Code **60133**
Email **kumer@republicservices.com**		
Phone **630-894-1554**	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

☐ Same as Location Address

Full Name **Republic Services of Wisconsin LP**	Date Became Owner (mm/dd/yyyy)
Owner Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address **18500 North Allied Way**	
City, Town, or Village **Phoenix**	
State **AZ** / Country **USA** / Zip Code **85054**	
Email **kumer@republicservices.com**	
Phone **630-894-1554** / Ext / Fax	
Comments	

B. Name of Site's Legal Operator

☐ Same as Location Address

Full Name **Republic Services of Wisconsin LP**	Date Became Operator (mm/dd/yyyy)
Operator Type ☑ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other	
Street Address **18500 North Allied Way**	
City, Town, or Village **Phoenix**	
State **AZ** / Country **USA** / Zip Code **85054**	
Email **kumer@republicservices.com**	
Phone **630-894-1554** / Ext / Fax	
Comments	

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

☑ Y ☐ N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c		
	☑	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
	☐	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
	☐	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
☐ Y ☑ N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. *Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.*		
☐ Y ☑ N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.		
☐ Y ☑ N	4. Receives Hazardous Waste from Off-site		
☐ Y ☑ N	5 Recycler of Hazardous Waste		
	☐	a. Recycler who stores prior to recycling	
	☐	b. Recycler who does not store prior to recycling	
☐ Y ☑ N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.		
	☐	a. Small Quantity On-site Burner Exemption	
	☐	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

☐ Y ☑ N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Underground Injection Control
☐ Y ☑ N	3. United States Importer of Hazardous Waste
☐ Y ☑ N	4. Recognized Trader—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter
☐ Y ☑ N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
☐	a. Importer
☐	b. Exporter

B. Universal Waste Activities

☐ Y ☑ N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
☐	a. Batteries
☐	b. Pesticides
☐	c. Mercury containing equipment
☐	d. Lamps
☐	e. Aerosol Cans
☐	f. Other (specify) _____
☐	g. Other (specify) _____
☐ Y ☑ N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

☐ Y ☑ N	1. Used Oil Transporter—If "Yes", mark all that apply.
☐	a. Transporter
☐	b. Transfer Facility (at your site)
☐ Y ☑ N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
☐	a. Processor
☐	b. Re-refiner
☐ Y ☑ N	3. Off-Specification Used Oil Burner
☐ Y ☑ N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
☐	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐	b. Marketer Who First Claims the Used Oil Meets the Specifications

D. Pharmaceutical Activities

☐ Y ☑ N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if "Yes", mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
☐	a. Healthcare Facility
☐	b. Reverse Distributor
☐ Y ☑ N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

☐ Y ☑ N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
☐	1. College or University
☐	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
☐	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
☐ Y ☑ N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

☐ Y ☑ N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.

14. LQG Consolidation of VSQG Hazardous Waste

☐ Y ☑ N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

☐ Y ☑ N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
	A. ☐ Central Accumulation Area (CAA) or ☐ Entire Facility
	B. Expected closure date: _____ mm/dd/yyyy
	C. Requesting new closure date: _____ mm/dd/yyyy
	D. Date closed : _____ mm/dd/yyyy ☐ 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) ☐ 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

16. Notification of Hazardous Secondary Material (HSM) Activity

☐ Y ☑ N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.

17. Electronic Manifest Broker

☐ Y ☑ N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?

18. Comments (include item number for each comment)

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy) 07-09-2025
Printed Name (First, Middle Initial Last) **Matthew Healy**	Title **Vice President**
Email **MHealy@republicservices.com**	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

Appendix C.3
EPA Part A Form

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EPA ID Number | W | I | D | 0 | 7 | 6 | 1 | 7 | 1 | 0 | 0 | 8 |

OMB# 2050-0024; Expires 04/30/2024

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**Khalid**	MI		Last Name	**Umer**
Title	**Environmental Manager**				
Email	**kumer@republicservices.com**				
Phone	**630-894-1554**	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	**26W580 Schick Road**		
City, Town, or Village	**Hanover Park**		
State	**IL**	Country **USA**	Zip Code **60133**

3. Facility Existence Date (mm/dd/yyyy)

5/16/1975

4. Other Environmental Permits

A. Permit Type	B. Permit Number	C. Description
E	2 5 2 0 7 6 9 9 A - P 3 0	Air Pollution Control Operation Permit
E	W I - S 0 6 7 8 5 7 - 5	WDPES
R	W I D 7 6 1 7 1 0 0 8	RCRA

5. Nature of Business

Kestrel Hawk Landfill is a solid waste disposal facility in Racine, Racine County, Wisconsin and is owned and operated by Republic Services of Wisconsin, Limited Partnership. The landfill accepted hazardous waste from the early to mid-1970a until 1982. Non-hazardoua waste disposal continued at the landfill and its expansions until 2023 when the landfill ceased accepting waste. Final cover was placed over the landfill throughout ite operations and was completed in 2024. Kestrel Hawk Landfill is proposing to enter into its long-term care period.

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity (1) Amount	B. Process Design Capacity (2) Unit of Measure	C. Process Total Number of Units	D. Unit Name
X	1	D	8	0	38	acres	1	Corridors 1-6

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes (1) Process Codes								D. Processes (2) Process Description (if code is not entered in 7.D1))
X	1	F	0	3	9	8,544.09	E									Off-site treatment at WWT

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

Refer to Section 1.5 of the Kestrel Hawk Landfill Feasilibity and Plan of Operation Report for discussions relating to requirements 8, 9, and 10.

Appendix D: Closure Report – Corridors 1-6 Closure Status

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Closure Report

Corridors 1-6 Closure Status
Kestrel Hawk Landfill
Racine, Wisconsin

June 2020
Revised August 2021
Revised April 2025

Prepared For:

Kestrel Hawk Landfill
1969 Oakes Road
Racine, Wisconsin 53406

Prepared By:

TRC
999 Fourier Drive, Suite 101
Madison, Wisconsin 53717

Todd Martin
Principal Project Manager

BreAnne Kahnk, PE
Senior Project Engineer



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TABLE OF CONTENTS

CERTIFICATION STATEMENT ..... **III**
REVISION LOG ..... **IV**
1.0 INTRODUCTION **1**
1.1 Objective 1
1.2 Closure Plan Requirements 1
2.0 HISTORY OF CLOSURE IMPLEMENTATION **2**
2.1 Barrier Walls – North and West Installations 3
2.2 Containment Structure 4
2.3 Final Cover System over the Hazardous Waste Unit 4
2.4 Landfill Gas and Leachate Extraction System 6
3.0 CLOSURE PERFORMANCE STANDARD **9**
3.1 Schedule for Completion of Final Cover System over the Hazardous Waste Unit 10
3.2 Closure Costs 10
4.0 CONCLUSIONS **11**
5.0 REFERENCES **12**

FIGURES

Figure 1: Site Location Map
Figure 2: Site Plan
Figure 3: Constructed Final Cover Locations
Figure 4: Final Cover Grades

APPENDICES

Appendix A: WDNR Correspondence
Appendix B: RCRA Cover Plans
Appendix C: Closure Cost Estimate

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ACRONYM LIST

HWU	Hazardous Waste Unit
KHL	Kestrel Hawk Landfill
NON	Notice of Noncompliance
RCRA	Resource Conservation and Recovery Act
USEPA	United States Environmental Protection Agency
WDNR	Wisconsin Department of Natural Resources

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Certification Statement

I, 
BreAnne N. Kahnk, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of Chapter A-E 4, Wisconsin Administrative Code; that this document has been prepared in accordance with the Rules of Professional Conduct in Chapter A-E 8, Wisconsin Administrative Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with applicable requirements in Chapters NR 500 to NR 538 and Chapter NR 664, Wisconsin Administrative Code.

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Revision Log

Revision Date	Summary of Revisions
06/12/2020	Initial Issue.
04/05/2021	Updated sections 2.4, 3.1, and 4.0 in response to the Addendum to Notice of Noncompliance.
08/27/2021	Changed references from Wisconsin Administrative Code section NR 665 to the appropriate equivalent in Wisconsin Administrative Code section NR 664. Revised Figure 3 for the 2019 cover construction event. Updated Appendix C closure cost estimate. Added approval letters to Appendix A for final cover construction events in the Northwest Expansion. Added Section 2.5.
04/01/2025	Updated Sections 1.0, 2.3, 2.4, 2.5, 3.0, and 4.0 due to final cover events being completed. Updated Figures 2 and 3 and Appendices A and C.

1.0 Introduction

The Kestrel Hawk Landfill (KHL) is located in Racine, Wisconsin, in the North ½ of Section 23, T3N, R22E, Racine County (**Figure 1**). KHL (License No. 0572) is owned and operated by Republic Services of Wisconsin, Limited Partnership (Republic).

KHL consists of the Old Site Landfill and the Northwest Expansion Landfill (Northwest Expansion). The Old Site Landfill comprises approximately 70.1 acres and consists of an encapsulated Resource Conservation and Recovery Act (RCRA) hazardous waste unit (HWU) (Corridors 1 through 6) and non-hazardous waste units consisting of Corridors 7 and 7A, the former City of Racine Landfill, and Corridors 8, 9, and 10, and Corridor 11. Final cover construction for KHL was completed in 2024. **Figure 2** depicts the layout of the KHL.

The landfill was formerly known as the City of Racine Landfill, Land Reclamation, Ltd, and the Land Reclamation Company Landfill, before being acquired by Republic in 1998. The majority of the regulatory determinations, design, and implementation of closure activities for the KHL HWU was performed when the landfill was owned by a different entity occurring between the late 1980s and mid-1990s.

The Wisconsin Department of Natural Resources (WDNR) issued a Notice of Noncompliance, Hazardous Wasted Compliance Assessment (NON) on December 9, 2019. In response to the NON, Republic has been providing requested information in a series of letter responses. A Conditional Close-out related to the NON was issued by the WDNR on June 4, 2021.

This document presents the history of construction, construction documentation, and Wisconsin Department of Natural Recourses (WDNR) approvals of construction.

1.1 Objective

This report has been developed to present the items that have been implemented according to the approved closure plan for the HWU and demonstrate the HWU meets the closure performance standard per NR 664. This report is being developed to address items 9 and 14 of the Notice of Noncompliance issued by the WDNR on December 9, 2019 and the Addendum to Notice of Noncompliance issued by the WDNR on September 16, 2020.

1.2 Closure Plan Requirements

The closure plan approved for the HWU was approved by the WDNR on March 31,1988 (**Appendix A**). This approval required construction of the following items for closure of the HWU:

- Barrier Wall
- Containment Structure
- Slope Stabilization of the South Slope
- Final Cover System
- Landfill Gas and Leachate Extraction System

The above items have been constructed at KHL and previously approved by the WDNR.

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2.0 History of Closure Implementation

The actions that have been implemented by Republic and previous owners of KHL to satisfy the closure of the HWU are presented in the following sections.

The required closure features for the HWU were defined in the WDNR's March 31, 1988 Plan of Operation Approval for the modifications to the hazardous waste closure and long-term care plan. The description of these features as defined in the plan modification are reproduced below with the tense updated:

1. ***Barrier Wall.*** The term "barrier wall" refers to the structure that separates the existing HWU from future contiguous nonhazardous areas used for solid waste disposal. This structure consists of a minimum 7-foot-thick clay separation barrier which is keyed into the existing recompacted clay liner of corridor 6 and into the native clay soils along the perimeter of the HWU. It also includes granular drainage layers and leachate collection piping on both sides of the clay barrier. The barrier wall along the western end of the HWU also includes a slurry cut off-wall and drainage trench below the compacted clay separation barrier.

2. ***Containment Structure.*** The term "containment structure" refers to the structure constructed along the southern boundary of the hazardous waste unit and the southern and western sides of the City of Racine site. This structure consists of a trench excavation into unit 1 soils, installation of a two-foot thick bentonite slurry cutoff wall extending from the base of the excavation to a minimum of 3 feet into geologic unit 3 and a drainage trench located at the base of unit 2. The excavation into unit 1 is to be lined with a two-foot thick recompacted clay liner.

3. ***RCRA Cover.*** The term "RCRA cover," refers to a composite final cover required by United States Environmental Protection Agency (USEPA) for the HWU. This multi-component cover consists of a recompacted clay layer, a synthetic flexible membrane liner, drainage layer, a needle punched geotextile, a soil rooting zone and a layer of topsoil. The final cover is to be seeded, fertilized and mulched. The RCRA cover must cover the entire HWU as well as the portion of corridor 7 which lies vertically above the barrier wall. The RCRA cover will cover approximately 27 acres over corridors 1 through 7.

4. ***Slope Stabilization.*** The term "slope stabilization" refers to the requirements necessary to properly close the exterior slopes of HWU in such a manner as to minimize maintenance. As required by chs.NR 180 and NR 181, Wis. Adm. Code, and in past correspondence, this is reflected as a maximum slope of 3 horizontal to 1 vertical (3:1).

5. ***Drainage Trench.*** The term "drainage trench" refers to the trench excavation in which a perforated PVC pipe is laid and backfilled with gravel. The drainage trenches were designed to intercept, collect, and transport contaminated groundwater and leachate.

6. ***Slurry Cutoff Wall.*** The term "slurry cutoff wall" refers to the excavation through subsurface permeable soil which was backfilled with a bentonite/soil slurry mixture. The cutoff wall was keyed into underlying clay soils."

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2.1 Barrier Walls – North and West Installations

The WDNR's letter on March 31, 1988, "Modifications to the Hazardous Waste Closure and Long-Term Care Plan," required construction of Barrier Walls between the Hazardous Waste Unit and the municipal solid waste portions of the Landfill. A Barrier Wall Design Report was submitted to the WDNR on May 31, 1988 (Foth & Van Dyke and Associates, Inc., 1988) and subsequently approved by the WDNR on September 20, 1988 (**Appendix A**).

The barrier walls consist of 7-foot-thick (measured perpendicular to the slope) compacted clay layers constructed on a 3:1 slope. The barrier wall is keyed into the existing compacted clay liner of Corridor 6 and into the native clay soils along the perimeter of the HWU. The composite liner system for Corridors 8, 9, 10 ties into the side slope of the barrier wall (refer to March 31, 1995 correspondence in **Appendix A**). The approximate locations of the barrier walls are shown on **Figure 3** and **Figure 4** demonstrates how the barrier wall isolates the HWU from the other solid waste units. The subbase consists of a 1-foot–thick layer of sand placed above the waste in the HWU and below the bottom of the clay barrier. The barrier walls were constructed during several construction events starting in 1987 and completed in 1996. Approvals were received for barrier wall construction events, from the WDNR, starting in 1987 and ending in 1996. Documentation was provided to the WDNR at the time of construction as follows:

North Barrier Wall – Along Corridor 7

- Construction of the first phase of the North Barrier Wall was performed in conjunction with construction of the base liner and leachate collection system for Corridor 7. The WDNR approved the Phase I of the North Barrier Wall construction on June 15, 1987 (**Appendix** A).
- Construction of the Phase II of the North Barrier Wall began in March of 1987 and was completed in December 1987. The WDNR verbally approved the construction of Phase II in February 1988 (**Appendix A**).
- Construction of the Phase III of the North Barrier Wall began in November 1987 and was completed in May 1988. The WDNR approved Phase III of the North Barrier Wall construction on November 17, 1989 (**Appendix A**).
- Construction of the Phase IV of the North Barrier Wall began in 1988 and was completed in early 1989. Documentation of this construction work was submitted in 1991, along with the documentation report for the Phase V North Barrier Wall construction work. The WDNR approved this construction on March 14, 1994 (**Appendix A**).
- Construction of the Phase V of the North Barrier Wall was performed from September through December of 1990 and July of 1991. A documentation report for Phase V, which included the work performed for Phase IV construction, was submitted to the WDNR in February of 1991 and 1992. The WDNR approved this construction on March 14, 1994 (**Appendix A**).

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West Barrier Wall – Along Corridors 8, 9, and 10

- Construction of the Phase I of the West Barrier Wall was performed in conjunction with the base liner and leachate collection system for the interior manhole area. The documentation report for this construction was submitted to the WDNR in December 1991. The WDNR approved the construction of the Phase I of the West Barrier Wall on May 11, 1992 (**Appendix A**).

- Construction of the Phase II of the West Barrier Wall began in September 1992 and ended in August 1993. The documentation report for this construction was submitted to the WDNR in August 1993. The WDNR approved construction of the Phase II West Barrier Wall in November of 1993. Construction of the Phase III West Barrier Wall was performed in three construction events: between July and September of 1994, between May and July of 1995, and between May and June of 1996. The WDNR approved construction of the Phase III West Barrier Wall in August of 1996 (**Appendix A**).

2.2 Containment Structure

In June 1988, Foth & Van Dyke, on behalf of KHL, submitted to the WDNR a report entitled, "Containment Structure Design for the Hazardous Waste Unit" (1988b). This report addressed paragraph C of the March 31, 1988 Plan Modification; including drilling of additional soil borings, design of the groundwater collection trench, design of the slurry wall, detailed soil-bentonite mixing procedures, and conveyance piping from the three proposed lift stations to the City of Racine sanitary sewer system. The WDNR approved the design of the Containment Structure in a letter dated December 14, 1988 (**Appendix A**).

As required in the WDNR's March 31, 1988 Closure Plan Modification letter, a groundwater containment structure was constructed. It consists of a bentonite slurry wall, extending along the southern and western portions of the HWU. The portion of the containment structure along the western perimeter of the HWU is below the Corridors. 8, 9, and 10. In addition the containment structure extends along the southern perimeter of the City of Racine landfill and along the western perimeter of the City of Racine landfill. Interior to the slurry wall there is a gravel-filled groundwater collection trench with perforated corrugated piping in the trench to collect and convey groundwater to removal points. The purpose of the containment structure is to prevent possible migration of leachate from the unlined portion of the HWU. The structure is also designed to help prevent the migration of landfill gas from the HWU.

Construction began on the groundwater containment structure in the summer of 1988 and continued through the end of 1989. The construction observation report was submitted by Foth & Van Dyke, on behalf of LRC, and was received by the WDNR on August 9, 1991. The WDNR provided conditional approval of the containment structure on September 13, 1993 (**Appendix** A).

2.3 Final Cover System over the Hazardous Waste Unit

RCRA Cover

Design reports were submitted to the WDNR for the RCRA final cover (Foth & Van Dyke, 1988; Geosyntec Consultants, 1991) and were approved by the WDNR on September 16, 1991 (**Appendix A**). The HWU final cover system consists of three components: the RCRA

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cap, the Southern Slope cap, and the Eastern Slope cap (**Figure 3**). The northern and western barrier walls described previously also act as the cover over the waste in the HWU and are also a portion of the liner system for Corridors 7, 8, 9, and 10, which overlap the HWU.

The RCRA cap consists of the following layers:

- 6-inches of topsoil
- 18-inches of rooting zone (general fill)
- Geotextile
- 1-foot of sand drainage
- Geomembrane
- 3-feet of compacted clay

The South and East Slope cap consist of the following layers:

- 6-inches of topsoil
- 4-feet of compacted clay

RCRA Cover System

- Phase I of the RCRA composite cover consisted of 9.8 acres and was completed in 1991. The construction documentation of the Phase I RCRA cover was approved by the WDNR on April 13, 1993 (**Appendix A**).
- Phase II of the RCRA composite cover consisted of 6.7 acres and was completed in 1994. The construction documentation report was submitted on December 1994 (Montgomery Watson Americas, Inc., 1994).
- Phase III of the RCRA composite cover consisted of 10.7 acres and was completed in 2001. The construction documentation was approved by the WDNR on September 8, 2004 (**Appendix A**).

As documented in the July 2, 2004 letter from the WDNR regarding the remaining Old Site Final Cover, the remaining portion of RCRA cover is above the barrier containment wall and the WDNR only considered the Northwest Expansion to be active at the time of the letter (**Appendix A**).

A plan modification for the remaining portion of the RCRA final cover to be installed above the Barrier Wall in Corridors 7, 8, 9, and 10 was submitted in 2011 (CQM, Inc.) and approved by the WDNR on August 17, 2011 (**Appendix A**). This plan modification replaces 2 feet of the compacted clay with a geosynthetic clay liner (GCL) in the cover system, provides final grades for this area, and provides details of the tie in for the different final cover systems. **Appendix B** provides the plan sheets submitted by CQM, Inc. for this plan modification.

The final RCRA final cover area (approximately 2.1 acres), which is located over Corridors 8, 9, and 10 and Corridor 11 was completed in 2024. The construction documentation report was submitted to the WDNR on July 24, 2024 and approved by the WDNR on November 8, 2024 (**Appendix A**). The RCRA area final cover consisted of, from bottom to top, 2 feet of compacted clay cover, GCL, 40 mil LLDPE geomembrane, geocomposite, 2.5 feet of rooting zone, and 6 inches of topsoil.

East Slope Final Cover System

Construction of the final cover on the East Slope of the HWU was performed during several construction events starting in July 1985 and ending in 1991. The WDNR approved final cover documentation submittals on July 29, 1991, and again on April 19, 1994 (**Appendix A**).

South Slope Final Cover System

In June 1988, Foth & Van Dyke, on behalf of KHL, submitted to the WDNR a report entitled, "Containment Structure Design for the Hazardous Waste Unit" (1988a). This report addressed paragraph E of the March 31, 1988 Plan Modification. Construction of the final cover for the South Slope was completed in August 1991, with a construction observation report submitted to the WDNR in January 1992. Construction repairs on the south slope final cover system were performed to fulfill an agreement made with the WDNR during a site inspection performed by the WDNR on February 4, 1993. This construction took place from 1991 to 1992 to address the areas of erosion identified in a Facility Inspection Form from the WDNR. An addendum to the previous construction observation report was submitted to the WDNR in March 1993 and approved May 22, 1996 (**Appendix A**).

2.4 Landfill Gas and Leachate Extraction System

In August 1988, a report titled Leachate and Gas Extraction System Design (Foth and Van Dyke, 1988c), was submitted to satisfy Condition F – Landfill Gas and Leachate Extraction Systems of the March 31, 1988 WDNR plan modification. There have been several construction events for the gas and leachate extraction system as detailed below. In addition, routine maintenance is regularly performed on the system, but not called out in these listed events.

- Construction Observation Report, 1990 & 1991 Temporary/Permanent Construction, Gas and Leachate Extraction System, Warzyn, November 1991.
- Construction Observation Report - Addendum, Permanent Gas and Leachate Piping Construction, Hazardous Waste Unit, Warzyn, April 1992.
- Construction Observation Report, East Slope and Corridor 7, Gas and Leachate Extraction System, Warzyn, December 1993.
- Construction Observation Report, Corridor 7 Gas and Leachate Extraction System, Montgomery Watson, August 1995.
- Gas Collection and Control System Improvements Construction Quality Assurance, EMCON/OWT Solids Waste Services, December 2001.
- Construction Documentation Report Gas Management System improvements/Expansion 2003, Earth Tech, Inc., August 2001.

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- 2008 Landfill Gas System Improvements, December 2008, 2008 Annual Report, TRC, 2009.
- Construction Documentation Report, 2010 Landfill Gas System Improvements, CQM, Inc., August 2010.
- Landfill gas header pipe was constructed in October 2011 along the access road on the West side of the former City of Racine Landfill and Corridor 11, 2011 Annual Report, TRC, 2012.
- Landfill gas and leachate pipe system along the East side of Corridors 1-6 was replaced with ten-inch landfill gas pipe and six-inch leachate pipe. The landfill gas and leachate pipe laterals to LGW-321 through LGW-326, LGW-317, LGW-47, and GW-12 were also replaced, 2014 Annual Report, TRC, 2015.
- Eight vertical landfill gas extraction wells and associated piping were installed including two condensate sumps in Phase 5, 2017 Annual Report, TRC, 2018.
- Construction Documentation Report, 2019 Landfill Gas System Improvements, Tetra Tech, December 2019.
- Construction Documentation Report, 2022-2023 Landfill Gas System Construction, Weaver Consultants Group, November 2023.

A detailed assessment of the performance of the leachate extraction system was performed for the Old Site Hydrogeologic Evaluation (RMT, 2005). This evaluation developed a set of four criteria used to evaluate the effectiveness of the extraction system. These evaluations are being performed for KHL on an annual basis in the solid waste annual reports.

2.5 Northwest Expansion Final Cover Events

Final cover has been installed over portions of the Northwest Expansion as shown on **Figure 3**. These cover construction events were performed following the 1996 Plan of Operation Modification for the Northwest Expansion. The final cover system meets the requirements of ch. NR 504 and is composed of from top to bottom of:

- 6" topsoil
- 2.5' general fill
- drainage layer
- 40 mil LLDPE geomembrane
- geosynthetic clay liner (GCL) or compacted clay barrier
- 2' soil barrier layer

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The below final cover installation events include those within the Northwest Expansion (and its vertical overlay) along with concurrently closed areas within the Old Site. These final cover installation events include:

- 2002 – 5.9 acres final cover constructed, Documentation report by STS, October 2002
- 2005 – 2.8 acres final cover constructed, Documentation report by CQM Inc., October 2005
- 2005 – 1.1 acres final cover constructed, Documentation report by CQM Inc., October 2005
- 2008 – 3.0 acres final cover constructed, Documentation Report by Earth Tech, August 2008
- 2009 – 5.0 acres final cover constructed, Documentation report by CQM Inc., January 2010
- 2010 – 5.2 acres final cover constructed, Documentation report by CQM, Inc., December 2010
- 2019 – 8.3 acres final cover constructed, Documentation report by CQM, Inc., October 2019 (approximately 1.1 acres are located outside of the vertical overlay and cover portions of Corridor 11 and the Former City of Racine Landfill)
- 2023 – 15 acres final cover constructed, Documentation report by Weaver Consultants Group, July 2023
- 2024 – 24.8 acres final cover constructed, Documentation report by Weaver Consultants Group, July 2024 (approximately 5.2 acres are located outside of the vertical overlay and cover portions of Corridors 1-11 and the Former City of Racine Landfill)

Other final cover events, outside the HWU and Northwestern Expansion areas, are depicted on **Figure 3**.

3.0 Closure Performance Standard

KHL has been historically managed by the WDNR under NR 500 code after the WDNR became the lead regulatory agency for the HWU. The previous approvals for construction events at KHL were administered per NR 500.

Closure requirements for interim license hazardous waste disposal facilities are defined under NR 664.0111, NR 664.0112, NR 664.0310.

Section NR 664.011 presents the closure performance standard that closure provides the following: minimizes the need for further maintenance; controls, minimizes, or eliminates post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off or hazardous waste decomposition products to the ground or surface water or to the atmosphere; and complies with the standards of chapter NR 140 and chapter NR 720.

Section NR 664.0310 applies to landfills and requires that the final cover is designed and constructed to perform the following:

- Provide long-term minimization of migration of liquids through the closed landfill
- Function with minimal maintenance
- Promote drainage and minimize erosion or abrasion of the cover
- Accommodate settling and subsidence so that the cover's integrity is maintained
- Have a permeability less than or equal to the permeability of any bottom liner system.

The existing final cover, barrier wall, containment structure, and leachate and gas extraction systems satisfy the performance requirements of the NR 664.011 and NR 664.0310.

- The final cover system is vegetated and was constructed with slopes that promote storm water drainage in a manner that controls erosion of the final cover.
- The final cover system provides a low permeability barrier that eliminates post-closure escape of hazardous waste and leachate; and minimizes the migration of liquids through the closed landfill. The barrier wall provides hydraulic and physical containment of the HWU from the other solid waste units.
- The final cover and barrier wall were constructed of materials with sufficient properties and thicknesses to accommodate anticipated settlement of the final cover. Settlement of the final cover within the HWU is monitored annually.
- The RCRA final cover includes a geomembrane and the cover on the side slopes are constructed of a compacted clay of sufficient thickness to provide permeabilities less than or equal to the permeability of underlying soils or liner systems.

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3.1 Schedule for Completion of Final Cover System over the Hazardous Waste Unit

Waste acceptance at KHL ceased on December 31, 2022. Final cover construction, including the remaining section over the HWU was completed in July 2024. The documentation report was submitted to the WDNR for approval on July 24, 2024.

3.2 Closure Costs

The most recent closure cost estimates are included in **Appendix C**; however, as of July 2024 the remaining open areas of the Kestrel Hawk Landfill were closed with final cover placed.

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4.0 Conclusions

The information presented in this report demonstrates that the HWU has been closed in accordance with the March 31, 1988 closure plan except for an area of RCRA final cover above the barrier wall that will be installed in conjunction with the closure of a non-hazardous area of the KHL. The HWU is isolated physically and hydraulically by the existing barrier wall and final cover system. The current closure items achieve the performance standard of NR 664.

The following conclusions are made based on the information presented in this report:

- The HWU certifications of closure according to s. NR 664.0115 were submitted with each closure construction documentation report.
- In response to Notice of Noncompliance Item 9: This report provides the items required for a closure plan, including a closure schedule.
- In response to Notice of Noncompliance Item 14: The barrier wall separates the non-hazardous waste disposal area from the areas where hazardous wastes were previously disposed. The 2011 plan modification for the final cover modifications approved final grades for non-hazardous waste placement above the portion of the HWU without final cover.

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5.0 References

CQM, Inc. 2011. Plan Modification Request to the Approved Plan of Operation, Kestrel Hawk recycling & Disposal Facility, Racing, Wisconsin (License #0572). June 2011.

Foth & Van Dyke and Associates, Inc (Foth and Van Dyke). 1988. Barrier Wall Design for the Hazardous Waste Unit, Land Reclamation, Ltd. May 31,1988.

Foth & Van Dyke. 1988a. South Slope Modification for the Hazardous Waste Unit, Land Reclamation, Ltd. June 17.

Foth & Van Dyke. 1988b. Containment Structure Design for the Hazardous Waste Unit, Land Reclamation, Ltd. June 28.

Foth & Van Dyke. 1988c. Leachate & Gas Extraction System Design for the Hazardous Waste Unit, Land Reclamation, Ltd. August 23.

Montgomery Watson Americas, Inc. Construction Observation Report: RCRA Phase II Final Cover, Land Reclamation Company Landfill, City of Racine, Racine County, Wisconsin, WDNR License No. 572. December

Geosyntec Consultants. 1991. Hazardous Waste Unit RCRA Final Cover Modifications Report, Land Reclamation Company Landfill. May 1991.

RMT, Inc. 2005. Old Site Hydrogeologic Evaluation Phase I Summary Report, Kestrel Hawk Landfill. October 2005.

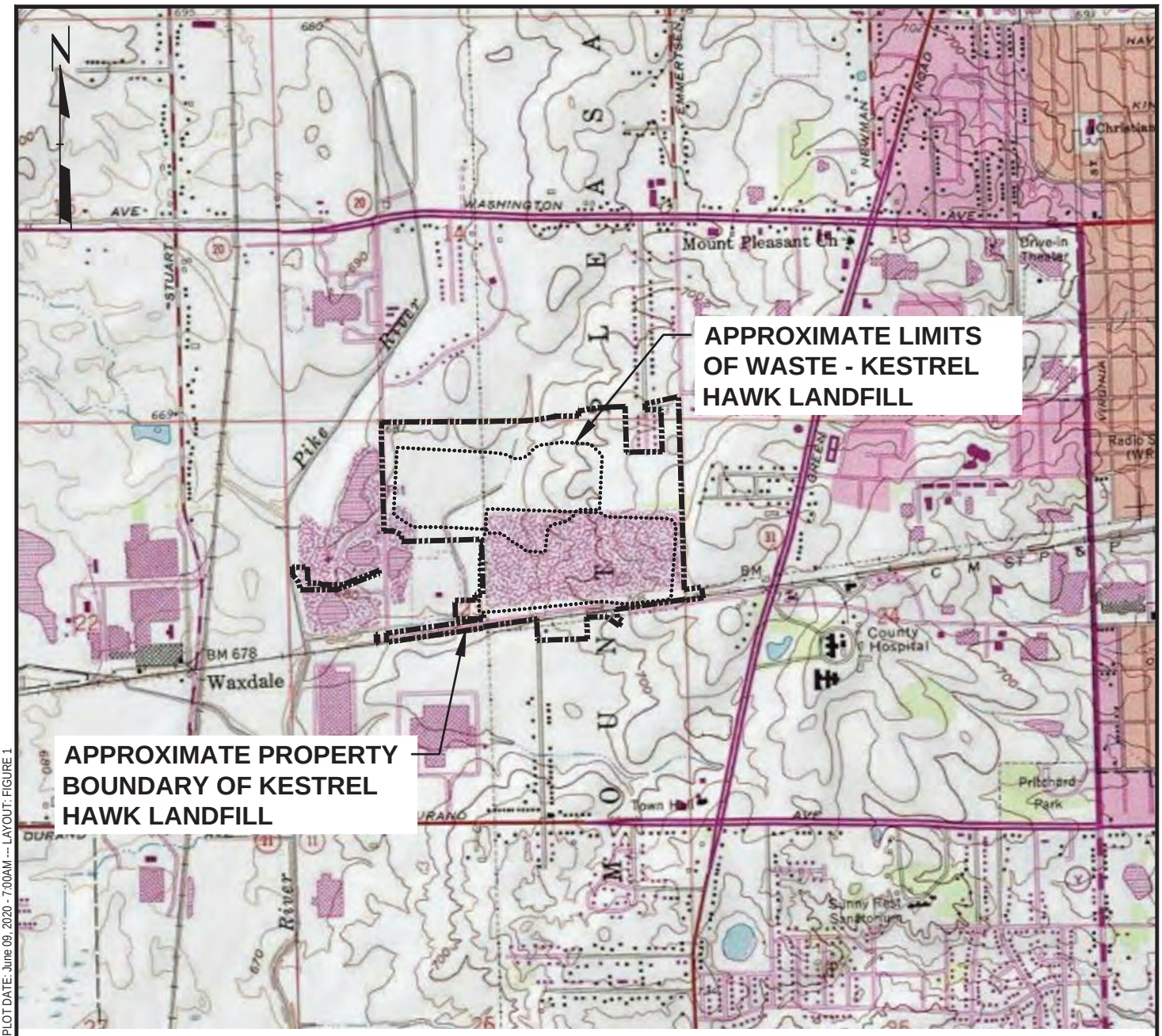
TRC Environmental Corporation (TRC). 2012. Year 2011 Annual Report, Kestrel Hawk Recycling and Disposal Facility. June 2012.

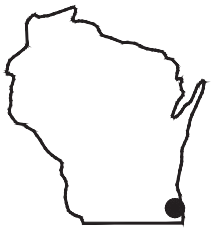
TRC. 2014. Year 2013 Annual Report, Kestrel Hawk Landfill. June 2014.

TRC. 2017. Year 2016 Annual Report, Kestrel Hawk Landfill. October 2017.

United States Environmental Protection Agency. 1987. “Conditional Approval of Barrier Wall Construction.”

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STATE LOCATION

SOURCE: BASE MAP FROM RACINE SOUTH, WISCONSIN
7.5 MIN. USGS QUADRANGLE.

TRC
708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

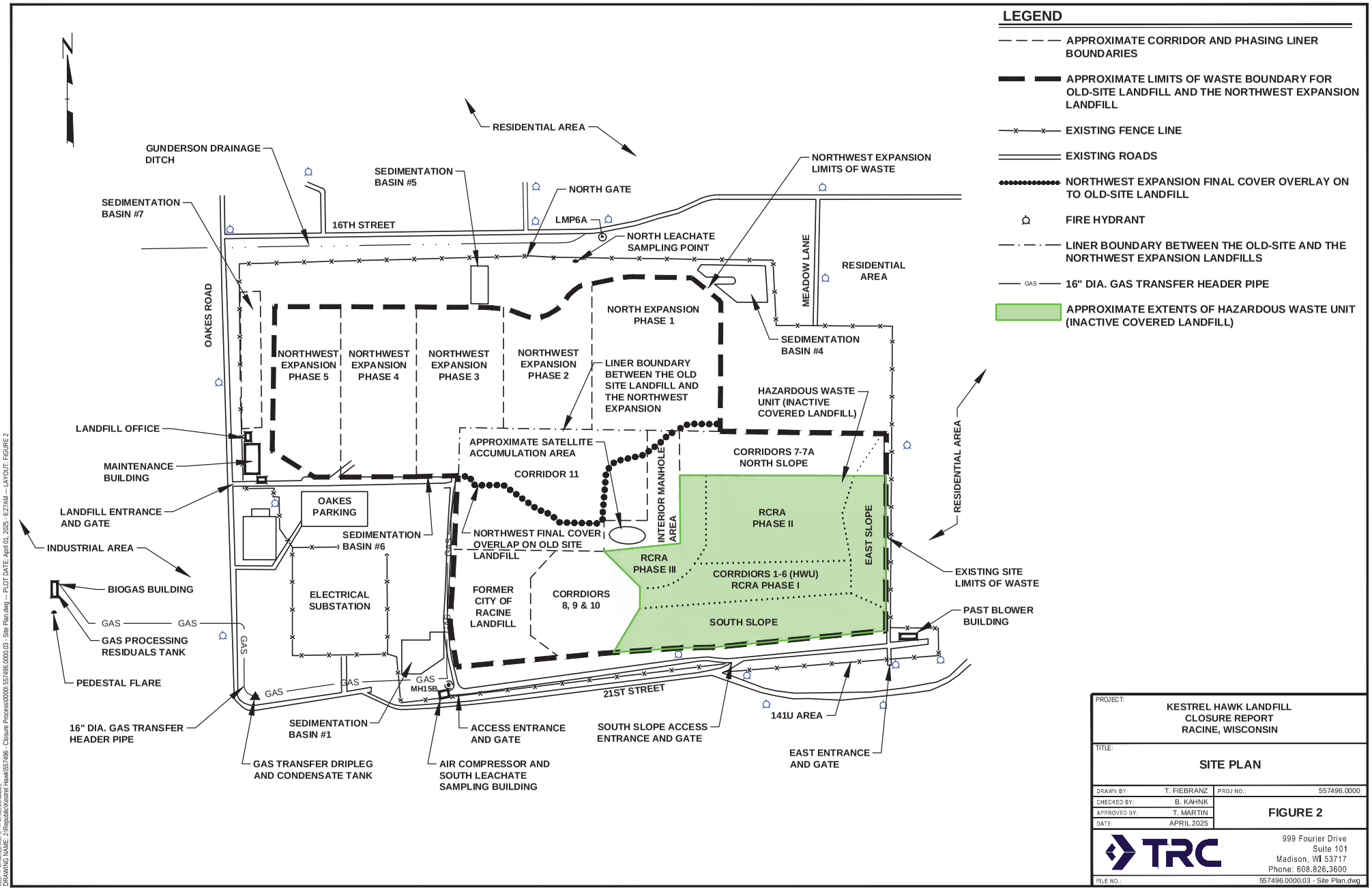
PROJECT:
KESTREL HAWK LANDFILL
CLOSURE REPORT - CORRIDORS 1 - 6
RACINE, WISCONSIN

TITLE:
SITE LOCATION MAP

DRAWN BY:	T. FIEBRANZ
CHECKED BY:	S. EDWARDS
APPROVED BY:	J. HOTSTREAM
DATE:	JUNE 2020
PROJ. NO.:	326037.0005
FILE:	326037.0005.01.dwg

FIGURE 1

8.5x11 -- ATTACHED XREFS: Site Data -- ATTACHED IMAGES: USA Topo:
DRAWING NAME: J:\Republic\Kestrel Hawk\326037 - 2019 Annual Report\0005\ 326037.0005.01.dwg --- PLOT DATE: June 09, 2020 - 7:00AM --- LAYOUT: FIGURE 1



LEGEND

- APPROXIMATE CORRIDOR AND PHASING LINER BOUNDARIES
- APPROXIMATE LIMITS OF WASTE BOUNDARY FOR OLD-SITE LANDFILL AND THE NORTHWEST EXPANSION LANDFILL
- EXISTING FENCE LINE
- EXISTING ROADS
- NORTHWEST EXPANSION FINAL COVER OVERLAY ON TO OLD-SITE LANDFILL
- FIRE HYDRANT
- LINER BOUNDARY BETWEEN THE OLD-SITE AND THE NORTHWEST EXPANSION LANDFILLS
- GAS — 16" DIA. GAS TRANSFER HEADER PIPE
- APPROXIMATE EXTENTS OF HAZARDOUS WASTE UNIT (INACTIVE COVERED LANDFILL)

PROJECT:
KESTREL HAWK LANDFILL
CLOSURE REPORT
RACINE, WISCONSIN

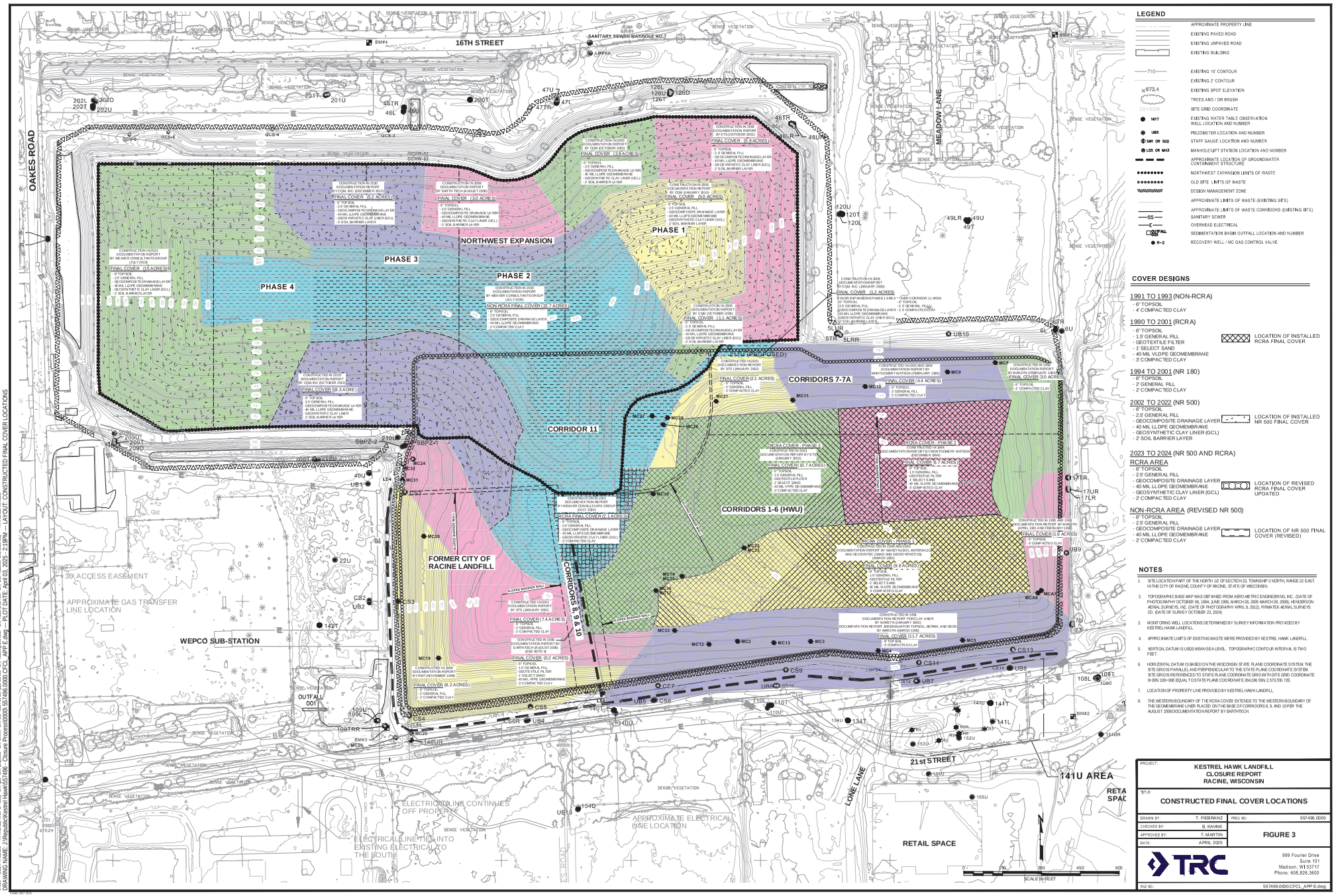
TITLE:
SITE PLAN

DRAWN BY:	T. FIEBRANZ	PROJ NO.:	557496.0000
CHECKED BY:	B. KAHNK		
APPROVED BY:	T. MARTIN		FIGURE 2
DATE:	APRIL 2025		

TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO.: 557496.0000.03 - Site Plan.dwg

1:417 — ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496 - Closure Process\0000.557496.0000.03 - Site Plan.dwg — PLOT DATE: April 01, 2025 - 6:27AM — LAYOUT: FIGURE 2



LEGEND

- APPROXIMATE PROPERTY LINE
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING BUILDING
- 710 — EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- 873.4 — EXISTING SPOT ELEVATION
- TREES AND / OR BRUSH
- SITE GRID COORDINATE
- NWT — EXISTING WATER TABLE OBSERVATION WELL LOCATION AND NUMBER
- UB5 — PIEZOMETER LOCATION AND NUMBER
- SW OR SG2 — STAFF GAUGE LOCATION AND NUMBER
- LS5 OR MH3 — MANHOLE/LIFT STATION LOCATION AND NUMBER
- APPROXIMATE LOCATION OF GROUNDWATER CONTAINMENT STRUCTURE
- NORTHWEST EXPANSION LIMITS OF WASTE
- OLD SITE LIMITS OF WASTE
- DESIGN MANAGEMENT ZONE
- APPROXIMATE LIMITS OF WASTE (EXISTING SITE)
- APPROXIMATE LIMITS OF WASTE CORRIDORS (EXISTING SITE)
- SS — SANITARY SEWER
- E — OVERHEAD ELECTRICAL
- SEDIMENTATION BASIN OUTFALL LOCATION AND NUMBER
- R-2 — RECOVERY WELL / MC GAS CONTROL VALVE

COVER DESIGNS

1991 TO 1993 (NON-RCRA)
- 6" TOPSOIL
- 4' COMPACTED CLAY

1990 TO 2001 (RCRA)
- 6" TOPSOIL
- 1.5' GENERAL FILL
- GEOTEXTILE FILTER
- 1' SELECT SAND
- 40 MIL VLDPE GEOMEMBRANE
- 3' COMPACTED CLAY

LOCATION OF INSTALLED RCRA FINAL COVER

1994 TO 2001 (NR 180)
- 6" TOPSOIL
- 2' GENERAL FILL
- 2' COMPACTED CLAY

2002 TO 2022 (NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' SOIL BARRIER LAYER

LOCATION OF INSTALLED NR 500 FINAL COVER

2023 TO 2024 (NR 500 AND RCRA)

RCRA AREA
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- GEOSYNTHETIC CLAY LINER (GCL)
- 2' COMPACTED CLAY

LOCATION OF REVISED RCRA FINAL COVER UPDATED

NON-RCRA AREA (REVISED NR 500)
- 6" TOPSOIL
- 2.5' GENERAL FILL
- GEOCOMPOSITE DRAINAGE LAYER
- 40 MIL LL DPE GEOMEMBRANE
- 2' COMPACTED CLAY

LOCATION OF NR 500 FINAL COVER (REVISED)

NOTES

1. SITE LOCATION PART OF THE NORTH 1/2 OF SECTION 23, TOWNSHIP 3 NORTH, RANGE 22 EAST, IN THE CITY OF RACINE, COUNTY OF RACINE, STATE OF WISCONSIN.
2. TOPOGRAPHIC BASE MAP WAS OBTAINED FROM ABRO METRIC ENGINEERING, INC. (DATE OF PHOTOGRAPHY OCTOBER 99, 1994; JUNE 1995, MARCH 28, 2005 MARCH 29, 2008), HENDERSON AERIAL SURVEYS, INC. (DATE OF PHOTOGRAPHY APRIL 9, 2012), FIRMATEK AERIAL SURVEYS CO. (DATE OF SURVEY OCTOBER 23, 2024)
3. MONITORING WELL LOCATIONS DETERMINED BY SURVEY INFORMATION PROVIDED BY KESTREL HAWK LANDFILL.
4. APPROXIMATE LIMITS OF EXISTING WASTE WERE PROVIDED BY KESTREL HAWK LANDFILL.
5. VERTICAL DATUM IS USGS MEAN SEA LEVEL. TOPOGRAPHIC CONTOUR INTERVAL IS TWO FEET.
6. HORIZONTAL DATUM IS BASED ON THE WISCONSIN STATE PLANE COORDINATE SYSTEM. THE SITE GRID IS PARALLEL AND PERPENDICULAR TO THE STATE PLANE COORDINATE SYSTEM. SITE GRID IS REFERENCED TO STATE PLANE COORDINATE GRID WITH SITE GRID COORDINATE 0-00N, 100+00E EQUAL TO STATE PLANE COORDINATE E 264,186.59N, 2,573,700.72E.
7. LOCATION OF PROPERTY LINE PROVIDED BY KESTREL HAWK LANDFILL.
8. THE WESTERN BOUNDARY OF THE RCRA COVER EXTENDS TO THE WESTERN BOUNDARY OF THE GEOMEMBRANE LINER PLACED ON THE BASE OF CORRIDORS 8, 9, AND 10 PER THE AUGUST 2008 DOCUMENTATION REPORT BY EARTHTECH

PROJECT: KESTREL HAWK LANDFILL
CLOSURE REPORT
RACINE, WISCONSIN

TITLE: CONSTRUCTED FINAL COVER LOCATIONS

DRAWN BY:	T. FIEBRANZ	PROJ. NO:	557496.0000
CHECKED BY:	B. KAHNK	FIGURE 3	
APPROVED BY:	T. MARTIN		
DATE:	APRIL 2025		

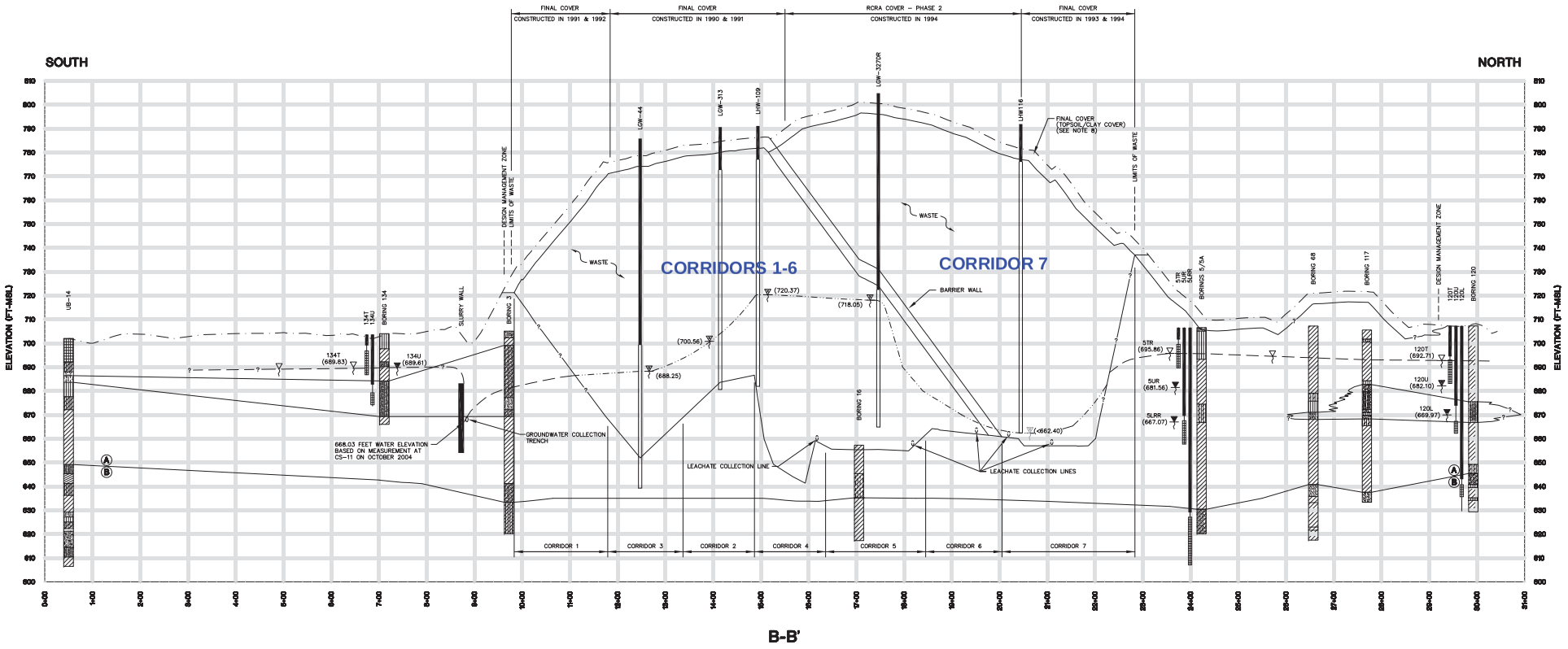
TRC
999 Fourier Drive
Suite 101
Madison, WI 53717
Phone: 608.826.3600

FILE NO: 557496.0000.CFCL_APP E.dwg

24x36 -- USER: TFiebranz -- ATTACHED XREFS: utility - CR: gas - CR: proposed - CR: bound - CR: EG - 2024-10-23 - plot.stb site - CR: batching and color - CR: Hatch.ana Text - CR: Site Features - bw - 2010.fwlp -- ATTACHED IMAGES:
DRAWING NAME: J:\Republic\Kestrel Hawk\557496.0000\CFCL_APP E.dwg -- PLOT DATE: April 03, 2025 - 2:19PM -- LAYOUT: CONSTRUCTED FINAL COVER LOCATIONS

CALLOUTS BY: J. HOTSTREAM 4/13/2020

EXTENTION OF RCRA FINAL COVER OVER BARRIER WALL



B-B'

LEGEND

- STRATIGRAPHIC BOUNDARY (DASHED WHERE INFERRED)
- EXISTING GROUND SURFACE (3/28/05)
- LEACHATE HEAD SURFACE
- WATER TABLE SURFACE
- (679.04) GROUND WATER OR LEACHATE ELEVATION IN WELL (FT. M.S.L.)
- LEACHATE LEVEL IN LHW OR LGW WELLS (FT. M.S.L.)
- WATER TABLE ELEVATION IN MONITORING WELLS (FT. M.S.L.)
- POTENTIOMETRIC HEAD ELEVATION IN MONITORING WELLS (FT. M.S.L.)
- (A) UNIT A
- (B) UNIT B

MONITORING WELL CONSTRUCTION

- WELL SEAL
- WELL CASING
- WELL SCREEN

LEACHATE HEAD OR GAS WELL CONSTRUCTION

- GRAVEL PACK OR WELL SEAL
- WELL SCREEN

SLURRY WALL CONSTRUCTION

GEOLOGIC SYMBOLOGY

CLAYS
- LEAN CLAY/ LEAN CLAY WITH SAND/GRAVEL (CL)
- SANDY LEAN CLAY/SANDY LEAN CLAY WITH GRAVEL (CL)
- SILTY CLAY/SILTY CLAY WITH SAND/GRAVEL (CL-ML)
- SANDY SILTY CLAY/SANDY SILTY CLAY WITH GRAVEL (CL-ML)

SANDS
- WELL-GRADED/POORLY-GRADED SAND (SW OR SP)
- WELL-GRADED/POORLY-GRADED SAND, WITH GRAVEL (SW OR SP)

SILTS
- SILT/SILT WITH SAND GRAVEL (ML)
- CLAYEY SILT
- SANDY SILT/SANDY SILT WITH GRAVEL (ML)
- GRAVELLY SILT/GRAVELLY SILT WITH SAND (ML)
- ELASTIC SILT/ELASTIC SILT W/ SAND ELASTIC SILT W/ GRAVEL (MH)

GRAVELS
- WELL-GRADED/POORLY-GRADED GRAVEL (GW OR GP)

MISCELLANEOUS MATERIALS
- PEAT
- TOPSOIL
- EARTHEN FILL

NOTES

1. THE CORRELATION LINES ARE BASED ON INTERPOLATION BETWEEN BORINGS AND MAY NOT REPRESENT ACTUAL SUBSURFACE CONDITIONS.
2. HORIZONTAL DISTANCES ARE MEASURED AND THE GROUNDWATER AND LEACHATE HEAD DATA ARE PLOTTED WITH RESPECT TO THE CENTER OF EACH BORING LOCATION. WELL CONSTRUCTION SCHEMATICS ARE OFFSET FOR CLARITY.
3. REFER TO FIGURE 5 FOR NOTES REGARDING THE EXISTING TOPOGRAPHY AND CROSS SECTION LOCATIONS.
4. ELEVATIONS ARE SHOWN IN REFERENCE TO USGS MEAN SEA LEVEL (M.S.L.) DATUM.
5. THE GROUNDWATER ELEVATIONS ARE BASED ON MEASUREMENTS TAKEN BY RMT ON OCTOBER 18 & 19, 2004. THE LEACHATE ELEVATIONS ARE BASED ON MEASUREMENTS TAKEN BY RMT BETWEEN OCTOBER 19 AND 21, 2004.
6. BORINGS SHOWN TO BE ABOVE OR BELOW EXISTING GROUND SURFACE (MARCH 28, 2005) PREDATE EITHER FILL OR EXCAVATION ACTIVITIES IN THOSE AREAS. WASTE IN AREAS 8, 9 AND 10 AS INDICATED IN BORINGS 144, 145 AND 188 WAS REMOVED PRIOR TO CONSTRUCTION OF SLURRY WALL IN 1991.
7. EXISTING GROUNDWATER CONTAINMENT STRUCTURE LOCATIONS AND DEPTHS WERE APPROXIMATED FROM A COPY OF THE CONSTRUCTION OBSERVATION REPORT FOR THE GROUNDWATER CONTAINMENT STRUCTURE PLAN SET RECEIVED AUGUST 1991. (FOTH & VAN DYKE).
8. FINAL COVER THICKNESS SHOWN AS 4.5-FEET THICK. ACTUAL THICKNESS MAY VARY BASED ON LOCATION WITHIN SPECIFIC FINAL COVER PHASING.
9. LANDFILL BASE ELEVATIONS AT LOCATIONS WHERE NO BORINGS OR WELLS ARE PRESENT ARE PROJECTED BASED ON INFORMATION FROM ADJACENT BORINGS OR WELLS.
10. THE TOP OF UNIT B ELEVATIONS BENEATH THE LANDFILL ARE BASED ON A PROJECTED CONTOUR MAP USING STRATIGRAPHIC DATA FROM SOIL BORINGS INSTALLED AROUND THE PERIMETER AND WITHIN THE LANDFILL.
11. THE BASEGRADES WITHIN CORRIDOR 4 WERE EXCAVATED 20' BELOW THE CORRIDOR 4 LEACHATE COLLECTON PIPE 400 FEET FROM THE EAST PIPE END. REFER TO APPENDIX A OF THIS REPORT FOR ADDITIONAL INFORMATION.

PROFILE SCALE: 20' / 100' — SCALE: 1"=100' HORIZONTAL; SCALE: 1"=20' VERTICAL
VERTICAL EXAGGERATED = 5X

NO.	BY	DATE	REVISION	APP'D.
3.				
2.				
1.				

PROJECT: KESTREL HAWK LANDFILL
OLD SITE HYDROGEOLOGIC EVALUATION
PHASE I SUMMARY REPORT

SHEET TITLE: CROSS SECTION B-B'

DRAWN BY: MEYERHOC	SCALE:	PROJ. NO.	4865.94
CHECKED BY: TS	AS SHOWN	FILE NO. 48659420_REV1.DWG	
APPROVED BY: JO	DATE PRINTED:		
DATE: OCTOBER 2005			

RMT
744 Heartland Trail
Madison, WI 53717-1934
P.O. Box 8923 53708-8923
Phone: 608-831-4444
Fax: 608-831-3334

FIGURE 4: Reproduced from RMT, Inc. (2005)

Appendix A: WDNR Correspondence

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Jodi Feld

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

June 15, 1987

IN REPLY REFER TO: 4410-2

Mr. Glenn A. Oakes, President
Land Reclamation, Ltd.
2250 South Green Bay Road
Racine, WI 53406

SUBJECT: Facility Construction Documentation Review
Corridor 7-Land Reclamation
Ltd., License #0572, Racine County

Dear Mr. Oakes:

This letter is to inform you of the review and approval status of Corridor 7. The Residuals Management and Land Disposal Section has determined that the construction documentation reports required for approval of Corridor 7 are in substantial compliance with ch. NR 180, Wis. Adm. Code, the Plan of Operation Approval (December 19, 1984), and the subsequent conditions of other approval letters subject to the limitations contained in this letter. The Hazardous Waste Management Section has determined that the information submitted for the existing section of the hazardous waste barrier between Corridors 6 and 7 meets the requirements and intent of the Department's guidance provided for construction of the barrier. However, U.S. EPA – Region V must also approve the barrier construction. The concerns raised by Region V must be addressed to their satisfaction, and approval from Region V of the existing hazardous waste barrier must be obtained, prior to refuse placement in Corridor 7. Our staff has been in contact with Region V and has informed them of our review findings.

Refuse filling in Corridor 7 may commence after an approval letter from EPA - Region V office is issued and received by LRL. Refuse placement in Corridor 7 will be limited to the area identified below. This area should be satisfactory to handle LRL's short-term disposal needs while other details concerning the hazardous waste barrier design and construction are addressed and finalized. A comprehensive review letter by WDNR addressing the construction and documentation of Corridor 7 will follow. That letter may contain conditions of approval for the landfill. However, we do not anticipate that those conditions will affect refuse placement in the areas of Corridor 7 limited by this letter.

LIMITATIONS

1. Refuse placement in Corridor 7 shall be limited to the base area defined as follows:

   a. The temporary northern and eastern berms constructed in Corridor 7.

   b. The hazardous waste barrier as constructed between Corridor 6 and 7.

   c. The western limit of Corridor 7, shown on plan sheet 8R (RMT, June 1984 Plan of Operation Addendum) as approximately grid line 12+00E.

2. Refuse filling against the existing hazardous waste barrier shall not exceed the portions documented in Addendum #1 (Foth & Van Dyke, January 1987). The hazardous waste barrier was documented for the first 36 lifts, which extend to approximately elevation 690.

3. Further construction of the hazardous waste barrier at all locations cannot not proceed until approval of the design concepts and construction details by WDNR and U.S. EPA - Region V is obtained.

   We anticipate that Land Reclamation, Ltd. will address the remaining design concerns relating to the hazardous waste barrier and the closure plan so that construction can proceed with the barrier and additional disposal volume in Corridor 7 can be obtained.

If you have any questions concerning this letter, please contact us immediately. Please contact Edward Lynch at (608) 266-3084 or Daniel Carey at (608) 267-7572 with regard to technical or design concerns.

Sincerely,

Paul P. Didier

Paul P. Didier, P.E., Director
Bureau of Solid Waste Management

RGS:DC:pl
9741R

cc: Ken Hein - SED
Ed Lynch - HW/3
Robert Hunter - DOJ
Scott Schreiber - LRL
Mary Carington - Town of Mt. Pleasant
Chuck Slaustas - U.S. EPA Region V-SHS/13
Rick Karl - U.S. EPA Region V-SHE/12

Dennis Mack

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

MAR 31 1988

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO: 4430 & 4410-2

Mr. Glenn A. Oakes, President
Land Reclamation, Ltd.
2250 South Green Bay Road
Racine, WI 53406

SUBJECT: Modifications to the Hazardous Waste Closure and Long-Term Care Plan and Plan of Operation Approval
Land Reclamation, Ltd. Landfill, Racine County
EPA I.D.: WID 076171008
DNR License: 0572

Dear Mr. Oakes:

The Department of Natural Resources has completed its review of your report entitled "Closure and Long-Term Care Plan for the Land Reclamation, Ltd. (LRL) Landfill (WID 076171008)" submitted by Foth & Van Dyke and Associates, Inc. of Milwaukee, Wisconsin and received by the Department on August 10, 1987. The required review fee of $1,500.00 was received on October 1, 1987. This plan submittal also addressed items covered by the Department's December 19, 1984, ch. NR 180, Wis. Adm. Code, Plan of Operation Approval. We are hereby informing you that, as submitted, the plan does not provide sufficient detail on closure or long-term care of the LRL landfill hazardous waste management unit and also does not sufficiently address previous conditions contained in the ch. NR 180, Wis. Adm. Code, Plan of Operation Approval. You are further notified that the proposed closure and long-term care plan is modified by the conditions set forth in the attached report, and under s. NR 181.42(8)(d), Wis. Adm. Code, this modified plan becomes the approved closure plan. In addition, modifications are being made to your approved plan of operation in accordance with s. 144.44(3)(d), Stats.

Prior to initiating construction on any of the items discussed in the enclosed plan modification, all conditions associated with that construction activity must be addressed to the Department's satisfaction. We intend to ask the Department of Justice to seek an injunction halting any unapproved construction begun prior to satisfaction of a condition. All contractors at the site should be provided with a copy of this plan modification as part of their contract documents.

On March 21, 1988 you requested an extension to the closure period of 180 days. The Department will grant a time extension for filling and completion of closure construction activities until November 8, 1988, the federally mandated date by which all disposal facilities must have RCRA equivalent operating license. Once the November 8, 1988 date has past, LRL must complete closure to get back into compliance.

The Department realizes that there is limited time to complete the required construction. We believe that the sequence of construction should be:

1. Containment structure construction,

2. Barrier wall construction,

3. Leachate and gas extraction system construction,

4. Slope stabilization, and

5. RCRA cap construction.

In addition all the Environmental Monitoring and Long-Term Care requirements must also be met.

The plan modification contains numerous items which were not addressed in your submittal. In addition, several items require further submittals prior to implementing closure. We understand that you are anxious to proceed with these closure activities, and therefore, we suggest that you work expeditiously to satisfy our conditions.

Further assistance is available from my staff to meet with you and your consultants during the development of responses to conditions as well as during implementation of the plan modification. Please carefully review the conditions contained in the plan modification and contact Ed Lynch at (608) 266-3084, Dennis Mack at (608) 267-9386, or Ken Hein at (414) 562-9645 should you have questions or desire a meeting.

Sincerely,

Paul P. Didier

Paul P. Didier, P.E., Director
Bureau of Solid & Hazardous Waste

PPD:ED:hf/5215C
Attachments - Plan Modification
cc: Southeast District
Hazardous Waste Management Section - SW/3
Solid Waste Management Section - SW/3
Bureau of Legal Counsel - LC/5
Ron Kazmierczak - SED
Robert Hunter - Wisconsin Department of Justice
Chuck Slaustas - RCRA Permitting - EPA Region V 5HS/13
Glenn Stenard - RCRA Enforcement - EPA Region V 5HE/12
CERCLA Enforcement - EPA Region V 5HE/11
Scott Schreiber - LRL
Joe Muratore - LRL; Attorney
Tim Weyenberg - Foth & Van Dyke
Representative Cloyd Porter - CAPITOL
Representative Jeffery Neubauer - CAPITOL
Senator Joseph Strohl - CAPITOL
Tom Ryan - Foth and Van Dyke - Milwaukee
Program Services Section - SW/3
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine

Table of Contents

Land Reclamation, Ltd. Landfill

Modified Closure and Long-Term Care Plan and
Plan of Operation Approval Modification

	Page
General Information	1
Major Department Concerns	4
Regulatory Status	8
Findings of Fact	9
Conclusions of Law	12
Modifications to the Closure and Long Term Care Plan and Plan of Operation Approval	13
Conditions	13
A. General	13
B. Barrier Wall	15
C. Containment Structure	18
D. Final Cover System	21
E. Slope Stabilization	24
F. Landfill Gas and Leachate Extraction System	25
G. Environmental Monitoring and Long-Term Care	28
H. Financial Responsibility	34
I. Construction Documentation	35
J. Soil Specifications and Testing	36
Notification of Appeals Rights	37
Attachments - List of Insurance Companies	
- Groundwater Monitoring Reporting	

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

MODIFIED CLOSURE AND LONG-TERM CARE PLAN AND PLAN OF OPERATION APPROVAL MODIFICATION LAND RECLAMATION LIMITED LANDFILL (0572) WID 076171008

GENERAL INFORMATION

Authorized Contact: Mr. Scott Schreiber, Vice President-Operations
Land Reclamation Limited (LRL)
2250 South Green Bay Road
Racine, Wisconsin 53406
Telephone: 414/554-0560

Property Owner: Land Reclamation Ltd.
Mr. Glenn A. Oakes, President

Site Operator: Land Reclamation Ltd.

Person Responsible for Daily Site Operations: Mr. Scott Schreiber

Location of Site: The Land Reclamation Limited Landfill is located in the S 1/2 of the NE 1/4 of Section 23, T4N, R22E, Town of Mount Pleasant, Racine County, Wisconsin. This property was recently annexed by the City of Racine. In general terms, the site is located approximately 3/4 of a mile south of Highway 20 and 1/4 of a mile west of Highway 31 (Green Bay Road).

Report Prepared by:

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(414) 463-9160

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Foth & Van Dyke and Associates, Inc.
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Site Description: LRL was first licensed as a solid waste disposal facility in 1970 and began operation at that time. The current licensed acreage is 81 acres and includes corridors 1 through 13. The hazardous waste management unit (HWU) consists of corridors 1 through 6 and is roughly 36 acres in size. This modified plan covers the closure and long-term care of the hazardous waste unit as required by the Department's interim license denial of December 10, 1982 as well as ch. NR 181, Wis. Adm. Code, the federal Resource Conservation and Recovery Act (RCRA) requirements and certain conditions included in the Department's December 19, 1984 ch. NR 180, Wis. Adm. Code, Conditional Plan of Operation Approval.

Hazardous wastes were disposed of at the site from sometime prior to June 23, 1973 until the Department denied LRL's interim license application for continued disposal of hazardous waste on December 10, 1982. Since denial of the interim license, LRL has continued operation of the site for solid waste disposal and has constructed and filled corridors 5 and 6. Corridor 7 has been partially constructed and filled. Because hazardous waste was disposed of at the site and since LRL did not close in accordance with the interim license denial, it is an active hazardous waste landfill. Due to s. NR 181.12(1)(b)2., Wis. Adm. Code, known as the "mixture rule", all wastes disposed of within the first 6 corridors are hazardous wastes. The total volume of waste disposed of in the hazardous waste unit is approximately 6 million cubic yards. In addition to hazardous waste, material disposed of included residential waste, demolition wastes, nonhazardous commercial and industrial wastes, foundry wastes, asbestos, and tires.

Description of Upper Hydrogeological Units: The unconsolidated materials, consisting of layers of alternating tills and outwash or lacustrine deposits, were deposited as the glaciers made successive advances and retreats over the site area. Though somewhat variable in composition, extent, and thickness, the following scheme is used to delineate the stratigraphy of the upper glacial units at the site. All units dip slightly to the west.

Unit 1: Unit 1, the uppermost unit, consists of clayey till (CL) with an average clay content of 25% and P200 content of 78%. The mean values for liquid limit and plastic index are 22.8 and 7.6, respectively. Horizontal conductivity probably ranges from 1×10^{-7} cm/sec to as high as 1×10^{-5} cm/sec where fracturing occurs. Vertical conductivity has a potential range of 2×10^{-8} cm/sec to 2×10^{-7} cm/sec. Fractures may increase the vertical conductivity 10 to 100 times this range. Unit 1 varies from 0 to 40 feet in thickness and pinches out toward the west.

Unit 2: Unit 2 consists of outwash or lacustrine sediments ranging from silt loam (ML), silty clay loam (CL-ML), sandy loams (SM), and gravelly and silty sands (SP-SM) according to the USCS. This layer is overlain by up to 27 feet of Unit 1 in the eastern portion of the site and outcrops to the west. It varies in thickness from 6 to 27 feet. The range of measured horizontal hydraulic conductivity for the unit is 3.6×10^{-4}cm/sec to 1.8×10^{-6} cm/sec. The horizontal conductivity of this unit is significantly higher than both the till units below (Unit 3) and above (Unit 1). Due to its relatively high conductivity and interconnection with the hazardous waste unit, the highest level of contaminants tend to be present in this unit

Unit 3: Unit 3 consists of fine grained (CL) lacustrine sediments (Unit 3A) and sediment flow deposits or till (CL) (Unit 3B). Unit 3A is made up of 6-8 inch beds of clay having a mean P200 content of 94%, a clay content of 50%, a liquid limit of 35.1% and plastic index of 17.3%. Unit 3B consists of lean clay (CL) with some silty clay (CL-ML) in the upper portion of the unit. Vertical hydraulic conductivity for Unit 3 is in the range of 2×10^{-8} cm/sec to 1×10^{-7} cm/sec. Horizontal conductivity is in the range of 6×10^{-7} cm/sec to 1×10^{-6} cm/sec. The thickness of Unit 3 generally ranges from between 15 to 38 ft., with one boring indicating a thickness of 5 feet.

Unit 4: Unit 4 consists of alternating layers of clay (CL), silt (ML), silty clay (CL-ML) and silty sand (SM). The layers appear to be thin and discontinuous. This unit is more permeable than Units 1 or 3 with one sample giving a horizontal conductivity of 1×10^{-5} cm/sec. The unit ranges from about 12 to 35 feet under the hazardous waste unit but thins northward to less than 4 feet.

Site Construction: Construction activities included as part of this plan modification include:

1. The construction of a separation barrier wall between corridor 6 and corridor 7 to be keyed into the liner of corridor 7 and a separation barrier wall, slurry cutoff wall and drainage trench along the west end of corridors 1 through 6. The purpose of these systems is to separate the hazardous waste unit from adjacent approved nonhazardous waste disposal capacity.

2. The construction of a containment structure along the southern boundary of the site and along the west end of the City of Racine landfill. This containment structure includes excavation of a construction bench and installation of a drainage trench and combination slurry cutoff wall/clay-lined trench. The purpose of this containment structure is to intercept and collect contaminated groundwater prior to its leaving the site.

3. The construction of a RCRA composite cap over the hazardous waste unit and over the southern portion of corridor 7 above the barrier wall. This cap is required to fulfill EPA requirements for closure of the hazardous waste unit.

4. The stabilization of sideslopes along the southern perimeter of corridor 1. This work will include cutting back the slope along corridor 1 to a maximum slope of 3 horizontal to 1 vertical (3:1). An alternative to this is extending the toe of the slope outward in order to achieve a 3:1 slope. Documentation of adequate closure of the hazardous waste unit's east slope is also required.

5. The installation of a more extensive leachate and gas extraction system.

Other Actions Covered by this Plan Modification:

1. Environmental Monitoring: An environmental monitoring program which includes applicable portions of Chs. NR 500 through 520 and NR 181, Wis. Adm. Code, monitoring networks, and sampling activities to assess groundwater quality around the hazardous waste unit. This environmental monitoring program has been expanded to include leachate monitoring and surface water monitoring.

2. Financial Responsibility: Obtaining liability insurance coverage for nonsudden occurrences.

Long-term Care Period: Thirty years commencing after Department approval of all construction documentation required for closure of the site and proof is established to the Department's satisfaction that leachate heads have been eliminated and can be prevented from recurring.

Definitions: The terms used in this plan modification are defined below:

1. Barrier Wall. The term "barrier wall", refers to the structure that will separate the existing hazardous waste unit from future contiguous nonhazardous areas used for solid waste disposal. This structure consists of a minimum 7 foot thick clay separation barrier which is keyed into the existing recompacted clay liner of corridor 6 and into the native soils along the perimeter of the hazardous waste unit. It also includes granular drainage layers and leachate collection piping on both sides of the clay barrier. The barrier wall along the western end of the hazardous waste unit also includes a slurry cut off-wall and drainage trench below the compacted clay separation barrier.

2. Containment Structure. The term "containment structure", refers to the structure proposed to be constructed along the southern boundary of the hazardous waste unit and the southern and western sides of the City of Racine site. This structure consists of a trench excavation into unit 1 soils, installation of a two-foot thick bentonite slurry cutoff wall extending from the base of the excavation to a minimum of 3 feet into geologic unit 3 and a drainage trench located at the base of unit 2. The excavation into unit 1 is to be lined with a two-foot thick recompacted clay liner.

3. RCRA Cap. The term "RCRA cap," refers to a composite final cover required by U.S. EPA for the hazardous waste unit. This multi-component cap consists of a recompacted clay layer, a synthetic flexible membrane liner, a drainage layer, a needle punched geotextile, a soil rooting zone and a layer of topsoil. The final cover is to be seeded, fertilized and mulched. The RCRA cap must cover the entire hazardous waste management unit as well as the portions of corridors which lie vertically above the barrier wall. The RCRA cap will cover approximately 27 acres over corridors 1 through 7 and 8.

4. Slope Stabilization. The term "slope stabilization" refers to the requirements necessary to properly close the exterior slopes of the facility in such a manner as to minimize maintenance. As required by chs. NR 180 and NR 181, Wis. Adm. Code, and in past correspondence, this is reflected as a maximum slope of 3 horizontal to 1 vertical (3:1).

5. Drainage Trench. The term "drainage trench" refers to the trench excavation in which a perforated PVC pipe is laid and backfilled with gravel. The drainage trenches are to intercept, collect, and transport contaminated groundwater and leachate.

6. Slurry Cutoff Wall. The term "slurry cutoff wall" refers to the excavation through subsurface permeable soil which is backfilled with a bentonite/soil slurry mixture. The cutoff wall is keyed into underlying clay soils.

MAJOR DEPARTMENT CONCERNS REGARDING PROPOSED PLAN

1. The proposed plan contains faulty design concepts and insufficient detail concerning the placement and construction of the barrier wall, the drainage trench, and the slurry cutoff wall for the western end of the hazardous waste unit. As proposed, the clay barrier for the western end of the hazardous waste unit would terminate in refuse. Such a design is not acceptable because in order to ensure the separation of solid and hazardous waste, the barrier must

be located exterior to the hazardous waste unit and be keyed into native soil. The wastes located to the west of the proposed barrier location in the undefined fill area are by definition hazardous and must be contained in the hazardous waste unit. As a result of these concerns, the Department has imposed in the conditions contained in Section B of this modification.

2. Sufficient information was not provided to allow for proper placement of the drainage trench portion of the containment structure along the south and west sides of the site. The proposed plan shows the drainage trench at various levels within unit 2. In order to achieve acceptable results, the drainage trench must be placed at or very near the base of unit 2 at all locations. These concerns are addressed in the conditions in Section C.

3. Except as otherwise noted in this modification the RCRA cap must be installed over all portions of the hazardous waste unit. This cap, which will cover approximately 27 acres over corridors 1 through 7 and 8, is an integral part of the closure of the hazardous waste unit. Sufficient information was not provided concerning placement or construction of the cap. The Department believes that the cap must consist of a minimum 3-foot thick recompacted clay layer, a flexible membrane liner consisting of 40-mil high density polyethylene (HDPE), a minimum one-foot thick granular drainage layer, a geotextile filter fabric, a minimum 1.5-foot thick root zone layer and a minimum 0.5-foot thick layer of topsoil. The final cover must be seeded, fertilized and mulched. Detailed engineering plans are needed showing the cap configuration itself, how the cap will be penetrated by vents and monitoring devices, how the geosynthetics will be anchored, the method of membrane placement testing, how the drainage layer will be drained, and the aerial extent of the entire RCRA cap.

   The Department is requiring a minimum 3-foot thick recompacted clay component of the cap primarily because the clay material LRL is proposing to use for cap construction does not meet the clay specification dictated in the Department's December 19, 1984 conditional plan of operation approval and because of documented problems associated with proper construction and performance of thin clay layers.

   In addition, the Department is requiring that the flexible membrane liner (FML) consist of high density polyethylene (HDPE) material rather than polyvinyl chloride (PVC). We believe that HDPE is a superior to PVC for several reasons:

   a. PVC compounds contain large amounts of plasticizer additives to make the liner flexible. Over time, the plasticizers are lost possibly resulting in liner deterioration. HDPE contains no plasticizer additives, and therefore, has no loss of flexible properties over time.

   b. A number of penetrations of the landfill cap will be necessary for installation of leachate and gas extraction wells. HDPE can be ordered in smaller sections which can then be custom installed on the site and equipped with various boots and other devices necessary to maintain the integrity of the system.

   c. Rodents (a source of liner deterioration) have been shown to avoid HDPE membranes while being attracted to PVC membranes.

   d. HDPE has superior chemical resistance, strength characteristics and temperature performance than PVC.

e. PVC is sensitive to ultraviolet light while HDPE has a carbon black additive to prevent deterioration from sunlight.

4. Although the issue is not addressed in the proposed closure plan, the landfill's southern sideslope must be stabilized before the site can be considered closed. This belief is based upon observed, persistent problems such as sloughing of the slope, gas and leachate seeps and vegetative stress along the slope. Conditions included in Section E require LRL to develop detailed plans and specifications for this area which either cut back the slope (with all excavated material to be disposed of within the hazardous waste unit) or extend it to the south to obtain a three horizontal to one vertical (3:1) grade.

5. Information contained in the proposed plan regarding environmental monitoring and long-term care is insufficient and confusing. Plan sheet C-21 is not of sufficient scale to be able to clearly read or delineate all of the environmental monitoring points. Groundwater monitoring wells, leachate head wells and landfill gas extraction wells cannot be clearly read and some are mislabelled. For instance, 3 wells are labeled as "LH32". In addition, the design management zone delineation obscures many of the labels for monitoring points. A new plan sheet or plan sheets drawn to a scale of 1" = 100' clearly showing and correctly labeling all monitoring and extraction points is necessary. Conditions found in Section G address these concerns.

6. As a result of changes to RCRA, LRL is responsible for complying with the groundwater monitoring requirements set forth in s. NR 181.49(6), Wis. Adm. Code for new facilities. During interim status monitoring, LRL has reported statistically significant increases over background for indicator parameters at several wells at the site. Therefore, LRL must sample the groundwater monitoring wells for all constituents identified in Table VI of s. NR 181.16(4), Wis. Adm. Code, and establish a compliance monitoring program as required by s. NR 181.49(6)(j), Wis. Adm. Code. This sampling must be done in an accelerated fashion of taking samples for 4 consecutive months rather than quarterly samples. These numbers will be used to establish background values and concentration limits. Additional analysis of indicator, health and welfare parameters is also required to allow for their statistical evaluation at this hydrogeologically complex site. Conditions found in Section G address these concerns.

7. As indicated on plan sheet C-21 and Appendix I, very significant leachate head levels exist within the hazardous waste unit. In some portions of the site, heads are in excess of 750' MSL. This is roughly 50 feet above the adjacent topography and 70 feet above the underlying landfill base. The elevated leachate levels in the hazardous waste unit are in part responsible for groundwater contamination in geologic unit 2.

   Section NR 181.42(8) and (9), Wis. Adm. Code, cover closure and long-term care of hazardous waste facilities which in turn require compliance with ss. NR 181.44(12) and (14), Wis. Adm. Code, specifically describing closure and long-term care of hazardous waste landfills. Other requirements are incorporated by reference. Requirements specified in these sections include:

   a. Control, minimization or elimination to the extent necessary to protect human health and the environment, post-closure escape of wastes, hazardous waste leachate or waste decomposition products to groundwater (NR 181.42(8)(a)2.).

b. Installation of a leachate monitoring system to provide accurate measurements of leachate levels and a means of obtaining representative samples. Leachate level elevations must be measured at least monthly and each time a sample is taken (NR 181.49(4)(b) and (e)).

c. A long-term care plan complying with the monitoring and reporting requirements found in subchapter V, Ch. NR 181, Wis. Adm. Code (NR 181.42(9)(b)1.) and quarterly reports on the amount of leachate extracted (hazardous waste) are required (NR 181.42(6)(a)).

d. Maintenance and monitoring of the waste containment systems and drainage control features. Also required are measures needed to correct contamination caused by leachate and gases generated within the landfill and any other maintenance features necessary to protect the environment and prevent hazards to human health (NR 181.42(9)(b)4.).

The leachate collection and extraction program discussed in the closure plan does not comply with these code requirements. Conditions included in Section F address these concerns.

8. The existing landfill gas extraction system was installed without Department approval, and its construction has never been properly documented. The partial documentation which has been submitted clearly shows the implementation of unacceptable design concepts. Furthermore, the existing system covers only a portion of the approved landfill area. As indicated in point number 7 above, landfill gas concerns are an integral portion of the closure and long-term care of the hazardous waste unit and the solid waste unit as well. Conditions contained in Section F also address these concerns.

9. As a hazardous waste landfill which has not closed, LRL must provide proof of financial responsibility to ensure compliance with closure and long-term care requirements. In addition, LRL is responsible for obtaining liability coverage for nonsudden accidental occurrences in the amount of $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. These requirements can be found in ss. NR 181.42(10) and (11), Wis. Adm. Code.

The closure and long-term care costs presented in the closure plan are underestimated. LRL did not identify all the activities necessary for closure. Revised cost estimates are necessary and must be based upon the cost of closing the landfill in accordance with the conditions of this modified hazardous waste closure and long-term care plan and solid waste plan modification. All actions called for in the closure plan are necessary for the facility to properly close. The Department's position on closure costs was supported by a circuit court decision issued on October 6, 1987. The long-term care portion of the landfill cost estimate must also be covered by the proof mechanism.

LRL's argument that the company will be in existence indefinitely is not sufficient to waive administrative code requirements. In addition, LRL has frequently commented in discussions with the Department that, if the Department does not allow certain actions, the site will have to close.

Not having liability insurance is a significant violation of state and federal requirements making LRL a high priority violator. As such, this violation must be corrected. Conditions included in the Section H address these concerns.

10. Conditions from previous actions that have not been complied with are listed in the Findings of Facts and involve the December 10, 1982 hazardous waste interim license denial and the December 19, 1984 ch. NR 180 Wis. Adm. Code conditional plan of operation approval. These actions cover:

    a. Stabilization of sideslopes,

    b. Reduction of leachate heads,

    c. Submittal of detailed plans for a slurry cutoff wall, and

    d. Submittal of annual reports.

Each of these concerns have been addressed by the Department in this plan modification.

REGULATORY STATUS AS A SOLID AND HAZARDOUS WASTE FACILITY

1. Land Reclamation, Ltd. (LRL) owns and operates a solid and hazardous waste disposal facility in the Town of Mount Pleasant, Racine County, Wisconsin which was initially licensed by the Department of Natural Resources on April 20, 1970.

2. LRL initially reported that toxic and hazardous waste was being disposed of at the facility in their landfill license renewal application dated June 23, 1973.

3. On May 16, 1975 the Department conditionally reissued LRL's 1974-75 operations license to allow acceptance of toxic and hazardous waste.

4. LRL submitted a Federal Resource Conservation and Recovery Act (RCRA) Notification Form to U.S. EPA on August 18, 1980, and a RCRA Part A Application on November 19, 1980 to U.S. EPA for the purpose of obtaining "Interim Status" from U.S. EPA to continue to dispose of hazardous waste at their landfill. U.S. EPA subsequently granted interim status, and LRL continued to accept hazardous waste.

5. On January 8, 1982 the Department issued a ch. NR 180, Wis. Adm. Code determination of feasibility for LRL which, in part, required development and implementation of additional engineering to reverse outward gradients along the southern border of corridor #1 and the southwest corner of the site.

6. The Department reviewed LRL's RCRA Part A Application and other related material and determined that the landfill was not eligible for an interim license under ch. NR 181, Wis. Adm. Code. The interim license was denied on December 10, 1982 based on the absence of sufficient information and detail in LRL's request. This denial required, among other things, that closure be implemented for corridors 1 through 4, and that closure was to include:

    a. Filling the existing hazardous waste disposal trench to approved grades, and covering and contouring the waste in order to minimize surface water run-on and runoff by January 1, 1983,

    b. Cutting back the outside slopes of corridors 1 through 4 by May 1, 1983, if the slopes were not adequately vegetated and stabilized by that date.

    c. Filling Corridors 1 through 4 to approved final grades and abandoning them with final clay cover, topsoil and seed by June 1, 1983.

7. U.S. EPA "called in" LRL's RCRA Part B permit application on February 7, 1983. LRL responded to U.S. EPA in a letter dated August 5, 1983, by stating that LRL had "decided not to pursue, at this time, a federal permit or state license to operate a hazardous waste landfill", and that the Part B permit application would not be filed. This letter also stated that nonhazardous waste was still being placed in corridors 1 through 4 and that these corridors would be closed when final grades, according to the ch. NR 180 Wis. Adm. Code, Plan of Operation, were reached.

8. A Conditional Plan of Operation Approval for the facility was issued by the Department under ch. NR 180, Wis. Adm. Code, on December 19, 1984. This conditional plan approval allowed LRL to continue to operate a solid waste landfill. The plan of operation conditions required, among other things, that LRL;

   a. Document slope stabilization,
   b. Reduce leachate heads,
   c. Design and construct a slurry cutoff wall,
   d. Submit annual reports on landfill operation, and
   e. Establish financial responsibility.

9. On January 28, 1987, the Department received a report from LRL entitled "Closure and Long-Term Care Plan for the Land Reclamation, Ltd., Landfill" prepared by Foth and Van Dyke and Associates of Milwaukee, Wisconsin. On July 8, 1987, the Department denied LRL's Closure and Long-Term Care Plan and required that a modified plan be submitted in accordance with s. NR 181.41(8)(d), Wis. Adm. Code.

FINDINGS OF FACT

The Department finds that:

1. On August 10, 1987, LRL submitted a modified ch. NR 181, Wis. Adm. Code, Closure and Long-Term Care Plan for the hazardous waste unit at the LRL landfill. This plan was submitted in response to the Department's July 8, 1987 denial of their January 28, 1987 ch. NR 181, Wis. Adm. Code, proposed Closure and Long-Term Care Plan.

2. The LRL landfill has not been constructed in accordance with the December 19, 1984 ch. NR 180, Wis. Adm. Code, Conditional Plan of Operation Approval. Conditions included in that approval have not been complied with.

3. LRL has not provided a plan for addressing the stability of the southern sideslopes as required by Condition 21 of the December 19, 1984 conditional ch. NR 180, Wis. Adm. Code, Plan of Operation Approval. Stabilization of sideslopes is necessary for proper closure.

4. LRL has not conducted the leachate head reduction activities or prepared the reports called for in Conditions 23 and 35 of the December 19, 1984 conditional ch. NR 180, Wis. Adm. Code, Plan of Operation Approval. LRL has not established an effective leachate reduction program. Reduction of the leachate head is necessary to minimize the leachate and contaminated groundwater from moving off site.

5. LRL has not provided detailed plans and specifications for a slurry cut off wall as required in Condition 32 of the December 19, 1984 conditional ch. NR 180, Wis. Adm. Code, Plan of Operation Approval. The plans for the containment structure included in the Closure and Long-Term Care Plan do not satisfy this condition. Sufficient information was not provided to allow for proper placement of the drainage trench portion of the containment structures. Construction of the slurry cutoff wall is necessary to prevent the existing groundwater contamination from moving further off-site and to prevent future contamination from moving off-site.

6. LRL has not provided the annual reports on waste handling, leachate head reduction and remedial action effectiveness as required by Condition 36 of the December 19, 1984 ch. NR 180, Wis. Adm. Code, Plan of Operation Approval.

7. LRL has not demonstrated financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operation of their landfill as required by s. NR 181.42(11), Wis. Adm. Code.

8. On April 17, 1987, the Department provided LRL with detailed comments on their gas collection system and outlined areas where further work was needed. The closure plan submittal does not address these concerns.

9. The Department public noticed the January 28, 1987 closure plan submittal in the Racine Journal Times on Monday February 16, 1987 in accordance with s. NR 181.42(8), Wis. Adm. Code. No comments were received.

10. The Closure and Long-Term Care Plan as submitted on August 10, 1987 is inadequate in the following respects:

    a. Conditions called for in the ch. NR 180, Wis. Adm. Code, Conditional Plan of Operation Approval necessary to ensure proper closure are not included in the closure plan submittal.

    b. Faulty design concepts and insufficient detail exist concerning placement and construction of the barrier wall, drainage trench and slurry cutoff wall along the western end of the hazardous waste unit.

    c. Sufficient information was not provided concerning the design, placement and construction of the RCRA cap.

    d. Sufficient information was not provided on leachate monitoring, gas monitoring and long-term care.

    e. Requirements in ss. NR 181.42, .44 and .49, Wis. Adm. Code, have not been complied with.

11. The containment structure, as proposed in the closure plan submittal, constitutes an expansion of a solid waste disposal facility under applicable sections of chs. NR 500 through 520 Wis. Adm. Code. The Department has sent numerous letters and held meetings with LRL on this issue. Filling must take place within approved licensed acreage.

12. LRL has not complied with groundwater monitoring requirements found in applicable sections of chs. NR 500 through 520 and 181, Wis. Adm. Code for solid and hazardous waste facilities. Section NR 181.49, Wis. Adm. Code, requires groundwater monitoring for all hazardous waste disposal facilities. Section NR 181.49(6)(j), Wis. Adm. Code, includes compliance monitoring requirements for all facilities which have reported statistically significant increases in parameters being monitored. LRL has had statistically significant increases in groundwater monitoring parameters. The Code of Federal Regulations, Title 40, Part 264, Subpart F requires facilities which accepted hazardous waste after July 26, 1982 to be in compliance monitoring when statistically significant increases are detected. LRL accepted hazardous waste until December, 1982.

13. Gas migration from the landfill is occurring along the south sideslope. Levels of methane above its lower explosive limit have been detected in monitoring devices located outside the limits of fill.

14. On July 8, 1987, the Department denied LRL's January 28, 1987 closure plan submittal and required a modified plan be submitted within 30 days in accordance with s. NR 181.42(8)(d), Wis. Adm. Code. The basis for denial included:

    a. The plan constituted an expansion of a hazardous waste landfill,

    b. The containment structure did not satisfy conditions 32 and 33 of the December 19, 1984 Plan of Operation Approval, and

    c. The plan did not meet groundwater monitoring requirements found in s. NR 181.49, Wis. Adm. Code.

15. Submittals reviewed as part of this plan review include:

    a. An August 28, 1987 LRL letter verifying design changes to engineering details contained in LRL's August 21, 1987 cover letter.

    b. The Closure and Long-Term Care Plan cover letter from Land Reclamation, Ltd. dated August 21, 1987 and received by the Department on August 25, 1987.

    c. A two-volume report and 35 associated plan sheets dated August, 1987 entitled "Revised Closure and Long-Term Care plan for the: Land Reclamation, Ltd. Landfill", which were prepared by Foth and Van Dyke, and received by the Department on August 10, 1987.

    d. A two-volume report and 21 associated plan sheets dated January, 1987 entitled "Closure and Long-Term Care plan for the Land Reclamation, Ltd. Landfill", prepared by Foth and Van Dyke, and received by the Department on January 28, 1987.

    e. A cover letter and report dated February 5, 1988, prepared by Foth and Van Dyke & Associates of Milwaukee providing comments on the Department's Draft Modification to the Closure and Long-Term Care Plan and Plan of Operation Approval dated December 16, 1987.

16. Department and related correspondence/documents considered in review of the Closure and Long-Term Care Plan include:

    a. The Department's December 10, 1982 Interim License Denial.

    b. The Department's December 19, 1984 Conditional Plan of Operation Approval.

    c. The Department's February 12, 1986 letter discussing "Option 3".

    d. The Department's November 26, 1986 letter informing LRL of hazardous waste closure requirements.

    e. The Department's October 30, 1986 Containment Structure Denial.

    f. The Department's July 8, 1987 Closure and Long-Term Care Plan Denial.

    g. Other Department correspondence to LRL dated January 15, 1988, April 17, 1987, October 30, 1986, October 13, 1986, August 13, 1986, and related file material.

    h. U.S. EPA letters and memoranda dated February 7, 1983, April 18, 1986, September 19, 1986, October 23, 1986, November 13, 1986 and November 14, 1986.

    i. The applicable requirements of chs. NR 500 through 520, NR 180, NR 140, and NR 181, Wis. Adm. Code.

    j. U.S. EPA-RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September, 1986).

17. The Modifications to the Closure and Long-Term Care Plan and Plan of Operation Approval are hereby defined to consist of Foth & Van Dyke, Inc.'s August, 1987 two-volume report and 35 associated plan sheets entitled "Revised Closure and Long-Term Care Plan for the Land Reclamation, Ltd. Landfill WID 076171008" and all conditions contained in this document. Unless the conditions set forth below are complied with, the facility poses a substantial hazard to public health and welfare.

CONCLUSIONS OF LAW

1. Land Reclamation, Ltd. (LRL) is an existing solid waste disposal facility as defined in ss. 144.43(5), Stats. and an existing hazardous waste facility as defined in s. 144.61(5m), Stats., and a hazardous waste landfill as defined in s. NR 181.04(55), Wis. Adm. Code.

2. Based upon the foregoing Findings of Fact, the Department has the authority pursuant to s. 144.44(3), Stats., to modify the Plan of Operation Approval for the LRL landfill.

3. The Department has the authority to determine closure, long-term care and termination standards for hazardous waste facilities pursuant to ss. 144.441(1m) and 144.62(8)(e), Stats. These requirements are listed in ss. NR 181.42(8) and (9) and 181.44(12) and (14) and 181.49, and 181.52, Wis. Adm. Code.

4. Characteristic hazardous wastes as defined in s. NR 181.15, Wis. Adm. Code and listed hazardous wastes as defined in s. NR 181.16, Wis. Adm. Code have been disposed of at LRL's facility. Hazardous waste means any solid waste identified by the Department as hazardous under s. 144.62(2), Stats., and is defined in s. NR 181.12, Wis. Adm. Code. Included in this definition is s. NR 181.12(1)(b)2., Wis. Adm. Code, which identifies mixtures of solid wastes and hazardous wastes listed is s. NR 181.17, Wis. Adm. Code, as hazardous waste. Both solid waste and listed hazardous waste have been disposed of at LRL.

5. The Department has the authority to issue an interim license pursuant to s. 144.64(2)(c), Stats., to a person who operates a hazardous waste facility in existence on November 19, 1980, if the person applies for a license and complies with conditions and restrictions prescribed by rule or special order by the Department pending the decision on the issuance of a final operating license. LRL's interim license application was denied by the Department on December 10, 1982. That denial required LRL to close the hazardous waste area in existence at that time. LRL has not closed the hazardous waste area.

6. LRL does not have an approved plan of operation to operate a hazardous waste disposal facility pursuant to s. 144.44(3), Stats. and s. NR 181.44(7), Wis. Adm. Code, and consequently is a nonapproved hazardous waste disposal facility.

7. The Department has the authority to approve or modify a closure plan pursuant to s. NR 181.42(8)(d), Wis. Adm. Code once it has been initially denied and revised.

8. The conditions contained in the Modification to the Closure and Long-Term Care Plan and Plan of Operation Approval are needed to ensure compliance with the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Code.

9. The Department has the authority pursuant to ch. NR 140, the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Code, to require sampling of groundwater, evaluate impacts to the groundwater and to require remedial measures where groundwater standards are attained or exceeded.

MODIFICATION TO THE CLOSURE AND LONG TERM CARE PLAN AND PLAN OF OPERATION APPROVAL

Based on the foregoing Findings of Fact and Conclusions of Law, the Department hereby modifies the Closure and Long-Term Care Plan for the Land Reclamation, Limited Landfill as set forth in the following conditions. As modified, the Closure and Long-Term Care Plan is hereby approved, and the Plan of Operation for the Land Reclamation, Limited Landfill is hereby modified by the following conditions:

CONDITIONS

A. General

1. All site construction, documentation, closure and post closure activities of the Land Reclamation, Ltd. Landfill - Hazardous Waste Unit (HWU) shall be in accordance with Foth and Van Dykes' August 10, 1987 "Revised Closure and Long-term Care Plan", the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wisconsin Administrative Code, the conditions of this plan modification, and all conditions contained in past approvals. In the

event of any discrepancies, the Department's conditions shall take precedence. Any proposed changes to the plan modification shall be presented to the Department in writing for our review and approval. If the Department believes that these changes are compatible with the proper closure and long-term care of the site, an addendum to this approval will be issued indicating acceptance of those changes. Written Department approval shall be obtained prior to implementation of any changes.

2. A complete copy of the plan modification as defined in the previous condition, shall be retained at the landfill office at all times and shall be used by the individuals responsible for proper operation, closure and long-term care of the hazardous waste unit. Individuals responsible for construction, closure and long-term care shall be informed of all Department conditions. A copy of the plan modification shall be included with all contract or construction documents.

3. All reports and investigations called for in this plan modification shall be prepared by a Professional Engineer registered in the state of Wisconsin in accordance with the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Code. In order to avoid continued violations of previous approvals, LRL shall submit all reports and investigations called for in this plan modification no later than the dates stated herein. LRL shall not initiate construction until appropriate plans have been approved in writing by the Department. LRL shall complete construction of all aspects of this plan modification within a schedule approved by the Department.

4. LRL shall submit all overdue construction documentation including:

   a. The final cover system for the eastern sideslope.

   b. The leachate drainage system around the City of Racine site and west side of corridors 1 through 5 installed in 1986.

   c. Corridor 5 east leachate cleanout.

   d. Construction of the eastern sidewalls for corridors 5 & 6.

   e. The interim sanitary sewer connection as approved on November 4, 1985.

   f. All other outstanding documentation including well information forms.

5. All construction shall be performed under the observation of a competent on-site inspector under the direction and immediate supervision of an independent professional engineer registered in the state of Wisconsin. A specific inspector shall be provided and assigned to each major construction item. The inspectors shall not be an employee of LRL, any of its sister corporations, or of the contractor. Within 30 days of the beginning of each major construction item, the inspector's identity and employment history shall be provided to the Department. Each inspector shall be familiar with all technical aspects of the job being overseen and have related work experience in the specific area they are inspecting. Inspectors shall prepare daily reports for each day that construction is

attempted or accomplished at the site. The reports shall describe construction practices employed and work accomplished. Drawings shall be prepared daily to outline and record construction progress. A copy of all daily construction reports prepared by the inspector shall be submitted with each construction documentation report.

6. All plan submittals made as a result of the conditions included in this plan modification shall include, at a minimum, the following:

   a. A cover letter detailing the desired Department action along with the appropriate review fee.

   b. Five copies of all reports, plans and specifications.

   c. The seal of professional engineer registered in the State of Wisconsin. Reports where interpretation of geology or hydrogeology is necessary shall be signed by a hydrogeologist.

   d. A table of contents listing all sections of the submittal.

   e. Maps, figures, tables, plan sheets, drawings, cross sections and aerial photographs meeting the applicable requirements of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Code.

B. Barrier Wall

1. LRL shall submit by June 30, 1988, for the Department's review and approval a revised barrier wall design. The submittal shall consist of a bound report and associated engineering drawings which, in addition to an in-depth presentation of the revised design and supporting rationale, shall also include:

   a. An identification and thorough discussion of all construction tasks associated with establishment of the barrier wall and their phasing, as well as a proposed time schedule for completion of each task.

   b. A proposed comprehensive construction documentation program for the barrier wall.

   c. An identification of all elements of a proposed construction documentation report for the barrier wall to be submitted for our review and approval.

2. The proposed revised barrier wall design shall incorporate the following concepts:

   a. Design of the portion of the barrier wall separating corridors 6 and 7 as per figure 3-1 of Volume 1 of Foth and Van Dyke's August, 1987 "Revised Closure and Long-Term Care Plan".

   b. Design of the slurry cutoff wall and drainage trench components of the western segment of the barrier wall as per the requirements contained in Section C of this plan modification.

c. Location of the base of the western segment of the barrier wall either to the west of the existing hazardous waste unit, or where existing waste thicknesses outside of the hazardous waste unit are determined to be at a minimum. In either case, the base of the barrier wall shall be keyed into native soils.

d. Removal of any hazardous waste remaining between the city site and the chosen western barrier wall location and placement of this waste within the hazardous waste unit.

e. Alignment of the western segment of the barrier wall as well as its cutoff wall and drainage trench components in a general north-south direction with a minimum number of changes in direction.

f. Design of the barrier wall system such that it minimizes penetrations of the barrier wall and the slurry cutoff wall by any type of piping or other appurtenances. Any penetrations shall be specially designed and detailed.

g. A barrier wall slope no milder than 5 horizontal to 1 vertical (5:1). The thickness of the barrier must consider settlement.

3. The lower portion of the western barrier wall, which would extend through existing waste, may be proposed to be constructed vertically provided that:

a. A minimum width of 8 feet is maintained,

b. Maximum lift thicknesses do not exceed 8-inches prior to compaction (compaction equipment must be specified),

c. The clay barrier wall is keyed a minimum of 3-feet into unit 3,

d. The vertical barrier wall segment is keyed into the barrier wall extending up the western sideslope of the hazardous waste unit,

e. The western barrier wall extends the entire distance from the containment structure to the northern barrier wall and recompacted clay base liner.

f. Sufficient design details are provided at the barrier wall interface with the containment structure, the northern barrier wall, unit 3, the barrier wall on the western slope and the drainage structure,

g. Safety concerns necessary to protect the equipment operators are fully considered in the design, and

h. Contingency mechanisms to reduce odor problems caused by the excavations are proposed.

4. The following specific information shall be included as part of the design submittal for the barrier wall:

a. The results of a more-extensive boring program conducted to clearly establish either the western extent of waste or the areas where waste thicknesses are at a minimum. The borings shall be performed on a 75-foot grid pattern (minimum 3 borings per east-west cross section) within the area defined by site coordinates: 1+30N/7+50E, 5+00N/7+50E, 9+50N/7+00E, 10+00N/11+00E, 9+00N/11+00E, 8+00N/9+00E and 1+30N/9+00E. Each boring shall extend a minimum of 5 feet into unit 3 or 5 feet below the waste, whichever is deeper. Detailed logs of each boring shall be included along with cross sections drawn every 300 feet perpendicular to the western perimeter of the waste. At least two cross sections shall be drawn every 75 feet parallel to the western perimeter of the waste.

b. Quantification of the volume of waste which must be removed from the western perimeter of the hazardous waste unit and placed within the hazardous waste unit, as well as proposed procedures for excavating and transporting the waste. The proposed areas of the hazardous waste unit which would receive this waste shall also be identified.

c. A through discussion of how all components of the barrier wall would be constructed with particular emphasis given to the sealing of any penetrations of the barrier wall.

d. Engineering drawings of the following type:

   i. Cross sectional drawings both along the barrier wall and perpendicular to it which show the location and elevation of the clay barrier, the drainage piping, the slurry cutoff wall and all lift stations and clean out manholes. The drawings running perpendicular to the barrier wall shall be prepared on no greater than 300-foot intervals. Boring log locations and interpretation of hydrogeology shall be included on the cross sections.

   ii. Plan view drawing(s) showing the items detailed immediately above.

e. Tables on each engineering drawing detailing:

   i. The amounts and types of materials which must be excavated in order to accomplish the construction shown on the plan sheet.

   ii. The amounts and types of materials necessary for the construction shown on the plan sheet.

f. Detail drawings of:

   i. Each manhole and lift station.

   ii. Each location where the barrier wall is penetrated.

   iii. Each location where the slurry wall intersects the barrier wall on any other recompacted clay layers.

iv. The connection of the barrier wall to the RCRA cap.

v. The connection of the barrier wall to native clay soils and to the clay liner of corridor 7.

vi. Other details as necessary.

C. Containment Structure

1. LRL shall submit by June 30, 1988, for the Department's review and approval a revised containment structure design. This submittal may be combined with that for the barrier wall. Nevertheless, it shall consist of a bound report and associated engineering drawings which, in addition to an in-depth presentation of the revised design and supporting rationale, shall also include:

   a. An identification and thorough discussion of all construction tasks associated with establishment of the containment structure, as well as a proposed time schedule for completion of each task.

   b. A proposed comprehensive construction documentation program for the containment structure.

   c. An identification of all elements of a proposed construction documentation report for the containment structure to be submitted for our review and approval.

2. The revised containment structure design shall incorporate the following concepts:

   a. Choice of the containment structure location and elevations based upon the supplemental boring program specified in condition 4 below.

   b. Location of the base of the drainage trench at the bottom of geologic unit 2. If necessary, the trench may be extended a maximum of 3 feet into unit 3. The drainage pipe shall not be positioned greater than 2 feet above unit 3.

   c. Gravity flow within the drainage trench piping and placement of lift stations wherever needed to maintain the specified drainage pipe grade. Discharge from each lift station shall be through nonperforated piping for the entire distance to the sanitary sewer.

   d. Design of the slurry cutoff wall component of the containment structure as a homogeneous barrier containing no discontinuities. Special consideration shall be given to the design and construction of the area where the slurry cutoff wall of the containment structure meets the north-south slurry wall associated with the barrier wall. No piping or other appurtenances shall penetrate the containment structure's slurry cutoff wall.

e. Perforated drainage trench piping of sufficient size to handle the maximum possible flows within geologic unit 2 as well as the strength to withstand the substantial earth load it will be under. The piping shall be bedded in gravel throughout, and the gravel shall be extended to the top of unit 2.

f. Placement of manholes with internal cleanout risers at each significant change in direction or elevation of the drainage trench piping. Cleanout risers shall be placed at least every 700 feet. Manholes shall be constructed containing all cleanout risers if select material is placed in the trench. Specific details on all types of cleanouts shall be provided.

g. Keying of the slurry wall a minimum of 3 feet into geologic unit 3 or 3 feet below the base of the drainage trench, whichever is lower.

h. Construction of a recompacted clay liner on the south side of excavation trench and keying of the base of this liner into the top of the slurry wall.

i. Backfilling of the excavation trench with properly compacted clean soil to be placed in maximum 1-foot lift heights, unless all provisions of condition 3 below are met.

j. Testing of all soils removed in the establishment of the construction bench for volatile organic compounds and determination of the fate of these soils based upon the results of the testing.

3. Alternative material to clean soil may be used in backfilling the containment structure trench, provided that the following requirements are met:

a. The material used shall consist only of broken concrete, brick, asphalt or building stones all of which is entirely free of organic material (i.e. wood, brush, etc) and contains no particles larger than 3 inches.

b. This material shall not be filled against the hazardous waste unit.

c. This material shall be placed only on licensed acreage.

d. A plan sheet showing the licensed acreage and property lines as they existed in the December 19, 1984 Plan of Operation Approval and the limits of fill shall be provided.

e. This material shall be placed in loose lift heights not to exceed 12 inches and the compacted between each lift.

f. Any area filled by this material shall be covered by a cap meeting the requirements of the December 19, 1984 Plan of Operation Approval.

g. A protective layer of at least 6 inches of sand shall be placed over the clay base of the fill area.

h. A filter layer shall be provided between the final fill and the clay cap material. This filter may be a geotextile or 6-inches of appropriately sized sand to establish a graded filter.

i. Use of this material shall not delay final closure of the landfill. If necessary, backfilling shall be completed with clean soil as detailed in condition C.2.i shall be done.

4. The following specific information shall be included as part of the design submittal for the containment structure:

a. The results of a supplemental boring program performed to better define the extent of geologic unit 2. Additional borings shall be performed between the following boring locations: 76 and 77, 77 and 78, 85, and B30, B30 and 86, and 90 and 91. Each boring shall extend a minimum of 5 feet into unit 3. Detailed logs of each boring shall be included along with cross-sectional drawings. The boring location and hydrogeological interpretation of the soils shall be included on the cross sections.

b. A detailed proposal for lowering the hydraulic heads in unit 2 prior to and during establishment of the construction bench in order to prevent uplift conditions from developing.

c. A proposed soil sampling program to determine the level of contamination, if any, existing in the soils to be excavated in order to establish the construction bench. The program shall specify the proposed method of testing, the type of equipment to be used, and the testing frequency.

Unless otherwise demonstrated to the Department's satisfaction, soils with total volatile organic compound (VOC) concentrations greater than or equal to 10.0 ppm shall be disposed of within the hazardous waste unit. Soils with total VOC concentrations between 1.0 ppm and 10.0 ppm may be disposed of within corridor 7. Soils containing an organic compound at a concentration that attains or exceeds its ch. NR 140, Wis. Adm. Code, Preventive Action Limit or containing total VOC concentrations in excess of 1.0 ppm shall not be used for liner construction.

Note: No filling may occur in the hazardous waste unit after November 8, 1988.

d. All information regarding slurry wall design and construction required in conditions 32 and 33 of the Department's December 19, 1984 conditional plan of operation approval.

e. Engineering drawings of the following type:

i. Cross sectional drawings both along the containment structure and perpendicular to it which show the location and elevations of the construction bench, clay liner, extent of unit 2, slurry cutoff wall, drainage trench, and all lift stations and cleanout manholes. The drawings running perpendicular to the containment structure shall be prepared on no greater than 300-foot intervals and shall also include final grades.

ii. Plan view drawing(s) showing the items detailed immediately above as well as all property lines, permanent roads and utilities. The drawing(s) shall also identify monitoring wells which may need to be abandoned, and shall propose locations for replacement wells.

f. Tables on each engineering drawing detailing the amounts of each material which must be excavated and the amounts and types of each material necessary for construction.

g. Detail drawings of each manhole and lift station.

h. A proposed method of field determining the interface of Unit 1 and Unit 2 and the interface of Unit 2 and Unit 3 during construction shall be provided. Protocols for documenting and reporting this data shall be provided.

D. Final Cover System - RCRA Cap

1. LRL shall submit by July 29, 1988, for the Department's review and approval a detailed design of the final cover system for the hazardous waste unit. The submittal shall consist of a bound report and associated engineering drawings which, in addition to an in-depth presentation of the revised design and supporting rationale shall also include:

   a. An identification and detailed discussion of all construction tasks associated with the the final cover system and their phasing, as well as a proposed time schedule for completion of each task.

   b. A proposed comprehensive construction documentation program for the final cover system.

   c. An identification of all elements of a proposed construction documentation report for the final cover system to be submitted for our review and approval.

2. The revised final cover system design shall incorporate the following concepts and d tails:

   a. A recompacted clay component with a minimum thickness of 3 feet which meets all specifications found in Section J.

   b. A 40-mil or thicker high density polyethylene (HDPE) liner. Any penetrations of the HDPE liner shall be specifically designed and detailed.

   c. A minimum 1-foot thick drainage layer.

   d. Rooting zone and topsoil layers having minimum thicknesses of 18 inches and 6 inches, respectively.

   e. A nonwoven, needle-punched geosynthetic material placed between the FML and the drainage layer and between the drainage layer and the rooting zone.

f. Efficient removal of water from the drainage layer. Methods to prevent erosion from points of discharge shall be included.

g. Design of the cover system such that a failure rate of the FML is recognized.

h. The final cover system design extending over corridor 7 and the western end of the hazardous waste unit to the extent necessary to cover the barrier wall.

i. Final waste grades consistent with those approved in the Department's December 19, 1984 conditional plan of operation approval. Where waste elevations exceed approved grades, the waste shall be cut back to approved grades. Where waste elevations are less than the approved grades, waste/fill material shall be used to attain the approved grades prior to placement of the final cover system.

3. The following specific information shall be included as part of the design submittal:

a. Complete soil quality and density testing results in accordance with s. NR 516.05(1), Wis. Adm. Code (or condition 54 of the Department's December 19, 1984 plan of operation approval, if previously performed), should any portions of the existing clay cap be proposed for use as part of the revised final cover system. Unless otherwise demonstrated to the Department's satisfaction, the upper 2 feet of existing clay shall be proposed to be removed due to concerns regarding freeze/thaw and dessication.

b. Quantification of the volume of in-place clay which must be removed as well as of the volume of clay which must be placed. Clay which can no longer be utilized as cap material because it does not meet the required specifications shall also be quantified. Procedures for excavating and placing clay material shall be addressed. The source of new clay material and the deposition site of unacceptable clay material shall be identified.

c. A thorough discussion on how all components of the cover system would be constructed with particular emphasis given to the sealing of any penetration of the final cover.

d. Engineering drawings of the following type:

i. Cross sectional drawings at no greater than 500-foot intervals in both the north-south and east-west directions of the final cover system. These drawings shall show the location and elevation of the extent of waste filling, the elevation of the top of the clay component and final elevation of the cover system. Estimated quantities of material needed and waste capacity remaining shall be noted.

ii. Plan view drawing(s) showing the items detailed above as well as:

1) The entire extent of the final cover, including corridor 7 and the western end of the hazardous waste unit with construction schedules for specific phases identified.

2) All drainage structures and piping.

3) Each location where the final cover is penetrated.

e. Detailed specifications for all material necessary for construction including soils, earthwork, geosynthetics and piping.

f. Tables on each engineering drawing detailing:

i. The amount and types of material which must be excavated in order to prepare the hazardous waste unit for construction shown on the plan sheet.

ii. The amount and types of materials necessary for the construction shown on the plan sheet.

g. Calculations justifying the size of the piping system necessary to dewater the drainage layer.

h. Detail drawings of:

i. The layered final cover system itself.

ii. Each penetration of the final cover system.

iii. The FML and geotextile anchoring system.

iv. The drainage layer dewatering system including the discharge system to the storm water basins.

v. The connection of the final cover to:

1) The barrier wall.

2) The existing and proposed sideslopes.

3) Future areas where this final cover system is not required.

4. LRL shall contract with an HDPE manufacturer to prepare detailed plans and specifications regarding the FML component of the cap. These plans shall specifically address FML installation, anchoring, seaming, penetration, venting and quality assurance. These plans and specifications shall be included with the design submittal specified in the previous condition.

E. Slope Stabilization

1. LRL shall submit by June 30, 1988 for the Department's review and approval a plan for stabilization of the sideslope located along the southern boundary of the hazardous waste unit. This plan shall call for either cutting back or extending the sideslope. The submittal shall consist of a bound report and associated engineering drawings which, in addition to an in-depth presentation of the selected design and supporting rationale, shall also include:

   a. An identification and detailed discussion of all construction tasks and their phasing, as well as a proposed time schedule for completion of each task.

   b. A proposed comprehensive construction documentation program for the slope stabilization project.

   c. An identification of all elements of a proposed construction documentation report to be submitted for our review and approval.

2. The proposed design for the slope stabilization project shall incorporate the following concepts:

   a. Final grades for the south slope shall be a maximum of three horizontal to one vertical (3:1).

   b. If the sideslopes are cut back, all excess material shall be disposed of within the hazardous waste unit, and a RCRA cap shall be placed over the cutback area.

   c. If the sideslopes are extended, the material necessary to bring the slope to final grades shall be clean earthern materials. A cap, as approved in the December 19, 1984 conditional plan of operation approval, shall be constructed over this material.

   d. The south slope cover shall be designed such that it is an integral part of the RCRA cap and containment structure. Special design consideration shall be given to transition areas.

   e. In order to minimize erosion, at least one surface water diversion berm (and associated downslope flumes) shall be proposed along the slope.

3. The following specific information shall be included as part of the design submittal for the slope stabilization project:

   a. If the sideslopes are cut back, quantification of the volume of waste which must be removed from the existing sideslopes of the landfill and placed within the hazardous waste unit, as well as proposed procedures for excavating and transporting the waste. Particular emphasis shall be given to the handling of previously accepted asbestos wastes and how safety concerns would be addressed. The proposed areas of the hazardous waste unit which will receive this waste shall also be identified.

b. If the sideslopes are extended, quantification of the volume of earthern material which must be placed above the existing sideslo as well as the proposed procedures for placing and transporting th material. The borrow source of the material shall be identified.

c. Engineering drawings of the following type:

i. North-south cross sectional drawings which show the location and elevation of the existing sideslope, the proposed sideslope, the appropriate cap, and all surface water diversion berms. The cross sections shall be prepared on no greater than 300 foot intervals.

ii. Plan view drawing(s) showing the items detailed above.

d. Tables on each engineering drawing detailing the amounts and types of material which must be excavated or placed necessary for the construction shown on each plan sheet.

e. Detail drawings of:

i. The connection of the sideslope cap to the RCRA cap (extension option only).

ii. The connection of the sideslope cap to the containment structure.

iii. Each location where the sideslope final cover system is penetrated.

F. Landfill Gas and Leachate Extraction Systems

1. LRL shall submit by July 29, 1988 for the Department's review and approval a proposed design for a combination gas and leachate extraction system for corridors 1 through 4. The design shall also provide for active gas extraction in all other approved corridors. The submittal shall consist of a bound report and associated engineering drawings which, in addition to an in-depth presentation of the chosen design and supporting rationale, shall also include:

a. An identification and thorough discussion of all construction tasks and their phasing, as well as a proposed time schedule for completion of each task.

b. A proposed comprehensive construction documentation program for the gas and leachate extraction system.

c. An identification of all elements of a proposed construction documentation report to be submitted for our review and approval.

d. A detailed proposal for operation, monitoring and regular maintenance of all aspects of the gas and leachate extraction system. This shall include a method of documenting the observed areas of influence for each gas and leachate point.

2. The proposed design for the landfill gas and leachate extraction system shall incorporate the following concepts:

a. Extension of all extraction wells to the base of the refuse. If, at any locations, the base of the refuse is not clearly documented, the wells shall be proposed to be extended to elevation 650 feet MSL in corridors 1, 2 or 3 and to 640 feet in MSL in corridor 4. Unless otherwise demonstrated to our satisfaction, the well borings shall be a minimum of 36 inches in diameter and the well casing shall be 12-inch diameter Schedule 80 or 120 PVC slotted over the lower two-thirds of its length. Geophysical logging of each boring shall be proposed in order to differentiate between refuse and clay cover and to determine the saturated thickness of refuse.

b. Overlapping radiuses of influences for all extraction wells and coverage of the entire approved landfill area. Unless otherwise demonstrated to our satisfaction, the combination gas and leachate extraction wells for corridors 1 through 4 shall be located based upon a maximum assumed horizontal radius of influence of 75 feet for each well and the gas extraction wells for all remaining approved corridors shall be located based upon a maximum assumed radius of influence of 150 feet for each well. Horizontal extraction wells may only be proposed for areas immediately beneath the barrier wall. The submersible pumps to be placed in each extraction well in corridors 1 through 4 shall be proposed to activate whenever a leachate head of no greater than 3 feet accumulates within the well.

c. Location of all header piping for gas and leachate above the synthetic membrane element of the final cover system wherever possible. No portion of the header systems shall be located greater than 7 feet below the final landfill surface. All header piping shall be appropriately sized high-density polyethylene (HDPE). Repair of the FML shall be specifically discussed in the long-term care plan.

d. Convenient performance of the following procedures from the final landfill surface:

   i. Measurement of vacuum levels and gas concentrations at each extraction well and in header line sections immediately adjacent to each extraction well.

   ii. Gas flow rate adjustment at each extraction well.

   iii. Accurate measurement of gas flow rates and concentrations in at least every major branch of the extraction system.

   iv. Measurement of leachate head levels and leachate extraction rates from each extraction well in corridors 1 through 4.

e. Collection of all condensate produced by the gas extraction system and treatment of the condensate as a hazardous waste. The current drip leg/pumping riser design is unacceptable. In addition, routing of condensate to perforated leachate collection piping shall not be proposed.

f. Provisions for secondary containment and leak detection in any condensate or leachate storage tanks which prove to be necessary. Each tank shall also be sized to provide a minimum of 4-days storage at worst-case condensate or leachate extraction rates.

g. Continued operation of both the gas and leachate extraction systems until the end of the required long-term care period.

h. Incineration of all landfill gas extracted in an environmentally acceptable fashion. Venting of any quantities of landfill gas is not an acceptable management strategy. In order to provide backup incineration capacity for periods when industrial gas usage is reduced or nonexistent, an on-site flare station, or stations, shall be proposed which shall be capable of incinerating all landfill gas which could possibly be produced by the entire approved facility. The design of the flare station(s) shall also fully address aesthetic impacts and shall attempt to limit them to the greatest extent possible. (If necessary, the Department will allow the details of the flare station(s) design to be delayed until December 1, 1988. However, the location(s) must be identified in the submittal required in this section.)

i. Protection of all aspects of the gas and leachate extraction system from vandalism.

3. The following specific information shall be included as part of the design submittal for the landfill gas and leachate extraction system:

a. A plan view drawing and cross sections every 300 feet (both north-south and east-west) showing the base grades of all previously filled corridors. These drawings shall be prepared using all available information (including the borings required in this plan modification) and shall be as detailed as possible. All references used in preparation of the map shall be clearly identified. If estimates of base grade elevations are necessary at any locations, the rationale behind the estimates shall be given.

b. A safety plan identifying all precautions and procedures to be followed when the gas system is out of operation or not functioning as designed. The plan shall also identify all design features incorporated to minimize the system's down time.

c. Accurate as-built information on the existing gas extraction system as per the Department's April 17, 1987 letter and a through assessment of whether any portions of this system are suitable for incorporation into the larger system.

d. Calculations justifying the size and strength of all extraction well and header piping.

e. Calculations justifying the size and type of the chosen gas blower and flare station(s).

f. Calculations justifying the sizes and types of submersible pumps chosen for the extraction wells and the sizes of any leachate or condensate storage tanks.

g. Location and design of each leachate and gas extraction well and of each leachate and gas monitoring well, including all leachate head monitoring wells.

6. Environmental Monitoring and Long-term Care

1. LRL shall submit by May 2, 1988, a revised plan sheet C-21 clearly delineating all environmental monitoring points. Groundwater monitoring wells, leachate head wells and landfill gas wells shall be clearly marked and legible. The new plan sheet or plan sheets shall be drawn to a scale of 1" = 200' clearly showing and correctly labeling all monitoring and extraction points and submitted within 30 days of the date of this letter. This map or an attachment shall give coordinates to all ch. NR 181, Wis. Adm. Code, monitoring wells. The wells in this compliance monitoring plan shall be as listed in the condition G.4. The wells shall be labelled and differentiated into NR 181, special NR 508, or NR 508 categories as described below.

2. LRL shall submit a plan for monitoring the performance of the containment structure with the containment structure submittal required in Section C of this plan modification. This submittal shall meet the following requirements.

a. Pairs of piezometers competed in the bottom of Unit 2 shall be placed such that one piezometer is on each side of the containment structure and both are within 50 feet of the structure.

b. The piezometer pairs shall be spaced no farther than 500 feet between pairs along the length of all containment or dewatering structures to be constructed at the site, with exception of the structures to be constructed between the hazardous waste unit and the former City of Racine site. In this last area, 3 piezometer nest locations shall be established within 100 feet of a line segment with end points of 2+70N, 8+30E and 7+30N, 8+30E. No piezometer nest location shall be within 100 feet of another. Two piezometers, one screened in the bottom of Unit 2 and one screened in Unit 4, shall be constructed at the three locations. All piezometer locations shall be west of the barrier wall. LRL shall submit piezometer design specifications and procedures to the Department for approval by May 2, 1988, which will ensure cross-contamination of Unit 4 from Units 2 and 3 will not occur during the construction of the Unit 4 piezometer. This approval is required prior to the construction of these piezometers. The piezometer locations shall be designated 143, 144, and 145 with a U or L letter added to designate the Unit 2 or Unit 4 position respectively.

c. All boring logs and well completion data shall be reported to the Department.

d. Piezometer groundwater measurements shall be conducted as specified in condition G.4. utilizing the sampling protocol for the NR 508 well group unless specified elsewhere in this modification.

3. Abandonment of borings and monitoring devices shall be conducted in accordance with condition 8 of the December 19, 1984, conditional Plan of Operation Approval with the Department's well construction guidelines. Efforts shall be made to maintain the existing groundwater monitoring network around the site. LRL shall submit a report that identifies all existing wells which will need to be abandoned as part of the closure. The report shall also identify additional wells to be located south and west of the containment structure in order to monitor its performance. A replacement well shall be constructed for each well abandoned. A plan sheet specifying which wells will be abandoned as well as the location of the replacement well shall be provided with the containment structure submittal requested in section C of this plan modification. Department approval must be received prior to abandoning any wells.

Groundwater Monitoring

4. LRL shall establish and maintain a comprehensive groundwater monitoring program as required by s. NR 181.49 and ch. NR 508, Wis. Adm. Code. Groundwater monitoring wells shall be monitored for water quality both upgradient and downgradient of the site. The water table unit (unit 1) and the underlying sandy/silty units (units 2 and 4) shall be included. The groundwater shall be monitored according to the protocols specified for each of the following well groupings:

NR 181 Wells

Steiner Well (026)[1]
110T
17T (042)
109T (092)
18+30E, 0+40N [134T][2]
4+15E, 0+20N [135T]
23+40E, 1+00N [141T]
9+25, 0+80N [140T]
1+50W, 6+50N [22T]

23+40E, 1+00N [141U]
9+25E, 0+80N [140U]
5U (061)
109U (093)
135U
22U (085)
40U (086)
1110U (084)
13AU
6U (082)
146U[4]

Special NR 508 Wells

60T
120T
5T (054)

120U
14U (034)
108U
2+30W, 4+10N [142U]
5U (061)
29U (069)
17U (043)

14L
5L (062)
6L (090)
22L (060)
108L (083)
18L (047)
109L (094)
40L (087)
29L (070)
30L (072)
110L
17L (044)

NR 508 Wells

14T (033)	3U (053)	22M (059)	4L (089)
18T (045)	44 (088)	30M (071)	10L (063)
30T (067)	10U (022)		143L[5]
3T (068)	11U (023)		144L[5]
29T (066)	9U (021)		145L[5]
7T	39U (073)		14L (035)
108T	18U (046)		
6T (007)	19U (049)[3]		RS1[6]
8T (017)	143U[5]		RS2[6]
19T (048)[4]	144U[5]		
	145U[5]		

Notes

[1] (000) denotes DNR well ID.

[2] [000] denotes existing piezometer nest location.

[3] Water elevation only.

[4] Well 146U to be completed in bottom of Unit 2 between borings 73 and 74 (2+80E, 0+50N) outside of containment structures.

[5] Wells to be installed per condition G.2.b. Analysis shall include quantification of detected base/neutral and acid extractable organic compounds. These wells are to be sampled such that a minimum of 8 quality assured rounds over a minimum one year period are obtained. Sampling shall then continue quarterly until abandonment is required.

[6] RS1 and RS2 are leachate head wells at the former City of Racine Landfill site which shall be located at 3+40E, 5+90N, and 4+70E, 3+50N, respectively. The reported well construction must document that the wells are screened at the base of the site. Analysis shall include quantification of detected base/neutral and acid extractable organic compounds.

The following sampling protocols shall be used for each group of wells:

NR 181 Wells

The NR 181 well group shall be sampled for the constituents of Table VI of s. NR 181.16(4), Wis. Adm. Code as is required by s. NR 181.49(6)(i)8.b., Wis. Adm. Code. This sampling shall be done in an accelerated fashion by sampling monthly for 4 consecutive months instead of 4 quarterly measurements. These numbers will be used to establish background values and concentration limits. Parameters of Table VI which are detected in the first sampling round shall be measured in all wells in the three remaining sampling rounds. The sampling results shall be reported to the Department by September 15, 1988.

The following indicator parameters shall also be measured in the NR 181 wells during eight consecutive months and quarterly thereafter:

field conductivity	chloride
field pH	sodium
field temperature	potassium
water elevation	dissolved iron
COD	sulfate
alkalinity total	VOC
hardness	
phenol	

The physical appearance of the water sample, including color, odor and turbidity, shall be recorded at the time of sampling of each monitoring point.

The following health and public welfare parameters shall also be measured in the NR 181 wells during the eight consecutive months of sampling and annually thereafter:

copper (dissolved)	chromium (dissolved)
manganese (dissolved)	lead (dissolved)
total dissolved solids	mercury (dissolved)
zinc (dissolved)	selenium (dissolved)
arsenic (dissolved)	silver (dissolved)
barium (dissolved)	Endrin, Lindane, Methoxychlor,
fluoride	Toxaphene
nitrate and nitrite (as N)	2,4-D,
	2,4,5-TP (Silvex)

LRL may obtain an exemption from dioxin analysis if representative leachate samples from eight leachate head wells show no dioxin upon analysis. Six of the samples must be from Corridors 1, 2, 3, and 4, and two must be from the required Racine site head wells.

If all of the first four monthly health and public welfare analyses for a specific well and parameter are found to be less than the NR 140 preventative action limit then further analysis of that parameter at that well may be discontinued.

Special NR 508 Wells

The special NR 508 wells shall be sampled according to the same NR 181 protocol above as is required for the indicator and health and public welfare parameters. Additionally, only those Table VI constituents detected in the NR 181 sampling groundwater analysis will be required to be analyzed for the Special NR 508 wells. These added analyses shall be made on a quarterly basis.

NR 508 Wells

The NR 508 wells shall be sampled in the same manner as the Special NR 508 wells above except analysis of Table VI constituents is not required.

Boring logs, well completion reports, and well information forms (WIFs) for wells required for construction in condition G.4. shall be submitted by May 31, 1988.

Documentation for wells 143U, 144U, 145U, 143L, 144L and 145L shall be submitted by June 30, 1988.

5. LRL shall submit annual monitoring reports as required by s. NR 181.49(6)(j)6, Wis. Adm. Code.

6. LRL shall monitor all ch. NR 181, Wis. Adm. Code, monitoring wells listed in Condition G.4. for all Table VI constituents detected on a quarterly basis and compare them to background values determined by the Department. If a groundwater protection standard or concentration limit (NR 181.49(6)(d)) is exceeded, then LRL must notify the Department and propose a corrective action program. Groundwater monitoring results shall also be compared to all ch. NR 140, Wis. Adm. Code, groundwater standards and exceedances reported to the Department.

7. A revised combined chs. NR 181 and NR 508, Wis. Adm. Code, groundwater monitoring plan reflecting these conditions, the conditions listed below, and the requirements of ss. NR 181.49(6) and NR 508, Wis. Adm. Code, must be submitted by May 31, 1988.

8. Samples collected for dissolved metals analyses shall be filtered and preserved in the field immediately after withdrawing the sample.

9. The diagrams included for typical well construction (Figures 5-1 and 5-2) are inconsistent with previous well construction information received from LRL and are inconsistent with the well logs found in the appendix of the closure plan. Water table wells should not be sealed above the screen and piezometers should be. These well construction diagrams shall be checked and corrections made where appropriate.

10. Water levels shall be measured to the nearest 0.01 foot.

11. Field blanks shall be taken every 20 samples or at a minimum one per sampling event.

12. Sample bottles shall not be rinsed with sample water. Bottles shall be properly prepared in the lab prior to sampling.

13. For any monitoring points not specified above, LRL shall continue to conduct ch. NR 508, Wis. Adm. Code, groundwater monitoring in accordance with the December 19, 1984 Plan of Operation Approval. The sampling protocol of any such wells shall be that of the NR 508 well group described above.

14. All groundwater monitoring wells required by this approval shall have in-field hydraulic conductivity tests performed and the results reported with the well boring and construction documentation. Any existing groundwater monitoring wells without in-field conductivity measurements shall also be tested and the results shall accompany the monitoring plan required in G.7.

Leachate and Containment System Drainage Monitoring

15. LRL shall submit a leachate monitoring plan by August 1, 1988. The plan shall contain the following minimum components:

a. Description and plan location of each monitoring point.

b. Utilize all leachate extraction wells required in this approval located in Corridors 1, 2, 3, or 4 as points for monitoring leachate head elevation and quality. Extraction well pumps shall be turned off for 24 hours prior to the elevation measurements at the head wells to be measured.

c. Propose locations for monitoring leachate head elevations and quality for Corridors 5, 6, and 7.

d. Include existing leachate head well monitoring points for Corridors 1, 2, 3, and 4 for both leachate elevation and equality until new leachate extraction wells are operational, and continue monitoring the existing head wells for elevation after the new wells are installed.

e. Monitor leachate head monitoring well levels monthly and whenever a sample is taken. Monitor leachate extraction well head levels quarterly.

f. Include all leachate and containment system drainage manholes and lift stations as leachate quality monitoring points.

g. All leachate and drainage system water quality monitoring points shall be sampled according to the following protocol.

i) Semiannually for:

field conductivity	phenol
field pH	Chloride
Field temperature	Sodium
COD	Potassium
Alkalinity (total)	Iron (total)
Hardness	VOC's*

ii) Annually for:

Copper (total)	Nitrate
Manganese (total)	Lead (total)
Zinc (total)	Mercury (total)
Arsenic (total)	Selenium (total)
Barium (total)	Silver (total)
Fluoride	

Endrin, Lindane, Methoxychlor, Toxaphene, 2,4-D, 2,4,5-TP (Silvex), quantification of base/neutral and acid extractible organic compounds**

*The VOC analysis shall be done using a gas chromatograph/mass spectrometer in accordance with SW846 method 8240 or EPA wastewater method 624. As an alternative, the VOC analysis may be performed using a gas chromatograph/photoionization detector/hall detector in accordance with SW948 methods 8010/8020 or EPA wastewater methods 601/602.

**EPA wastewater analytical protocol 625. Compounds must be identified and quantified where possible.

Surface Water Monitoring

16. LRL shall submit a surface water monitoring plan to update the present sampling program by August 1, 1988. The plan shall contain the following minimum components:

    A description of the routing and magnitude of water flow.

    a. Description and plan location of each monitoring point.

    b. A sampling of parameter list which includes as a minimum: field conductivity, field pH, field temperature, total suspended solids, BOD_5, nitrate-nitrogen, chloride, sodium, sulfate, and potassium.

    c. Water elevations measured by permanent staff gauges.

17. LRL shall evaluate its monitoring data collection system and determine if the monitoring data normally transmitted through the turn around documents (TAD) can instead be reformatted and transmitted using a computer disk or tape. An information package is enclosed which should allow this type of transmittal. A printout of the data shall be enclosed with the tape or disk and the TAD shall also be filled out and reported for the first two quarters of data to ensure the Department can read the disk or tape. The procedures of the above condition shall be incorporated in the monitoring plan required in G.7.

Long Term Care Plan

18. The long-term care plan does not provide sufficient detail on what actions LRL will take once a problem is discovered. A revised long-term care plan shall be submitted by August 15, 1988, which includes a specific inspection checklist and identifies specific actions that LRL will take once a problem is found.

H. Financial Responsibility

LRL shall provide proof of financial responsibility to ensure compliance with hazardous waste closure requirements. In addition, LRL shall obtain liability coverage for nonsudden accidental occurrences in the amount of $3 million per occurrence with an annual aggregate of at least $6 million, exclusion of legal defense costs (ss. NR 181.42(10) and (11), Wis. Adm. Code).

1. No later than August 15, 1988 LRL shall submit revised and detailed closure costs for the hazardous waste unit which are in addition to those items covered in the Department's December 19, 1984 conditional plan of operation approval. The major closure item areas which shall be included are the entire barrier wall including the cutoff wall and drainage system on the west end of the hazardous waste unit; additions to the containment structure; the flexible membrane liner, geotextile and drain layer of the RCRA cap; and leachate/gas extraction system. Cost estimates for each major area listed above shall include materials, equipment and labor, engineering services and construction certification for field work and reporting.

   Unit costs upheld by the Racine County Circuit Court decision dated October 6, 1987 shall be used after being inflated to 1988 dollars. Standard cost estimate based on the Dodge Guide to Public Works and Heavy Construction Costs published by McGraw-Hill, Incorporated, and/or Building Construction Cost Data published by Robert Snow Means Company Incorporated or other independent third party cost estimates shall be used when items are not included in the court decision.

2. No later than August 15, 1988 LRL shall submit revised and detailed long-term care costs for the hazardous waste unit which are in addition to the long-term care items covered in the 1984 conditional plan of operation approval. The major long-term care areas include leachate head pumping and maintenance, gas withdrawal and maintenance; additional leachate and gas condensate treatment; increased groundwater and gas monitoring; leachate line cleaning; and other long-term care items required as a result of this plan modification.

   Unit cost for long-term care items shall be consistent with the previous condition, where applicable, including presenting the costs in 1988 dollars. A 30-year long-term care period shall be used and this long-term care period shall begin once all construction documentation required for closure of the entire site is approved and proof is established to the Department's satisfaction that leachate heads have been eliminated and can be prevented from recurring.

3. LRL shall immediately obtain liability insurance coverage for nonsudden accidental occurrences in the amount of $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. A listing of companies which have sold liability insurance is attached. Documentation of coverage shall be provided by June 1, 1988.

I. Construction Documentation

Construction documentation reports shall be completed and submitted for the Department's review and approval following construction of each major phase of closure. These include the barrier wall, the contaminant structure, the cap, leachate gas extraction systems. These reports shall comply with the minimum standards for solid waste facilities in effect of the time of the submittal.

J. Soil Specifications and Testing Requirements

1. Clay. All clay used for lining and capping purposes shall meet the following specifications:

Classification:	CL or CH under the Unified Soil Classification System
Thickness:	Minimum of 3 feet for the cap Minimum of 7 feet for the barrier wall
Permeability:	Less than or equal to 1×10^{-7} cm/sec.
Liquid Limit:	27% or greater
Plasticity Index:	12% or greater
Compaction:	95% standard Proctor
Grain Size:	P200 Content of 50% by weight or greater Clay Content of 25% by weight or greater

Lifts may not exceed 8 inches in height prior to compaction unless otherwise approved by the Department.

2. Drainage Material. A representative sample of the material being used for the sand drainage blanket shall be tested once very 1000 yd^3 or 1000 linear feet of trench for grain size down to the #200 sieve. The P200 content of this material shall not exceed 5% by weight. In addition, five permeability tests per corridor or five permeability tests per 1000 linear feet of trench shall be performed to document that the permeability is 5×10^{-3} cm/sec. or greater at 90% standard Proctor density.

3. Topsoil and Seed Mixture. Documentation testing of topsoil, seed, fertilizer and mulch placement shall consist of the following:

   a. One grab sample of topsoil per acre shall be analyzed for soil pH and classified under the USDA soil classification system.

   b. Verification of thickness on a 100-foot grid pattern.

   c. The amount and type of fertilizer, seed and mulch used per acre.

   d. A short narrative which explains how the seed bed was prepared and a summary of how placement of the seed, fertilizer and mulch were accomplished.

   e. A series of 35 mm slides or color prints which document the work.

4. Documentation testing shall be included with each construction documentation report.

NOTIFICATION OF APPEALS RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin Statutes and Administrative rules provide time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to Sections 227.52 and Sections 227.53, Wisconsin Statutes, you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for a judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to Section 227.48(2), Statutes.

Dated: MAR 31 1988.

Department of Natural Resources
For the Secretary.

Paul P. Didier

Paul P. Didier, P.E., Director
Bureau of Solid and Hazardous Waste

Edward K. Lynch

Edward K. Lynch, P.E.
Hazardous Waste Management Section

Dennis Mack

Dennis Mack, P.E.
Solid Waste Management Section

Ken Wade

Ken Wade, Hydrogeologist, C.P. G.S.
Solid Waste Management Section

Attachments: Insurance Companies
Groundwater Monitoring Reporting

5215C
3/31/88

Attachment I

Pollution Liability Insurance Companies

American Home Assurance Company
70 Pine Street
7th Floor
New York, New York 10270
Todd Cunningham
(212) 770-7000
Member, American International Group

American Mutual Liability Insurance Company
Quannapowitt Parkway
Wakefield, Massachusetts 01880
Mr. Svehla, Vice President - Underwriting
(617) 245-6000
Member, PLIA

Amerisure Insurance Company
28 West Adams Avenue
Detroit, Michigan 48226
Ed Foley
(313) 965-8600
Member, PLIA

Employers Mutual Casualty Co.
717 Mulberry Street
P.O. Box 712
Des Moines, Iowa 50303-0712
Home Office Underwriting
(515) 280-2511
Member, PLIA

International Insurance Company
c/o Crum & Forster Corporation
305 Madison Avenue
Morris Township, New Jersey 07960
Jim Hill, Vice President
(201) 953-3153
Member, Crum & Forster Insurance Companies

Liberty Mutual Insurance Companies
175 Berkley Street
Boston, Massachusetts 02117
John W. Purkis, Vice President
(617) 357-9500
Member, PLIA

National Union Fire Insurance Company
70 Pine Street
New York, New York 10270
Mark Vuono, Manger
Pollution Legal Liability Dept.
(212) 770-7000
Member, American International Group

St. Paul Surplus Lines Insurance Company
445 Minnesota Street
Suite 900
St. Paul, Minnesota 55101
Kay Scott
(612) 228-8979
Member, Swett & Crawford

Travels Insurance Company
One Tower Square - 10MN
Hartford, Connecticut 06183-4030
Thomas A. Jackson, Secretary
(203) 277-2867

U.S. Fire Insurance Company
211 Mounty Airy Road
P.O. Box 0558
Basking Ridge, New Jersey 07920
Bill Spataro
(201) 953-3153
Member, Crum & Forster Insurance Companies

Wausau Insurance Companies
2000 Westwood Drive
Wausau, Wisconsin 54401
Dick Rice
(715) 845-5211
Member, PLIA

PLIA - Pollution Liability Insurance Association

Other sources of insurance may also be available. Premiums for these policies may be expensive. Expense is not a basis for not having insurance.

ATTACHMENT II

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

File Ref:

Thank you for your interest in providing groundwater monitoring data on electronic media. This packet of materials will provide the information you need to prepare your data in a format we can use. If you have questions about reporting your data, please contact Pat Jesse at (608) 267-7550. If you have questions about your monitoring requirements, sampling techniques or other technical issues related to groundwater monitoring, please contact your DNR district or area office.

The following documents are attached:

Attachment 1 - Record Layout

Whether you submit a tape or diskette, the data must be in ASCII format and in the layout indicated in Attachment 1. You must use the well identification number DNR has assigned to your wells and DNR's parameter codes. The well names can be found on your Turnaround Document (TAD).
A list of parameter codes is in Attachment 3.

Attachment 2 - Sample Record Layout

Attachment 3 - Parameter Codes List

You must use our parameter codes. We are in the process of converting our parameter codes to STORET (the parameter coding system used by EPA and many labs.) Some of our codes are currently STORET, the others soon will be. We encourage you, your contractor and lab to use STORET codes.

Note that information sometimes written on the TAD as comments (e.g., well frozen, well broken, color, odor, turbidity, etc.) may be coded using a parameter code. This is important because the record layout does not provide a place for comments. Please use the parameter codes to transmit this comment type information to us.

Note: Other comments you may wish to make and the name of the person taking the sample should be put in a cover letter.

Attachment 4 - Certification Statement

This signed, dated statement must accompany each data submittal. As you will note, you must also provide with each submittal a hardcopy printout of the data on the electronic media.

It is important we continue to receive your groundwater monitoring data in a timely and accurate fashion. Therefore, please continue to submit TAD's for the next two reporting periods along with the data on tape or diskette. When we are certain we are able to read the data from your electronic media, TAD submittal will no longer be required.

ATTACHMENT 1

FORMAT FOR GROUNDWATER MONITORING RECORDS

COL 1	6	
COL 2-4	LEAVE BLANK	
COL 5-9	LICENSE NO.	
COL 10-12	DNR'S WELL ID NO.	
COL 13-17	DNR'S PARAMETER NO.	
COL 18-23	SAMPLE DATE (YYMMDD)	
COL 24-25	SERIES (01)	
COL 26	BACKGROUND	1=TRUE 2=NOT TRUE
COL 27	AGENCY	1=FACILITY 2=DNR
COL 28	TYPE	1=REGULAR 2=SPLIT
COL 29	< OR > OR BLANK	
COL 30-40	VALUE	FORMAT: 9(6)v9(5) There are 6 digits to the left and 5 digits to the right of assumed decimal point. DO NOT enter decimal point. This field must be all numeric or completely blank, no partial filling.
COL 41-126	BLANK	
COL 127-137	0010592GM01	
COL 138-159	BLANK IN ALL BUT THE LAST RECORD. IN THE LAST RECORD, THIS FIELD CONTAINS THE LAB IDENTIFICATION NUMBER (SEE ATTACHED EXAMPLE).	

Data must be in ASCII format.

ATTACHMENT 2

PANEL NAME = ISREDDE MESSAGE NAME = ISRE108

```
1   EDIT ---- DHR.E508.SWTAD ---------- COLUMNS 001 072 ---------- COLUMNS 088 159
2   COMMAND ===>                        SCROLL ===> CSR             SCROLL ===> CSR
3   000905 8  02966035000328612020121 1 24302900000                 0010
4   000906 8  02966035001348612020121 1 00006700000                 0010
5   000907 8  02966035003078612020121 1 00086800000                 0010
6   000908 8  02966035003108612020121 1 00705000000                 0010
7   000909 8  02966038003408612020121 1 00374000000                 0010
8   000910 8  02966035004008612020121 1 00000720000                 0010
9   000911 8  02966038004108612020121 1 00328000000                 0010
10  000912 8  02966035006728612020121 1 00615000000                 0010
11  000913 8  02966036000908612020121 1 00600000000                 0010
12  000914 8  02966035010468612020121 1 00011000000                 0010
13  000915 8  02966038000058612020121 1 00000000000                 0010
14  000916 8  02966037000058612020121 1 00000000000                 0010
15  000917 8  02966038000058612020121 1 00000000000                 0010
16  000918 8  02966039003078612020121 1 00000500000                 0010
17  000919 8  02966039003408612020121 1 00000230000                 0010
18  000920 8  02966038004008612020121 1 00000770000                 0010
19  000921 8  02966039004108612020121 1 00016800000                 0010
20  000922 8  02966038006728612020121 1 00044000000                 0010
21  000923 8  02966039000908612020121 1 00020800000                 0010
22  000924 8  02966039010468612020121 1 00000002000                 0010
23  000925 8  02966039006428612020121 1 00112865000                 0010
24  000926 8                                                        0010                    750040280
```

RECORD DESCRIPTION FOR PRMTBL.DAT DISK

cols 016-020	DNR PARAMETER NUMBER
cols 027-076	PARAMETER LONG NAME
cols 077-088	PARAMETER ABBR 1
cols 089-096	PARAMETER ABBR 2
col 101	DECIMAL PRECISION
cols 102-117	TURNAROUND DOCUMENT APPEARANCE
col 118	NON DETECT POSSIBLE INDICATOR
	-- if 'Y' then it is possible to get NOT DETECTED as a sample result (VOC parameters)

RECORD DESCRIPTION FOR PRMTBL.DAT DISK

cols 016-020	DNR PARAMETER NUMBER
cols 027-076	PARAMETER LONG NAME
cols 077-088	PARAMETER ABBR 1
cols 089-096	PARAMETER ABBR 2
col 101	DECIMAL PRECISION
cols 102-117	TURNAROUND DOCUMENT APPEARANCE
col 118	NON DETECT POSSIBLE INDICATOR
	-- if 'Y' then it is possible to get NOT DETECTED as a sample result (VOC parameters)

The parameter Table can be sent to you on a disk for uploading to your system.

We also provide well name and ID number on a disk file.

ATTACHMENT 3

N59203A GWM PARAMETER CODES - 02/19/88 - ALPHABETICAL ORDERING PAGE: 1

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
34205	ACENAPTH WHL SAMP UG/L	XXXXX.XX	ACENAPTHENE IN WHL WTR SAMPLE (UG/L)	ACENAPTHENE	Y
34200	ACENAPTH WHL SAMP UG/L	XXXXX.XX	ACENAPTHYLENE IN WHL WTR SAMPLE (UG/L)	ACENAPTHYLENE	Y
81552	ACETONE WHL SAMP UG/L	XXXXX.XX	ACETONE IN WHL WTR SAMPLE (UG/L)	ACETONE	Y
76997	ACETONIT WHL SAMP UG/L	XXXXX.XX	ACETONITRILE IN WHL WTR SAMPLE (UG/L)	ACETONITRILE	Y
81553	ACETOPHE WHL SAMP UG/L	XXXXX.XX	ACETOPHENONE IN WHL WTR SAMPLE (UG/L)	ACETOPHENONE	Y
00019	ACETIC ACID MG/L	XXXXXX.X	ACID, ACETIC (MG/L)	ACETIC ACID	
00021	ISOBUTYC ACID MG/L	XX.XXXXX	ACID, ISOBUTYRIC (MG/L)	ISOBUTYRIC ACID	
00022	ISOVALER ACID MG/L	XX.XXXXX	ACID, ISOVALERIC (MG/L)	ISOVALERIC ACID	
00020	PROPIONC ACID MG/L	XX.XXXXX	ACID, PROPIONIC (MG/L)	PROPIONIC ACID	
34210	ACROLEIL WHL SAMP UG/L	XXXXX.XX	ACROLEIN IN WHL WTR SAMPLE (UG/L)	ACROLEIN	Y
34215	ACRYLONI WHL SAMP UG/L	XXXXX.XX	ACRYLONITRILE IN WHL WTR SAMPLE (UG/L)	ACRYLONITRILE	Y
39053	ALDICARB WHL SAMP UG/L	XXXXX.XX	ALDICARB IN WHOLE WATER (UG/L)	ALDICARB	Y
39330	ALDRIN WHL SAMP UG/L	XXXXX.XX	ALDRIN IN WHL WTR SAMPLE (UG/L)	ALDRIN	Y
00071	HCO3 ALK CACO3 MG/L	XXXXXXXX	ALKALINITY, BICARBONATE (MG/L AS CACO3)	ALKALINITY, HCO3	
00067	CO3 ALK CACO3 MG/L	XXXXXXXX	ALKALINITY, CARBONATE (MG/L AS CACO3)	ALKALINITY, CO3	
39036	ALKLNITY CACO3FIL MG/L	XXXXXXXX	ALKALINITY, FILTERED SAMPLE (MG/L AS CACO3)	ALKALINITY, FILT	
00410	TOT ALK CACO3 MG/L	XXXXXXXX	ALKALINITY, TOTAL (MG/L AS CACO3)	ALKALINITY, TOT	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
73505	ALLYL AL WHL SAMP UG/L	XXXXX.XX	ALLYL ALCOHOL IN WHL WTR SAMPLE (UG/L)	ALLYL ALCOHOL	Y
73564	AADMPEA WHL SAMP UG/L	XXXXX.XX	ALPHA,ALPHA-DIMETHYLPHENETHYLAMINE W W S (UG/L)	A,A-DMPEA	Y
00250	ALUMINUM AL,DISS UG/L	XXXX.XXX	ALUMINUM, DISSOLVED (UG/L AS AL)	ALUMINUM, DISS	
00266	ALUMINUM AL,TOTAL UG/L	XXXX.XXX	ALUMINUM, TOTAL (UG/L AS AL)	ALUMINUM, TOT	
00619	UNIONZD NH3-NH3 MG/L	XXXX.XXX	AMMONIA, UNIONIZED PERCENT OF TOT. T-PH CAL (MG/L)	NH3-NH3,UNIONZD%	
77089	ANILINE WHL SAMP UG/L	XXXXX.XX	ANILINE IN WHL WTR SAMPLE (UG/L)	ANILINE	Y
00029	ANTHO-CYANIN MG/L	XXXX.XXX	ANTHOCYANIN (MG/L)	ANTHOCYANIN	
34220	ANTHRACE WHL SAMP UG/L	XXXXX.XX	ANTHRACENE IN WHL WTR SAMPLE (UG/L)	ANTHRACENE	Y
01095	ANTIMONY SB,DISS UG/L	XXXXXXXX	ANTIMONY, DISSOLVED (UG/L AS SB)	ANTIMONY, DISS	
01097	ANTIMONY SB,TOTAL UG/L	XXXXXXXX	ANTIMONY, TOTAL (UG/L AS SB)	ANTIMONY, TOT	
73510	ARAMITE WHL SAMP UG/L	XXXXX.XX	ARAMITE IN WHL WTR SAMPLE (UG/L)	ARAMITE	Y
00070	AROMATIC HYDROXYL MG/L	XX.XXXX	AROMATICS, HYDROXYLATED (MG/L)	AROMTIC HYDROXYL	
01000	ARSENIC AS,DISS UG/L	XXXX.XXX	ARSENIC, DISSOLVED (UG/L AS AS)	ARSENIC, DISS	
01002	ARSENIC AS,TOTAL UG/L	XXXX.XXX	ARSENIC, TOTAL (UG/L AS AS)	ARSENIC, TOT	
00030	ASH TOTAL MG/L	XXXX.XXX	ASH, TOTAL (MG/L)	ASH, TOT	
01005	BARIUM BA,DISS UG/L	XXXX.XXX	BARIUM, DISSOLVED (UG/L AS BA)	BARIUM, DISS	
01007	BARIUM BA,TOTAL UG/L	XXXX.XXX	BARIUM, TOTAL (UG/L AS BA)	BARIUM, TOT	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
00025	BAROM PRESSURE MM OF HG	XXXXX.XX	BAROMETRIC PRESSURE (MM OF HG)	BAROMETRIC PRESS	
34526	BZ(A)ANT WHL SAMP UG/L	XXXXX.XX	BENZ(A)ANTHRACENE IN WHL WTR SAMPLE (UG/L)	BENZANTHRACENE	Y
34030	BENZENE GC-MS MG/L	XXXXX.XX	BENZENE BY GC-MS (MG/L)	BENZENE (GC-MS)	Y
81283	BHC WHL SMPL UG/L	XXXXXX.X	BENZENE HEXACHLORIDE, 6H6CL6. WHL WAT SMPL (UG/L)	BNZ HEXACHLORIDE	
73518	BZTHIOL WHL SAMP UG/L	XXXXX.XX	BENZENETHIOL IN WHL WTR SAMPLE (UG/L)	BENZENETHIOL	Y
39120	BZIDINE WHL SAMP UG/L	XXXXX.XX	BENZIDINE IN WHL WTR SAMPLE (UG/L)	BENZIDINE	Y
34247	BZ(A)PYR WHL SAMP UG/L	XXXXX.XX	BENZO(A)PYRENE IN WHL WTR SAMPLE (UG/L)	BENZO(A)PYRENE	Y
34230	BZ(B)FAN WHL SAMP UG/L	XXXXX.XX	BENZO(B)FLUORANTHENE IN WHL WTR SAMPLE (UG/L)	BENZOFLUORANTHR	Y
34521	BZ(GHI)P WHL SAMP UG/L	XXXXX.XX	BENZO(GHI)PERYLENE IN WHL WTR SAMPLE (UG/L)	BENZO(GHI)PERYLE	Y
34242	BZ(K)FAN WHL SAMP UG/L	XXXXX.XX	BENZO(K)FLUORANTHENE IN WHL WTR SAMPLE (UG/L)	BENZO(K)FLUORANT	Y
77247	BENZOIC WHL SAMP UG/L	XXXXX.XX	BENZOIC ACID IN WHL WTR SAMPLE (UG/L)	BENZOIC ACID	Y
77147	BENZYL A WHL SAMP UG/L	XXXXX.XX	BENZYL ALCOHOL IN WHL WTR SAMPLE (UG/L)	BENZYL ALCOHOL	Y
01010	BERYLIUM BE, DISS UG/L	XXXXX.XX	BERYLLIUM, DISSOLVED (UG/L AS BE)	BERYLLIUM, DISS	
01012	BERYLIUM BE,TOTAL UG/L	XXXXX.XX	BERYLLIUM, TOTAL (UG/L AS BE)	BERYLLIUM, TOT	
00028	BOD 6 DAY MG/L	XXXXXX.X	BIOCHEMICAL OXYGEN DEMAND (MG/L, 6 DAY - 20DEC C)	BOD, 6 DAY	
00310	BOD 5 DAY MG/L	XXXXXX.X	BIOCHEMICAL OXYGEN DEMAND (MG/L, 5 DAY - 20DEG C)	BOD, 5 DAY	
00311	DISS BOD 5 DAY MG/L	XXXXXX.X	BIOCHEMICAL OXYGEN DEMAND, DISSOLVED 5 DAY (MG/L)	DISS BOD, 5 DAY	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
34268	B(CM)ET UG/L	XXXX.XXX	BIS(CHLOROMETHYL) ETHER (UG/L)	BIS(CMTHYL)ETHER	Y
34278	B(2CEO)M WHL SAMP UG/L	XXXXX.XX	BIS(2-CHLOROETHOXY)METHANE IN WHL WTR SAMP (UG/L)	BIS(2CE)METHANE	Y
34273	B(2CE)ET WHL SAMP UG/L	XXXXX.XX	BIS(2-CHLOROETHYL) ETHER IN WHL WTR SAMPLE (UG/L)	BIS(2CE)ETHER	Y
73522	B(2CI)ET WHL SAMP UG/L	XXXXX.XX	BIS(2-CHLOROISOPROPYL) ETHER IN WHL WTR SMP (UG/L)	BIS(2CI)ETHER	Y
39100	B-2-EHPT WHL SMPL UG/L	XXXXX.XX	BIS-2-ETHYLHEXYLPHTHALATE IN WHL WTR SMPL (UG/L)	BIS-2-ETHHEXPHTH	
01020	BORON B,DISS MG/L	XXXX.XXX	BORON, DISSOLVED (MG/L AS B)	BORON, DISS	
01022	BORON B,TOTAL MG/L	XXXX.XXX	BORON, TOTAL (MG/L AS B)	BORON, TOT	
81555	BROMOBEN WHL SAMP UG/L	XXXXX.XX	BROMOBENZENE IN WHL WTR SAMPLE (UG/L)	BROMOBENZENE	Y
32101	BDCM WHL SMPL UG/L	XXXXX.XX	BROMODICHLOROMETHANE IN WHL WATER SAMPLE (UG/L)	BRODICHLMETHANE	Y
34413	BROMOMET WHL SAMP UG/L	XXXXX.XX	BROMOMETHANE IN WHL WTR SAMPLE (UG/L)	BROMOMETHANE	Y
77566	BUBEZPHT WHL SMPL UG/L	XXXXX.XX	BUTYLBENZYLPHTHALATE IN WHOLE WATER SAMPLE (UG/L)	BUTYLBENZPHALATE	
00312	CADMIUM CD,DISS. UG/L	XXXX.XXX	CADMIUM, DISSOLVED (UG/L AS CD)	CADMIUM, DISS	
00120	CADMIUM CD,TOTAL UG/L	XXXX.XXX	CADMIUM, TOTAL (UG/L AS CD)	CADMIUM, TOT	
00915	CALCIUM CA,DISS MG/L	XXXXXX.X	CALCIUM, DISSOLVED (MG/L AS CA)	CALCIUM, DISS	
00916	CALCIUM CA,TOTAL MG/L	XXXXXX.X	CALCIUM, TOTAL (MG/L AS CA)	CALCIUM, TOT	
81405	CRBOFURN WHL SAMP UG/L	XXXX.XXX	CARBOFUREN (FURANDAN) WHOLE WATER SAMPLE (UG/L)	CARBOFUREN	Y
85544	CARBON DIOXIDE %	XXXXXX.X	CARBON DIOXIDE GAS, VOL PERCENT OF DISS. GASES (%)	CO2	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	D E S C R I P T I O N	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
77041	CDS WHL SMPL UG/L	XXXXX.XX	CARBON DISULFIDE IN WHL WATER SAMPLE (UG/L)	CARBON DISULFIDE	Y
32102	CTC WHL SMPL UG/L	XXXXX.XX	CARBON TETRACHLORIDE IN WHOLE WATER SAMPLE (UG/L)	CARBON TET CHLD	Y
00680	T ORG C C MG/L	XXXXXX.X	CARBON, TOTAL ORGANIC (MG/L AS C)	CARBON, TOT ORG	
00445	CO3 ION CO3 MG/L	XXXXXXXX	CARBONATE ION (MG/L AS CO3)	CARBONATE ION	
00340	COD HI LEVEL MG/L	XXXXXX.X	CHEMICAL OXYGEN DEMAND, .25N K2CR2O7 (MG/L)	COD, HI LEVEL	
00341	DISS COD MG/L	XXXXXXXX	CHEMICAL OXYGEN DEMAND, .25N K2CR2O7 (MG/L)	DISS COD	
00307	CHLORIDE CL MG/L	XXXXXXXX	CHLORIDE (MG/L AS CL)	CHLORIDE	
82295	CHLORIDE CL,DISS MG/L	XXXXXXXX	CHLORIDE, DISSOLVED (MG/L AS CL)	CHLORIDE, DISS	
50064	CHLORINE FREE AVL MG/L	XXXXX.XX	CHLORINE, FREE AVAILABLE (MG/L)	CHLORINE,FREE AV	
34301	CHLOROBE WHL SAMP UG/L	XXXXX.XX	CHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	CHLOROBENZENE	Y
39460	CBZILATE WHL SAMP UG/L	XXXXX.XX	CHLOROBENZILATE IN WHL WTR SAMPLE (UG/L)	CHLOROBENZILATE	Y
39350	CHLORODA WHL SAMP UG/L	XXXXX.XX	CHLORODANE IN WHL WTR SAMPLE (UG/L)	CHLORODANE	Y
34306	CDMETHA WHL SAMP UG/L	XXXXX.XX	CHLORODIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)	CHLORODIBROMOMET	Y
34311	CHLOROET WHL SAMP UG/L	XXXXX.XX	CHLOROETHANE IN WHL WTR SAMPLE (UG/L)	CHLOROETHANE	Y
32106	CHLORFRM WHL SMPL UG/L	XXXXX.XX	CHLOROFORM IN WHOLE WATER SAMPLE (UG/L)	CHLOROFORM	Y
34418	CMETHANE WHL SAMP UG/L	XXXXX.XX	CHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	CHLOROMETHANE	Y
00273	CHROMIUM CR,DISS UG/L	XXXX.XXX	CHROMIUM, DISSOLVED (UG/L AS CR)	CHROMIUM, DISS	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	D E S C R I P T I O N	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
00121	CHROMIUM HEX-VAL UG/L	XXXX.XXX	CHROMIUM, HEXAVALENT (UG/L AS CR)	CHROMIUM,HEX-VAL	
01220	DISS CR HEX-VAL UG/L	XXXXX.XX	CHROMIUM, HEXAVALENT, DISSOLVED (UG/L AS CR)	CR,HEX-VAL, DISS	
00274	CHROMIUM HEX-VAL UG/L	XXXX.XXX	CHROMIUM, HEXAVALENT, TOTAL (UG/L AS CR)	CHROMIUM,HEX-VAL	
00122	CHROMIUM CR,TOTAL UG/L	XXXX.XXX	CHROMIUM, TOTAL (UG/L AS CR)	CHROMIUM, TOT	
00257	CHROMIUM TRI-VAL UG/L	XXXX.XXX	CHROMIUM, TRIVALENT, TOTAL (UG/L AS CR)	CHROMIUM,TRI-VAL	
34320	CHRYSENE WHL SAMP UG/L	XXXXX.XX	CHRYSENE IN WHL WTR SAMPLE (UG/L)	CHRYSENE	Y
34704	C13DCPRO WHL SAMP UG/L	XXXXX.XX	CIS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)	C13DICHLOROPROPE	Y
00322	COBALT CO,TOTAL MG/L	XXXX.XXX	COBALT, TOTAL (MG/L AS CO)	COBALT, TOT	
00080	COLOR PT-CO-U	XXXXXXXX	COLOR (PLATINUM-COBALT UNITS)	COLOR	
00077	COLOR APHA SU	XXXXXXXX	COLOR, APHA	COLOR, ALPHA	
00007	CMT, OTHER	N.A.	COMMENT, OTHER	CMT, OTHER	
00002	CMT,SMPL COLOR	N.A.	COMMENT, SAMPLE COLOR	CMT, SMPL COLOR	
00001	CMT,SMPL ODOR	N.A.	COMMENT, SAMPLE ODOR	CMT, SMPL ODOR	
00003	CMT,SMPL TURBID	N.A.	COMMENT, SAMPLE TURBIDITY	CMT, SMPL TURBID	
00004	CMT,WELL BROKEN	N.A.	COMMENT, WELL BROKEN	CMT, WELL BROKEN	
00006	CMT,WELL DRY	N.A.	COMMENT, WELL DRY	CMT, WELL DRY	
00005	CMT,WELL FROZEN	N.A.	COMMENT, WELL FROZEN	CMT, WELL FROZEN	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
00277	COPPER CU,DISS UG/L	XXXX.XXX	COPPER, DISSOLVED (UG/L AS CU)	COPPER, DISS	
00123	COPPER CU,TOTAL UG/L	XXXX.XXX	COPPER, TOTAL (UG/L AS CU)	COPPER, TOT	
45058	CRESOL WHL SMPL UG/L	XXXXX.XX	CRESOL IN WHOLE WATER SAMPLE (UG/L)	CRESOL (WHL SMP)	
00723	CYANIDE CN,DISS MG/L	XXXX.XXX	CYANIDE, DISSOLVED (MG/L AS CN)	CYANIDE, DISS	
00720	CYANIDE CN,TOTAL MG/L	XXXX.XXX	CYANIDE, TOTAL (MG/L AS CN)	CYANIDE, TOT	
77101	CYCHEXAM WHL SMPL MG/L	XX.XXXXX	CYCLOHEXYLAMINE, WHOLE WATER SAMPLE (MG/L)	CYCLOHEXYLAMINE	
39361	DDD FLT FRAC UG/L	XXXX.XXX	DDD IN FILT. FRAC. OF WATER SAMPLE (UG/L)	DDD, FLT FRAC	
39360	DDD WHL SAMP UG/L	XXXXX.XX	DDD IN WHL WTR SAMPLE (UG/L)	DDD	Y
39366	DDE FLT FRAC UG/L	XXXX.XXX	DDE IN FILT. FRAC. OF WATER SAMPLE (UG/L)	DDE, FLT FRAC	
39365	DDE WHL SAMP UG/L	XXXXX.XX	DDE IN WHL WTR SAMPLE (UG/L)	DDE	Y
39371	DDT FLT FRAC UG/L	XXXX.XXX	DDT IN FILT. FRAC. OF WATER SAMPLE (UG/L)	DDT, FLT FRAC	
39370	DDT WHL SAMP UG/L	XXXXX.XX	DDT IN WHL WTR SAMPLE (UG/L)	DDT	Y
72002	DEPTH TO GRD WTR FEET	XXXXX.XX	DEPTH TO GROUNDWATER (FEET BELOW WELL TOP)	DEPTH TO GRD WTR	
39110	DNBPHTHA WHL SAMP UG/L	XXXXX.XX	DI-N-BUTYL PHTHALATE IN WHL WTR SAMPLE (UG/L)	DIBUTYLPHTHALATE	Y
34596	DNOPHTHA WHL SAMP UG/L	XXXXX.XX	DI-N-OCTYL PHTHALATE IN WHL WTR SAMPLE (UG/L)	DIOCTYLPHTHALATE	Y
34428	DNPNAMIN WHL SAMP UG/L	XXXXX.XX	DI-N-PROPYLNITROSAMINE IN WHL WTR SAMPLE (UG/L)	DIPROPYLNITROSA	Y
34556	DBZ(AH)A WHL SAMP UG/L	XXXXX.XX	DIBENZ(A,H)ANTHRACENE IN WHL WTR SAMPLE (UG/L)	DIBENZ(AH)ANTHRA	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
73544	DBZ(AE)P WHL SAMP UG/L	XXXXX.XX	DIBENZO(A,E)PYRENE IN WHL WTR SAMPLE (UG/L)	DIBENZO(AE)PYREN	Y
73545	DBZ(AH)P WHL SAMP UG/L	XXXXX.XX	DIBENZO(A,H)PYRENE IN WHL WTR SAMPLE (UG/L)	DIBENZO(AH)PYREN	Y
73546	DBZ(AI)P WHL SAMP UG/L	XXXXX.XX	DIBENZO(A,I)PYRENE IN WHL WTR SAMPLE (UG/L)	DIBENZO(AI)PYREN	Y
81302	DBZFURAN WHL SAMP UG/L	XXXXX.XX	DIBENZOFURAN IN WHL WTR SAMPLE (UG/L)	DIBENZOFURAN	Y
32105	DBCM WHL SMPL UG/L	XXXXX.XX	DIBROMOCHLOROMETHANE IN WHL WATER SAMPLE (UG/L)	DIBROCHLMETHANE	Y
77596	DBMETHAN WHL SAMP UG/L	XXXXX.XX	DIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)	DIBROMOMETHANE	Y
34716	DCB WHL SMPL UG/L	XXXXX.XX	DICHLOROBENZENE IN WHL WATER SAMPLE (UG/L)	DICHLOROBENZENE	
34668	DCDFMETH WHL SAMP UG/L	XXXXX.XX	DICHLORODIFLUOROMETHANE IN WHL WTR SAMPLE (UG/L)	DICHLORODIFLUORO	Y
81575	DCIM WHL SMPL UG/L	XXXXX.XX	DICHLOROIODOMETHANE IN WHL WATER SAMPLE (UG/L)	DICHLOROIODOMETH	
34423	DCMETHAN WHL SAMP UG/L	XXXXX.XX	DICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	DICHLOROMETHANE	Y
39381	DIELDRIN FLT FRAC UG/L	XXXX.XXX	DIELDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	DIELDRIN FLT FRC	
34336	DEPHTHAL WHL SAMP UG/L	XXXXX.XX	DIETHYL PHTHALATE IN WHL WTR SAMPLE (UG/L)	DIETHYL PHTHALAT	Y
34531	DMPHTHAL WHL SAMP UG/L	XXXXX.XX	DIMETHYL PHTHALATE IN WHL WTR SAMPLE (UG/L)	DIMETHYLPHTHALAT	Y
77579	DIPHEN WHL SAMP UG/L	XXXXX.XX	DIPHENYLAMINE IN WHL WTR SAMPLE (UG/L)	DIPHENYLAMINE	Y
00185	DO FINAL MG/L	XXXXXX.X	DISSOLVED OXYGEN, FINAL (MG/L)	DISS OXY, FINAL	
00360	DISS SOL TOTAL MG/L	XXXXX.XX	DISSOLVED SOLIDS, TOTAL (MG/L)	DISS SOLIDS, TOT	
81888	DSULFOTO WHL SAMP UG/L	XXXXX.XX	DISULFOTON IN WHL WTR SAMPLE (UG/L)	DISULFOTON	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	D E S C R I P T I O N	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
00842	GRD WTR ELEV FEET,MSL	XXXXX.XX	ELEVATION, GROUNDWATER (FEET ABOVE MSL)	GRD WATER ELEV	
00843	GRD WTR ELEV FT, SITE	XXXXX.XX	ELEVATION, GROUNDWATER (FEET, SITE DATUM)	GRD WATER ELEV	
00023	LEACHATE HEAD ELV FEET MSL	XXXXX.XX	ELEVATION, LEACHATE HEAD IN FEET ABOVE MSL	LEACHATE HD ELEV	
34361	ESULF I WHL SAMP UG/L	XXXXX.XX	ENDOSULFAN I IN WHL WTR SAMPLE (UG/L)	ENDOSULFAN I	Y
34356	ESULF II WHL SAMP UG/L	XXXXX.XX	ENDOSULFAN II IN WHL WTR SAMPLE (UG/L)	ENDOSULFAN II	Y
34366	ENDRIN A WHL SAMP UG/L	XXXXX.XX	ENDRIN ALDEHYDE IN WHL WTR SAMPLE (UG/L)	ENDRIN ALDEHYDE	Y
39391	ENDRIN FLT FRAC UG/L	XXXX.XXX	ENDRIN IN FILT. FRAC. OF WATER SAMPLE (UG/L)	ENDRIN, FLT FRAC	
39390	ENDRIN WHL SAMP UG/L	XXXXX.XX	ENDRIN IN WHL WTR SAMPLE (UG/L)	ENDRIN	Y
77007	ECYANIDE WHL SAMP UG/L	XXXXX.XX	ETHYL CYANIDE IN WHL WTR SAMPLE (UG/L)	ETHYL CYANIDE	Y
73570	EMACRYLA WHL SAMP UG/L	XXXXX.XX	ETHYL METHACRYLATE IN WHL WTR SAMPLE (UG/L)	ETHYL METHACRYLA	Y
78113	ETHYLBEN WHL SMPL UG/L	XXXXX.XX	ETHYLBENZENE IN WHOLE WATER SAMPLE (UG/L)	ETHYLBENZENE	Y
76999	EOXIDE WHL SAMP UG/L	XXXXX.XX	ETHYLENE OXIDE IN WHL WTR SAMPLE (UG/L)	ETHYLENE OXIDE	Y
38462	FAMPHUR WHL SAMP UG/L	XXXXX.XX	FAMPHUR IN WHL WTR SAMPLE (UG/L)	FAMPHUR	Y
74055	FEC COLI GENERAL #/100ML	XXXXX.XX	FECAL COLIFORM,GENERAL (#/100ML)	FEC COLI, GEN	
74054	FECSTREP GENERAL #/100ML	XXXXX.XX	FECAL STREPTOCOCCI,GENERAL (#/100ML)	FECAL STREP, GEN	
00056	FLOW RATE GPD	XXXXXXXX	FLOW RATE (GALLONS PER DAY)	FLOW RATE	
50051	FLO RATE INST MGD	XXXX.XXX	FLOW RATE INSTANTANEOUS (MGD)	FLOW RATE INST	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	D E S C R I P T I O N	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
34376	FLUORANT WHL SAMP UG/L	XXXXX.XX	FLUORANTHENE IN WHL WTR SAMPLE (UG/L)	FLUORANTHENE	Y
34381	FLUORENE WHL SAMP UG/L	XXXXX.XX	FLUORENE IN WHL WTR SAMPLE (UG/L)	FLUORENE	Y
00950	FLUORIDE F,DISS MG/L	XXXXX.XX	FLUORIDE, DISSOLVED (MG/L AS F)	FLUORIDE, DISS	
00305	FLUORIDE F,TOTAL MG/L	XXXX.XXX	FLUORIDE, TOTAL (MG/L AS F)	FLUORIDE, TOT	
34488	FREON WHL SAMP UG/L	XXXXX.XX	FLUOROTRICHLOROMETHANE IN WHL WTR SAMPLE (UG/L)	FREON	Y
71880	FORMALDE HYDE MG/L	XXXXXX.X	FORMALDEHYDE (MG/L)	FORMALDEHYDE	
39340	G-BHC WHL SAMP UG/L	XXXXX.XX	GAMMA-BHC IN WHL WTR SAMPLE (UG/L)	GAMMA-BHC	Y
01501	G-ALPHA TOTAL PC/L	XXXXXXXX	GROSS ALPHA (PC/L)	GROSS ALPHA	
03501	G-BETA TOTAL PC/L	XXXXXXXX	GROSS BETA (PC/L)	GROSS BETA	
50052	GRDWTR VOL PUMP 1000GALS	XXXX.XXX	GROUNDWATER VOLUME PUMPED (1000 GALS)	GRDWTR VOL PMP	
78115	TOX HALOGEN UG/L	XXXXX.XX	HALOGEN, TOTAL ORGANIC, WHOLE WATER SAMPLE (UG/L)	HALOGEN, TOT ORG	
00066	CA HARD CACO3 MG/L	XXXXXXXX	HARDNESS, CALCIUM (MG/L AS CACO3)	CA HARD, CACO3	
00065	MG HARD CACO3 MG/L	XXXXXXXX	HARDNESS, MAGNESIUM (MG/L AS CACO3)	MG HARD, CACO3	
00900	TOT HARD CACO3 MG/L	XXXXXXXX	HARDNESS, TOTAL (MG/L AS CACO3)	TOT HARD, CACO3	
39420	HPCHLREP WHL SMPL UG/L	XXXX.XXX	HEPTACHLOR EPOXIDE IN WHOLE WATER SAMPLE (UG/L)	HPCHLR EPOXIDE	
39410	HEPTACHL WHL SAMP UG/L	XXXXX.XX	HEPTACHLOR IN WHL WTR SAMPLE (UG/L)	HEPTACHLOR	Y
39700	HCB WHL SMPL UG/L	XXXX.XXX	HEXACHLOROBENZENE IN WHOLE WATER SAMPLE (UG/L)	HCB, WHL WTR SMP	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
34391	HCBUTADI WHL SAMP UG/L	XXXXX.XX	HEXACHLOROBUTADIENE IN WHL WTR SAMPLE (UG/L)	HEXACHLOROBUTADI	Y
78022	HCCPENTA WHL SAMP UG/L	XXXXX.XX	HEXACHLOROCYCLOPENTADIENE IN WHL WTR SAMPLE (UG/L)	HCCPENTADIENE	Y
34396	HCETHANE WHL SAMP UG/L	XXXXX.XX	HEXACHLORDETHANE IN WHL WTR SAMPLE (UG/MPLE (UG/L)	HEXACHLORDETHANE	Y
73575	HCPHENE WHL SAMP UG/L	XXXXX.XX	HEXACHLOROPHENE IN WHL WTR SAMPLE (UG/L)	HEXACHLOROPHENE	Y
73576	HCPROPEN WHL SAMP UG/L	XXXXX.XX	HEXACHLOROPROPENE IN WHL WTR SAMPLE (UG/L)	HEXACHLOROPROPEN	Y
00083	HYDRDCAR BONS-IR MG/L	XXXX.XXX	HYDROCARBONS, IN WATER,IR,CC114 EXT.CHROMAT. MG/L	HYDROCARBONS-IR	
34403	I123CDPY WHL SAMP UG/L	XXXXX.XX	INDENO(1,2,3-CD)PYRENE IN WHL WTR SAMPLE (UG/L)	INDENO(123CD)PYR	Y
77424	IMETHANE WHL SAMP UG/L	XXXXX.XX	IODOMETHANE IN WHL WTR SAMPLE (UG/L)	IODOMETHANE	Y
00249	IRON FE,DISS MG/L	XXXX.XXX	IRON, DISSOLVED (MG/L AS FE)	IRON, DISS	
01046	IRON FE,DISS MG/L	XXXX.XXX	IRON, DISSOLVED (MG/L AS FE)	IRON, DISS	
74010	IRON FE,TOTAL MG/L	XXXX.XXX	IRON, TOTAL (MG/L AS FE)	IRON, TOT	
77033	ISOBUTYL WHL SAMP UG/L	XXXXX.XX	ISOBUTYL ALCOHOL IN WHL WTR SAMPLE (UG/L)	ISOBUTYL ALCOHOL	Y
39430	ISODRIN WHL SAMP UG/L	XXXXX.XX	ISODRIN IN WHL WTR SAMPLE (UG/L)	ISODRIN	Y
34408	IPHORON WHL SAMP UG/L	XXXXX.XX	ISOPHORONE IN WHL WTR SAMPLE (UG/L)	ISOPHORONE	Y
77015	ISOPROPA MG/L	XXXXX.XX	ISOPROPANOL (MG/L)	ISOPROPANOL	Y
77223	IPPB WHL SMPL UG/L	XXXXX.XX	ISOPROPYLBENZENE IN WHOLE WATER SAMPLE (UG/L)	ISOPROPYLBENZENE	Y
73582	ISAFROLE WHL SAMP UG/L	XXXXX.XX	ISOSAFROLE IN WHL WTR SAMPLE (UG/L)	ISOSAFROLE	Y

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81281	KEPONE WHL SAMP UG/L	XXXXX.XX	KEPONE IN WHL WTR SAMPLE (UG/L)	KEPONE	Y
00031	LEACHATE DEPTH FEET	XXXXX.XX	LEACHATE, DEPTH IN FEET	LEACHATE DEPTH	
00032	LEACHATE VOL PUMP 1000GALS	XXXXXXXX	LEACHATE, VOLUME PUMPED (1000 GALLONS)	LEACHATE VOL PMP	
00240	LEAD PB,DISS UG/L	XXXX.XXX	LEAD, DISSOLVED (UG/L AS PB)	LEAD, DISS	
00125	LEAD PB,TOTAL UG/L	XXXX.XXX	LEAD, TOTAL (UG/L AS PB)	LEAD, TOT	
00074	LIGNIN MG/L	XXXX.XXX	LIGNIN (MG/L)	LIGNIN	
39782	LINDANE WHL SMPL UG/L	XXXX.XXX	LINDANE IN WHOLE WATER SAMPLE (UG/L)	LINDANE, WHL SMP	
01130	LITHIUM LI, DISS UG/L	XXXXXXXX	LITHIUM, DISSOLVED (UG/L AS LI)	LITHIUM, DISS	
01132	LITHIUM LI, TOT UG/L	XXXXXXXX	LITHIUM, TOTAL (UG/L AS LI)	LITHIUM, TOT	
34566	M-DCBENZ WHL SAMP UG/L	XXXXX.XX	M-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	M-DICHLOROBENZEN	Y
81710	M-XYLENE TOTAL UG/L	XXXX.XXX	M-XYLENE (UG/L)	M-XYLENE	Y
00925	MAGNSIUM MG,DISS MG/L	XXXXXX.X	MAGNESIUM, DISSOLVED (MG/L AS MG)	MAGNESIUM, DISS	
00348	MAGNSIUM MG,TOTAL MG/L	XXXXX.XX	MAGNESIUM, TOTAL (MG/L AS MG)	MAGNESIUM, TOT	
73587	MALONONE WHL SAMP UG/L	XXXXX.XX	MALONONITRILE IN WHL WTR SAMPLE (UG/L)	MALONITRILE	Y
00316	MANGNESE MN,DISS UG/L	XXXX.XXX	MANGANESE, DISSOLVED (UG/L AS MN)	MANGANESE, DISS	
00253	MANGNESE MN,TOTAL UG/L	XXXX.XXX	MANGANESE, TOTAL (UG/L AS MN)	MANGANESE, TOT	
71890	MERCURY HG,DISS UG/L	XXXX.XXX	MERCURY, DISSOLVED (UG/L AS HG)	MERCURY, DISS	

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00126	MERCURY HG,TOTAL UG/L	XXXX.XXX	MERCURY, TOTAL (UG/L AS HG)	MERCURY, TOT	
81593	MANITRIL WHL SAMP UG/L	XXXXX.XX	METHACRYLONITRILE IN WHL WTR SAMPLE (UG/L)	METHACRYLONITRIL	Y
85547	METHANE GAS %	XXXXXX.X	METHANE GAS, VOLUME PERCENT OF DISSOLVED GASES (%)	METHANE	
00073	METHANOL MG/L	XXXX.XXX	METHANOL (MG/L)	METHANOL	
39480	MOCHLOR WHL SAMP UG/L	XXXXX.XX	METHOXYCHLOR IN WHL WTR SAMPLE (UG/L)	METHOXYCHLOR	Y
81597	MMACRYLA WHL SAMP UG/L	XXXXX.XX	METHYL METHACRYLATE IN WHL WTR SAMPLE (UG/L)	METHYL METHACRYL	Y
73595	MMSULFON WHL SAMP UG/L	XXXXX.XX	METHYL METHANESULFONATE IN WHL WTR SAMPLE (UG/L)	M M SULFONATE	Y
39600	MPARATHI WHL SAMP UG/L	XXXXX.XX	METHYL PARATHION IN WHL WTR SAMPLE (UG/L)	METHYL PARATHION	Y
38260	MBAS MG/L	XXXXX.XX	METHYLENE BLUE ACTIVE SUBST. (DETERGENTS, ETC.)	METH BLU ACT SUB	
81595	METHETHK WHL SMPL UG/L	XXXXX.XX	METHYLETHYLKETONE IN WHOLE WATER SAMPLE (UG/L)	METHYLETHYLKETON	Y
00127	MOLY MO,TOTAL MG/L	XXXX.XXX	MOLYBDENUM, TOTAL (MG/L AS MO)	MOLYBDENUM, TOT	
77189	N-BUTYLA WHL SAMP UG/L	XXXXX.XX	N-BUTYLACETATE IN WHL WTR SAMPLE (UG/L)	N-BUTYLACETATE	Y
78207	NNDNBAMI WHL SAMP UG/L	XXXXX.XX	N-NITROSODI-N-BUTYLAMINE IN WHL WTR SAMPLE (UG/L)	NNITROSODI-N-BUT	Y
78200	NNDEAMIN WHL SAMP UG/L	XXXXX.XX	N-NITROSODIETHYLAMINE IN WHL WTR SAMPLE (UG/L)	NNITROSODIETHYLA	Y
34438	NNDMAMIN WHL SAMP UG/L	XXXXX.XX	N-NITROSODIMETHYLAMINE IN WHL WTR SAMPLE (UG/L)	NNITROSODIMETHYL	Y
34433	NNDPAMIN WHL SAMP UG/L	XXXXX.XX	N-NITROSODIPHENYLAMINE IN WHL WTR SAMPLE (UG/L)	NNITROSODIPHENYL	Y
73613	NNMEAMIN WHL SAMP UG/L	XXXXX.XX	N-NITROSOMETHYLETHYLAMINE IN WHL WTR SAMPLE (UG/L)	NNITROSOMETHYLET	Y

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73617	NNMORPHO WHL SAMP UG/L	XXXXX.XX	N-NITROSOMORPHOLINE IN WHL WTR SAMPLE (UG/L)	NNITROSOMORPHOLI	Y
73619	NNPIPERI WHL SAMP UG/L	XXXXX.XX	N-NITROSOPIPERIDINE IN WHL WTR SAMPLE (UG/L)	NNITROSOPIPERIDI	Y
78206	NNPYRROL WHL SAMP UG/L	XXXXX.XX	N-NITROSOPYRROLIDINE IN WHL WTR SAMPLE (UG/L)	NNITROSOPYRROLID	Y
34696	NAPTHALE WHL SAMP UG/L	XXXXX.XX	NAPTHALENE IN WHL WTR SAMPLE (UG/L)	NAPTHALENE	Y
00276	NICKEL NI,DISS UG/L	XXXX.XXX	NICKEL, DISSOLVED (UG/L AS NI)	NICKEL, DISS	
00128	NICKEL NI,TOTAL UG/L	XXXX.XXX	NICKEL, TOTAL (UG/L AS NI)	NICKEL, TOT	
00618	NO3-N DISS MG/L	XXXXX.XX	NITRATE NITROGEN, DISSOLVED (MG/L AS N)	NO3-N, DISS	
00620	NO3-N TOTAL MG/L	XXXXX.XX	NITRATE NITROGEN, TOTAL (MG/L AS N)	NO3-N, TOT	
00613	NO2-N DISS MG/L	XXXX.XXX	NITRITE NITROGEN, DISSOLVED (MG/L AS N)	NO2-N, DISS	
00615	NO2-N TOTAL MG/L	XXXX.XXX	NITRITE NITROGEN, TOTAL (MG/L AS N)	NO2-N, TOT	
00631	NO2&NO3 N-DISS MG/L	XXXXXX.X	NITRITE PLUS NITRATE, DIS. 1 DET. (MG/L AS N)	NO2 & NO3,N-DISS	
00630	NO2&NO3 N-TOTAL MG/L	XXXX.XXX	NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	NO2 & NO3, N-TOT	
34447	NBENZENE WHL SAMP UG/L	XXXXX.XX	NITROBENZENE IN WHL WTR SAMPLE (UG/L)	NITROBENZENE	Y
00608	NH3-N DISS MG/L	XXXX.XXX	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NH3-N, DISS	
00610	NH3-N TOTAL MG/L	XXXX.XXX	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NH3-N, TOT	
00640	INORG N N,TOTAL MG/L	XXXXX.XX	NITROGEN, INORGANIC, TOTAL (MG/L AS N)	INORG N, TOT	
00623	KJELDL N DISS MG/L	XXXX.XXX	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)	DISS KJELDAHL N	

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00625	TOT KJEL NITROGEN MG/L	XXXXX.XX	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	TOT KJELDAHL N	
00607	ORG N N,DISS MG/L	XXXXX.XX	NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)	ORG NITROGEN,DIS	
00605	ORG N N,TOTAL MG/L	XXXXX.XX	NITROGEN, ORGANIC, TOTAL (MG/L AS N)	ORG NITROGEN,TOT	
78121	O&P XYLENE UG/L	XXXX.XXX	O&P-XYLENE (UG/L)	O&P-XYLENE	Y
77275	O-CLTOLU TOTAL UG/L	XXXXX.XX	O-CHLOROTOLUENE (UG/L)	O-CHLOROTOLUENE	Y
34536	O-DCBENZ WHL SAMP UG/L	XXXXX.XX	O-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	O-DICHLOROBENZEN	Y
77135	O-XYLENE TOTAL UG/L	XXXX.XXX	O-XYLENE (UG/L)	O-XYLENE	Y
73553	OODIO2PP WHL SAMP UG/L	XXXXX.XX	O,O-DIETHYL O-2-PYRAZINYL PHOSPHOROTHIOATE WWS UG/	OODEO2PPTHIOLATE	Y
00556	OIL&GRSE FREON-GR MG/L	XXXXX.XX	OIL & GREASE (FREON EXTR-GRAV METH) TOT REC (MG/L)	OIL & GREASE	
01241	OSMIUM TOTAL UG/L	XXXXX.XX	OSMIUM, TOTAL (UG/L)	OSMIUM, TOT	
00013	OXY DEM TOTAL MG/L	XXXXXX.X	OXYGEN DEMAND, TOTAL (MG/L)	OXY DEM, TOT	
85550	OXYGEN GAS %	XXXXXX.X	OXYGEN GAS, VOLUME PERCENT OF DISSOLVED GASES (%)	OXYGEN	
73519	PBZQUINO WHL SAMP UG/L	XXXXX.XX	P-BENZOQUINONE IN WHL WTR SAMPLE (UG/L)	P-BENZOQUINONE	Y
34452	PCMC WHL SAMP UG/L	XXXXX.XX	P-CHLORD-M-CRESOL IN WHL WTR SAMPLE (UG/L)	PCMC	Y
73529	PCANILIN WHL SAMP UG/L	XXXXX.XX	P-CHLOROANILINE IN WHL WTR SAMPLE (UG/L)	P-CHLOROANILINE	Y
77277	P-CLTOLU TOTAL UG/L	XXXXX.XX	P-CHLOROTOLUENE (UG/L)	P-CHLOROTOLUENE	Y
77146	P-CRESOL WHL SAMP UG/L	XXXXX.XX	P-CRESOL IN WHL WTR SAMPLE (UG/L)	P-CRESOL	Y

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34571	P-DCBENZ WHL SAMP UG/L	XXXXX.XX	P-DICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	P-DICHLOROBENZEN	Y
73558	PDMAABZ WHL SAMP UG/L	XXXXX.XX	P-DIMETHYLAMINOAZOBENZENE IN WHL WTR SAMPLE (UG/L)	P-DMAAB	Y
73605	PNANILIN WHL SAMP UG/L	XXXXX.XX	P-NITROANILINE IN WHL WTR SAMPLE (UG/L)	P-NITROANILINE	Y
78132	P-XYLENE TOTAL UG/L	XXXX.XXX	P-XYLENE (UG/L)	P-XYLENE	Y
39540	PARATHIO WHL SAMP UG/L	XXXXX.XX	PARATHION IN WHL WTR SAMPLE (UG/L)	PARATHION	Y
34671	PCB-1016 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1016	PCB-1016	Y
39488	PCB-1221 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1221	PCB-1221	Y
39492	PCB-1232 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1232	PCB-1232	Y
39496	PCB-1242 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1242	PCB-1242	Y
39500	PCB-1248 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1248	PCB-1248	Y
39504	PCB-1254 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1254	PCB-1254	Y
39508	PCB-1260 WHL SAMP UG/L	XXXXX.XX	PCB(AROCLOR)1260	PCB-1260	Y
39516	PCBS WHL SMPL MG/L	XXXX.XXX	PCBS IN WHOLE WATER SAMPLE (MG/L)	PCBS IN WHL SMPL	
77783	PCBZ WHL SAMP UG/L	XXXXX.XX	PENTACHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	PENTACHLOROBENZE	Y
81501	PCE WHL SAMP UG/L	XXXXX.XX	PENTACHLOROETHANE IN WHL WTR SAMPLE (UG/L)	PENTACHLOROETHAN	Y
81316	PCNBZ WHL SAMP UG/L	XXXXX.XX	PENTACHLORONITROBENZENE IN WHL WTR SAMPLE (UG/L)	PENTACHLORONITRO	Y
39032	PCP WHL SMPL UG/L	XXXXX.XX	PENTACHLOROPHENOL IN WHOLE WATER SAMPLE (UG/L)	PENTACHLORPHENOL	

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00400	PH PH,FIELD SU	XXXXX.XX	PH-FIELD (STANDARD UNITS)	PH (FIELD)	
00403	PH LAB SU	XXXXX.XX	PH, LAB (STANDARD UNITS)	PH (LAB)	
73626	PHENACET WHL SAMP UG/L	XXXXX.XX	PHENACETIN IN WHL WTR SAMPLE (UG/L)	PHENACETIN	Y
34461	PHENANTH WHL SAMP UG/L	XXXXX.XX	PHENANTHRENE IN WHL WTR SAMPLE (UG/L)	PHENANTHRENE	Y
34694	PHENOL WHL SAMP UG/L	XXXXX.XX	PHENOL IN WHL WTR SAMPLE (UG/L)	PHENOL	Y
32723	PHENOLS DISS UG/L	XXXXX.XX	PHENOLICS, DISSOLVED	PHENOLICS, DISS	
00129	PHENOLS TOTAL UG/L	XXXX.XXX	PHENOLICS, TOTAL, RECOVERABLE	PHENOLICS, TOT	
00660	ORTHOPO4 PO4 MG/L	XXXXX.XX	PHOSPHATE, ORTHO (MG/L AS PO4)	PHOSPHATE, ORTHO	
00118	PHSPHATE PO4,TOT MG/L	XXXXX.XX	PHOSPHATE, TOTAL (MG/L AS PO4)	PHOSPHATE, TOT	
00133	PHOS P,TOTAL MG/L	XXXX.XXX	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, TOT	
71888	SOL PHOS T AS PO4 MG/L	XXXXX.XX	PHOSPHORUS, TOTAL SOLUBLE AS PO4 (MG/L)	P,TOT SOL AS PO4	
00935	PTSSIUM K,DISS MG/L	XXXXX.XX	POTASSIUM, DISSOLVED (MG/L AS K)	POTASSIUM, DISS	
00076	PTSSIUM K,TOTAL MG/L	XXXX.XXX	POTASSIUM, TOTAL (MG/L AS K)	POTASSIUM, TOT	
39080	PRONAMID WHL SAMP UG/L	XXXXX.XX	PRONAMIDE IN WHL WTR SAMPLE (UG/L)	PRONAMIDE	Y
77045	PYRIDINE WHL SAMP UG/L	XXXXX.XX	PYRIDINE IN WHL WTR SAMPLE (UG/L)	PYRIDINE	Y
11503	RADIUM TOTAL PC/L	XXXXXX.X	RADIUM, TOTAL (PC/L)	RADIUM, TOTAL	
00072	RESISTIV MEGAOHMS	XX.XXXXX	RESISTIVITY (STANDARD UNITS - MEGA OHMS)	RESISTIVITY	

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77164	RESOUCI WHL SAMP UG/L	XXXXX.XX	RESOUCINOL IN WHL WTR SAMPLE (UG/L)	RESOUCINOL	Y
77545	SAFROLE WHL SAMP UG/L	XXXXX.XX	SAFROLE IN WHL WTR SAMPLE (UG/L)	SAFROLE	Y
00026	SALINITY PPTH	XXXXX.XX	SALINITY (PARTS PER THOUSAND)	SALINITY	
01145	SELENIUM SE,DISS UG/L	XXXX.XXX	SELENIUM, DISSOLVED (UG/L AS SE)	SELENIUM, DISS	
00270	SELENIUM SE,TOTAL UG/L	XXXX.XXX	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, TOT	
00955	SILICA DISOLVED MG/L	XXXXXX.X	SILICA, DISSOLVED (MG/L AS SIO2)	SILICA, DISS	
00078	SILICA TOTAL MG/L	XXXXXX.X	SILICA, TOTAL (MG/L AS SIO2)	SILICA, TOT	
01140	SILICON SI,DISS UG/L	XXXXXXXX	SILICON, DISSOLVED (UG/L AS SI)	SILICON, DISS	
01075	SILVER AG,DISS UG/L	XXXXXX.X	SILVER, DISSOLVED (UG/L AS AG)	SILVER, DISS	
01077	SILVER AG,TOTAL UG/L	XXXXXX.X	SILVER, TOTAL (UG/L AS AG)	SILVER, TOT	
39760	SILVEX WHL SAMP UG/L	XXXXX.XX	SILVEX IN WHL WTR SAMPLE (UG/L)	SILVEX	Y
39055	SIMAZINE WHL SAMP UG/L	XXXXX.XX	SIMAZINE IN WHOLE WATER SAMPLE (UG/L)	SIMAZINE	Y
32017	NA CL MG/L	XXXXXX.X	SODIUM CHLORIDE (MG/L)	NACL	
00930	SODIUM NA,DISS MG/L	XXXXX.XX	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM, DISS	
00929	SODIUM NA,TOTAL MG/L	XXXXXX.X	SODIUM, TOTAL (MG/L AS NA)	SODIUM, TOT	
00247	SOLIDS TOTAL MG/L	XXXXXX.X	SOLIDS, TOTAL (MG/L)	SOLIDS, TOT	
00163	SOLIDS VOLATILE MG/L	XXXXXX.X	SOLIDS, VOLATILE (MG/L)	SOLIDS, VOLATILE	

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00402	CNDUCTVY UNCOR TE MICROMHO	XXXXXXXX	SPEC CONDUCTANCE, NON-TEMPERATURE CORR. (UMHOS/CM)	COND, UNCOR TEMP	
00872	CNDUCTVY AT 25C MICROMHO	XXXXXXXX	SPECIFIC CONDUCTANCE-FIELD (UMHOS/CM @ 25C)	COND(FIELD) @25C	
00095	CNDUCTVY @25C LAB MICROMHO	XXXXXXXX	SPECIFIC CONDUCTANCE, LAB (UMHOS/CM @ 25C)	COND (LAB) @ 25C	
00069	SPECIFIC GRAVITY SU	XXX.XXXX	SPECIFIC GRAVITY (STANDARD UNITS)	SPECIFIC GRAVITY	
00075	STRONTUM SR,TOTAL MG/L	XX.XXXXX	STRONTIUM, TOTAL (MG/L AS SR)	STRONTIUM, TOT	
77128	STYRENE WHL SAMP UG/L	XXXXX.XX	STYRENE IN WHOLE WATER SAMPLE (UG/L)	STYRENE WHL SMP	Y
00946	SULFATE SO4,DISS MG/L	XXXXX.XX	SULFATE, DISSOLVED (MG/L AS SO4)	SULFATE, DISS	
00945	SULFATE SO4,TOT MG/L	XXXXX.XX	SULFATE, TOTAL (MG/L AS SO4)	SULFATE, TOT	
00746	SULFIDE DISOLVED MG/L	XXXXX.XX	SULFIDE, DISSOLVED (MG/L AS S)	SULFIDE, DISS	
00745	SULFIDE S,TOTAL MG/L	XXXXX.XX	SULFIDE, TOTAL (MG/L AS S)	SULFIDE, TOT	
00740	SULFITE SO3 MG/L	XXXXXX.X	SULFITE (MG/L AS SO3)	SULFITE	
00134	SUSP SOL TOTAL MG/L	XXXXXX.X	SUSPENDED SOLIDS, TOTAL (MG/L)	SUSP SOLIDS, TOT	
32241	TANNIN MG/L	XXXXX.XX	TANNIN (MG/L)	TANNIN	
00068	TANNIN LIGNIN MG/L	XXXXXX.X	TANNIN AND LIGNIN, COMBINED (MG/L)	TANNIN & LIGNIN	
00010	WATER TEMP CENT	XXXXXX.X	TEMPERATURE, WATER (DEGREES CENTIGRADE)	WATER TEMP	
34475	TCTHY WHL SAMP UG/L	XXXXX.XX	TETRACHLOROETHYLENE IN WHL WTR SAMPLE (UG/L)	TETRACHLOROETHYE	Y
77871	TEDTPP WHL SAMP UG/L	XXXXX.XX	TETRAETHYLDITHIDPYROPHOSPHATE WHL WTR SAMP (UG/L)	TEDTPP	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	D E S C R I P T I O N	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
81607	THF WHL SMPL UG/L	XXXXX.XX	TETRAHYDROFURAN IN WHOLE WATER SAMPLE (UG/L)	TETRAHYDROFURAN	Y
01057	THALLIUM TL,DISS UG/L	XXXXXXXX	THALLIUM, DISSOLVED (UG/L AS TL)	THALLIUM, DISS	
00841	THALLIUM TL,TOTAL UG/L	XXXX.XXX	THALLIUM, TOTAL (UG/L AS TL)	THALLIUM, TOT	
00314	TIN SN,DISS MG/L	XXXX.XXX	TIN, DISSOLVED (MG/L AS SN)	TIN, DISS	
00180	TITANIUM TI,TOTAL MG/L	XXXXX.XX	TITANIUM, TOTAL (MG/L AS TI)	TITANIUM, TOT	
34010	TOLUENE GC-MS MG/L	XXXXX.XX	TOLUENE BY GC-MS (MG/L)	TOLUENE (GC-MS)	Y
78131	TOLUENE WHL SAMP UG/L	XXXXX.XX	TOLUENE IN WHL WTR SAMPLE (UG/L)	TOLUENE	Y
74056	TOT COLI GENERAL #/100ML	XXXXX.XX	TOTAL COLIFORM,GENERAL (#/100ML)	TOT COLI, GEN	
39400	TOXAPHEN WHL SAMP UG/L	XXXXX.XX	TOXAPHENE IN WHL WTR SAMPLE (UG/L)	TOXAPHENE	Y
34699	T13DCPRO WHL SAMP UG/L	XXXXX.XX	TRANS-1,3-DICHLOROPROPENE IN WHL WTR SAMPLE (UG/L)	T13DICHLOROPROPE	Y
73547	T14DCZBU WHL SAMP UG/L	XXXXX.XX	TRANS-1,4-DICHLORO-2-BUTENE IN WHL WTR SAMP (UG/L)	TRANS14DICHLORO2	Y
32104	TBM WHL SAMP UG/L	XXXXX.XX	TRIBROMOMETHANE IN WHL WTR SAMPLE (UG/L)	TRIBROMOMETHANE	Y
39180	TRI-TCE WHL SMPL UG/L	XXXXX.XX	TRICHLOROETHYLENE IN WHOLE WATER SAMPLE (UG/L)	TRICHLETHYLENE	Y
73561	TCMETHIO WHL SAMP UG/L	XXXXX.XX	TRICHLOROMETHANETHIOL IN WHL WTR SAMPLE (UG/L)	TRICMETHANETHIOL	Y
81611	TCTFE WHL SMPL UG/L	XXXXX.XX	TRICHLOROTRIFLUOROETHANE IN WHL WTR SAMPLE (UG/L)	TRICHLTRIFLUETH	Y
73655	T23DBPP WHL SAMP UG/L	XXXXX.XX	TRIS(2,3-DIBROMOPROPYL)PHOSPHATE WHL WTR SMP(UG/L)	TRIS(23DBP)PHOSP	Y
22706	URANIUM AS U3O8 TOT UG/L	XXXXX.XX	URANIUM, TOTAL (UG/L AS U3O8)	URANIUM, TOTAL	

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
01087	VANADIUM V, TOT UG/L	XXXXXXXX	VANADIUM, TOTAL (UG/L AS V)	VANADIUM, TOTAL	
77057	V ACETAT WHL SAMP UG/L	XXXXX.XX	VINYL ACETATE IN WHL WTR SAMPLE (UG/L)	VINYL ACETATE	Y
39175	VIN CLD WHL SMPL UG/L	XXXXX.XX	VINYL CHLORIDE IN WHOLE WATER SAMPLE (UG/L)	VINYL CHLORIDE	
84085	VOC SCAN	XXXXXXXX	VOLATILE ORGANIC COMPOUND SCAN	VOC SCAN	
81551	XYLENE WHL SMPL UG/L	XXXXX.XX	XYLENE IN WHOLE WATER SAMPLE (UG/L)	XYLENE (WHL SMP)	Y
00275	ZINC ZN,DISS UG/L	XXXX.XXX	ZINC, DISSOLVED (UG/L AS ZN)	ZINC, DISS	
00131	ZINC ZN,TOTAL UG/L	XXXX.XXX	ZINC, TOTAL (UG/L AS ZN)	ZINC, TOT	
73600	1NAMINE WHL SAMP UG/L	XXXXX.XX	1-NAPTHYLAMINE IN WHL WTR SAMPLE (UG/L)	1-NAPTHYLAMINE	Y
34496	11DCETHA WHL SAMP UG/L	XXXXX.XX	1,1-DICHLOROETHANE IN WHL WTR SAMPLE (UG/L)	11DICHLOROETHANE	Y
34501	11DCETHY WHL SAMP UG/L	XXXXX.XX	1,1-DICHLOROETHYLENE IN WHL WTR SAMPLE (UG/L)	11DICHLOROETHYLE	Y
34506	111TCE WHL SAMP UG/L	XXXXX.XX	1,1,1-TRICHLOROETHANE IN WHL WTR SAMPLE (UG/L)	111TRICHLOROETHA	Y
77562	1112TCE WHL SAMP UG/L	XXXXX.XX	1,1,1,2-TETRACHLOROETHANE IN WHL WTR SAMPLE (UG/L)	1112TETRACHLOROE	Y
34511	112TCE WHL SAMP UG/L	XXXXX.XX	1,1,2-TRICHLOROETHANE IN WHL WTR SAMPLE (UG/L)	112TRICHLOROETHA	Y
34516	1122TCE WHL SAMP UG/L	XXXXX.XX	1,1,2,2-TETRACHLOROETHANE IN WHL WTR SAMPLE (UG/L)	1122TETRACHLOROE	Y
38437	12DB3CP WHL SAMP UG/L	XXXXX.XX	1,2-DIBROMO-3-CHLOROPROPANE IN WHL WTR SAMP (UG/L)	DIBROMOCHLOROPRO	Y
77651	1,2-DBRE TOTAL UG/L	XXXX.XXX	1,2-DIBROMOETHANE (UG/L)	1,2-DIBROMOETHAN	Y
32103	1,2-DICH WHL SMPL UG/L	XXXXX.XX	1,2-DICHLOROETHANE IN WHOLE WATER SAMPLE (UG/L)	1,2-DICHLOETHANE	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
34546	1,2DCETH WHL SAMP UG/L	XXXXX.XX	1,2-DICHLOROETHENE IN WHL WTR SAMPLE (UG/L)	1,2DICHLORDE	Y
34541	12DCPROP WHL SAMP UG/L	XXXXX.XX	1,2-DICHLOROPROPANE IN WHL WTR SAMPLE (UG/L)	12DICHLOROPROPAN	Y
34346	12DPH WHL SAMP UG/L	XXXXX.XX	1,2-DIPHENYLHYDRAZINE IN WHL WTR SAMPLE (UG/L)	12DIPHENYLHYDRA	Y
77443	123TCPRD WHL SAMP UG/L	XXXXX.XX	1,2,3-TRICHLOROPROPANE IN WHL WTR SAMPLE (UG/L)	123TRICHLOROPROP	Y
34551	124TCB WHL SAMP UG/L	XXXXX.XX	1,2,4-TRICHLOROBENZENE IN WHL WTR SAMPLE (UG/L)	124TRICHLOROBENZ	Y
77734	1245TCBZ WHL SAMP UG/L	XXXXX.XX	1,2,4,5-TETRACHLOROBENZENE IN WHL WTR SMP (UG/L)	1245TETRACHLORBE	Y
82388	14DIOXAN WHL SAMP UG/L	XXXXX.XX	1,4-DIOXANE IN WHL WTR SAMPLE (UG/L)	1,4-DIOXANE	Y
73599	14NQUIND WHL SAMP UG/L	XXXXX.XX	1,4-NAPTHOQUINONE IN WHL WTR SAMPLE (UG/L)	14NAPTHOQUINONE	Y
73501	2AAFLUOR WHL SAMP UG/L	XXXXX.XX	2-ACETYLAMINOFLUORENE IN WHL WTR SAMPLE (UG/L)	2ACETYLAMINOFLUO	Y
34576	CEV ETHE WHL SAMP UG/L	XXXXX.XX	2-CHLOROETHYLVINYL ETHER IN WHL WTR SAMPLE (UG/L)	2-CVE ETHER	Y
34581	2CNAPTHA WHL SAMP UG/L	XXXXX.XX	2-CHLORONAPTHALENE IN WHL WTR SAMPLE (UG/L)	2CHLORONAPTHALEN	Y
34586	2CPHENOL WHL SAMP UG/L	XXXXX.XX	2-CHLOROPHENOL IN WHL WTR SAMPLE (UG/L)	2-CHLOROPHENOL	Y
77103	2HANONE WHL SAMP UG/L	XXXXX.XX	2-HEXANONE IN WHL WTR SAMPLE (UG/L)	2-HEXANONE	Y
77416	2MNAPTHA WHL SAMP UG/L	XXXXX.XX	2-METHYLNAPTHALENE IN WHL WTR SAMPLE (UG/L)	2METHYLNAPTHALEN	Y
73601	2NAMINE WHL SAMP UG/L	XXXXX.XX	2-NAPTHYLAMINE IN WHL WTR SAMPLE (UG/L)	2-NAPTHYLAMINE	Y
34591	2NPHENOL WHL SAMP UG/L	XXXXX.XX	2-NITROPHENOL IN WHL WTR SAMPLE (UG/L)	2-NITROPHENOL	Y
77088	2PICOLIN WHL SAMP UG/L	XXXXX.XX	2-PICOLINE IN WHL WTR SAMPLE (UG/L)	2-PICOLINE	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
73638	2P1OL WHL SAMP UG/L	XXXXX.XX	2-PROPYN-1-OL IN WHL WTR SAMPLE (UG/L)	2-PROPYL-1-OL	Y
81287	DBNP WHL SAMP UG/L	XXXXX.XX	2-SEC-BUTYL-4,6-DINITROPHENOL WHL WTR SMPL (UG/L)	DBNP	Y
77770	2346TCP WHL SAMP UG/L	XXXXX.XX	2,3,4,6-TETRACHLOROPHENOL IN WHL WTR SMP (UG/L)	2346TETRACHLORPH	Y
34675	2378TCDD WHL SAMP UG/L	XXXXX.XX	2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN W W S (UG/L)	2378 TCDD	Y
34601	24DCPHEN WHL SAMP UG/L	XXXXX.XX	2,4-DICHLOROPHENOL IN WHL WTR SAMPLE (UG/L)	24DICHLOROPHENOL	Y
39730	2,4-D WHL SAMP UG/L	XXXXX.XX	2,4-DICHLOROPHENOXYACETIC ACID WHL WTR SMP (UG/L)	2,4-D	Y
34606	24DMPHEN WHL SAMP UG/L	XXXXX.XX	2,4-DIMETHYLPHENOL IN WHL WTR SAMPLE (UG/L)	2,4-DIMETHYLPHEN	Y
34616	24DNPHEN WHL SAMP UG/L	XXXXX.XX	2,4-DINITROPHENOL IN WHL WTR SAMPLE (UG/L)	24DINITROPHENOL	Y
34611	24DNTOLU WHL SAMP UG/L	XXXXX.XX	2,4-DINITROTOLUENE IN WHL WTR SAMPLE (UG/L)	24DINITROTOLUENE	Y
39740	245T WHL SAMP UG/L	XXXXX.XX	2,4,5-T IN WHL WTR SAMPLE (UG/L)	2,4,5-T	Y
77687	245TCPHE WHL SAMP UG/L	XXXXX.XX	2,4,5-TRICHLOROPHENOL IN WHL WTR SAMPLE (UG/L)	245TRICHLOROPHEN	Y
34621	246TCPHE WHL SAMP UG/L	XXXXX.XX	2,4,6-TRICHLOROPHENOL IN WHL WTR SAMPLE (UG/L)	246TRICHLOROPHEN	Y
77541	26DCPHEN WHL SAMP UG/L	XXXXX.XX	2,6-DICHLOROPHENOL IN WHL WTR SAMPLE (UG/L)	26DICHLOROPHENOL	Y
34626	26DNTOLU WHL SAMP UG/L	XXXXX.XX	2,6-DINITROTOLUENE IN WHL WTR SAMPLE (UG/L)	26DINITROTOLUENE	Y
73532	3CPNITRI WHL SAMP UG/L	XXXXX.XX	3-CHLOROPROPIONITRILE IN WHL WTR SAMPLE (UG/L)	3CHLOROPROPIONIT	Y
73591	3MCANTHR WHL SAMP UG/L	XXXXX.XX	3-METHYLCHOLANTHRENE IN WHL WTR SAMPLE (UG/L)	3METHYLCHOLANTHR	Y
34631	33DCBZID WHL SAMP UG/L	XXXXX.XX	3,3'-DICHLOROBENZIDINE IN WHL WTR SAMPLE (UG/L)	33DICHLOROBENZID	Y

CODE	PRINTOUT ABREV.	REPORTING PRECISION	DESCRIPTION	TURNAROUND DOC APPEARANCE	POSSIBLE NON-DETECT
73557	33DMOBZI WHL SAMP UG/L	XXXXX.XX	3,3'-DIMETHOXYBENZIDINE IN WHL WTR SAMPLE (UG/L)	33DIMETHOXYBENZI	Y
73560	33DMBZID WHL SAMP UG/L	XXXXX.XX	3,3'-DIMETHYLBENZIDINE IN WHL WTR SAMPLE (UG/L)	3,3-DMB	Y
77581	4ABIPHEN WHL SAMP UG/L	XXXXX.XX	4-AMINOBIPHENYL IN WHL WTR SAMPLE (UG/L)	4AMINOBIPHENYL	Y
34636	4BPPETHE WHL SAMP UG/L	XXXXX.XX	4-BROMOPHENYL PHENYL ETHER IN WHL WTR SMPL (UG/L)	4BROMOPHENYL PHE	Y
34641	4CPETHER WHL SAMP UG/L	XXXXX.XX	4-CHLOROPHENYL ETHER IN WHL WTR SAMPLE (UG/L)	4-CHLOROPHENYL E	Y
78133	4M2PENON WHL SAMP UG/L	XXXXX.XX	4-METHYL-2-PENTANONE IN WHL WTR SAMPLE (UG/L)	4METHYL2PENTANON	Y
34646	4NPHENOL WHL SAMP UG/L	XXXXX.XX	4-NITROPHENOL IN WHL WTR SAMPLE (UG/L)	4-NITROPHENOL	Y
78123	44MB2CAN WHL SAMP UG/L	XXXXX.XX	4,4'-METHYLENEBIS(2-CHLOROANILINE) WHL WTR S UG/L	44METHYLENEBIS(2	Y
34657	46DNOCRE WHL SAMP UG/L	XXXXX.XX	4,6-DINITRO-O-CRESOL IN WHL WTR SAMPLE UG/L)	46DINITROOCRESOL	Y
73622	5NOTOLUI WHL SAMP UG/L	XXXXX.XX	5-NITRO-O-TOLUIDINE IN WHL WTR SAMPLE (UG/L)	5NITRO-O-TOLUIDI	Y
73559	712DMBZA WHL SAMP UG/L	XXXXX.XX	7,12-DIMETHYLBENZ(A)ANTHRACENE WHL WTR SAMP (UG/L)	7,12-DMB(A)A	Y

ATTACHMENT 4

GROUNDWATER MONITORING DATA CERTIFICATION

I hereby certify the data on the enclosed tape or diskette is accurately represented in the accompanying printout. To the best of my knowledge, the information reported and the statements made on this printout and tape or diskette are true and correct.

_____ _____

Signature Date

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

BOX 7921
MADISON, WISCONSIN 53707

SEP 2 0 1988

IN REPLY REFER TO: 4430

Mr. Kip R. Whitehead, President
Oakes et-al, Management Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Plan Modification - Barrier Wall
Land Reclamation Ltd. Landfill, License #0572
Racine County, WID 076171008

Dear Mr. Whitehead:

The Bureau of Solid & Hazardous Waste Management has completed its review of a Foth and Van Dyke and Associates, Inc. (FVD) submittal entitled "Barrier Wall Design for the Hazardous Waste Unit" for the Land Reclamation Ltd. (LRL) Landfill. This submittal, which was supplemented by several addenda, was required under Section B of the conditions contained in the Department's March 31, 1988 plan modification letter.

Based upon our review, we believe that this submittal will allow for adequate separation of the solid and hazardous waste areas of the landfill provided that the conditions contained in the enclosed approval are strictly followed. This approval should be attached to the Department's December 19, 1984 plan of operation approval as well as all subsequent approvals, and the conditions of approval incorporated therein.

The Department also takes this opportunity to recount and discuss the development of what we believe is an important issue. In technical discussions during the preparation of the barrier wall submittal, the Department first expressed concern over the proposed use of the B600 trenching machine to install the drainage trench on the hazardous waste side of the barrier. We stated that our primary concerns involved the mandatory use of polyethylene piping versus stiffer PVC pipe and the severe lack of sidefill support provided a nominal 6-inch diameter pipe (6.7-inch outside diameter) in the 10-inch trench established by the machine.

The Department informed LRL and FVD that we had similar concerns at the Waste Management of Wisconsin, inc. - Metro Landfill, and that substantial work had been done both by Waste Management's consultant and the Department to investigate the problem. These materials, consisting of a December, 1987 bound report by Warzyn Engineering and a three-page February 11, 1988 Department memo commenting on the report, were provided to FVD.

In response to our concerns, FVD submitted pipe strength calculations which indicated that excessive deflection of the polyethylene piping would not occur. FVD's calculations used one of the alternative equations (Molin 1981, 1985) promoted by Warzyn Engineering instead of the Iowa Equation. Although FVD followed several recommendations contained in our February 11, 1988 memo regarding proper application of this particular equation, no discussion was provided regarding our basic concerns over the alternative equations or why the Iowa Equation was not used. Simple calculations performed by the Department using the Iowa Equation show excessive deflections even when assuming proper bedding conditions for the pipe. For these reasons, the Department recommended that LRL reconsider use of conventional trenching methods, or at least pursuing some method of creating a significantly wider trench with the machine.

In a July 22, 1988 addendum, FVD's only recommended change was reducing the particle size of the polyethylene pipe bedding from 1½ inches to a gradation having a maximum size of ½ inch. In our view, this change would only marginally improve the bedding conditions and sidefill support of the piping while at the same time, the smaller gravel can be expected to have the negative effect of reducing the permeability of the drainage trench. It is our understanding that conventional trenching methods were used in conditions at least as adverse at the Waste Management-Omega Hills landfill.

Therefore, please be advised that should the trenching machine be used for placement of the west barrier wall drainage trench, the Department may subsequently move to substantially reduce waste fill heights over this piping in order to ensure its continued performance. You should also be aware that failure of this pipe for whatever reason would then violate EPA's criteria for separation of solid and hazardous waste areas and could result in severe limitations on continued filling.

Should you have any questions regarding the contents of this letter ~~of~~ the attached approval, please contact Dennis Mack at (608) 267-9386, Ed Lynch at (608) 266-3084 or Ken Hein at (414) 562-9645.

Sincerely,

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Paul M. Huebner /for L.S.

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

BZ:LS:DM:so32
8809\SW9BARR.EKL

cc: Glen Oakes - LRL
Joe Muratore - LRL
Bill Schultz/Bill Reed - LRL
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Tom Ryan/Tom Sweet - Foth and Van Dyke, Milwaukee
Al Debus/Chuck Slaustas - U.S. EPA, Region V, 5HR/13
Joe Baker/Glen Sternard - U.S. EPA, Region V, 5HR/12
Ken Hein - SED
Robert Hunter - DOJ
Bureau of Legal Council - LC/5
PSS - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION
BARRIER WALL
LAND RECLAMATION LTD., LANDFILL (#0572)
WID 076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Ltd. (LRL) owns and operates a hazardous and solid waste disposal facility located in the City of Racine, Racine County, Wisconsin.

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984 for disposal of nonhazardous solid waste.

3. On August 10, 1987, LRL submitted a Closure and Long-Term Care Plan to the Department addressing closure of the portion of the facility which had accepted hazardous waste. This plan also addressed items covered in the Department's December 19, 1984 conditional plan of operation approval.

4. In response to this submittal, the Department issued a plan modification on March 31, 1988, regarding the closure and long-term care plan and the December 19, 1984 conditional plan of operation approval. This plan modification was entitled "Modifications to the Hazardous Waste Closure and Long-Term Care Plan and Plan of Operation Approval" and included the requirement that LRL submit detailed design plans for a barrier wall separating the hazardous waste unit from future contiguous areas of nonhazardous waste disposal.

5. The information submitted in connection with the modification request, all of which was prepared by Foth and Van Dyke and Associates, Inc. includes the following:

   a. A May 31, 1988 report entitled "Barrier Wall Design for the Hazardous Waste Unit" and 27 associated plan sheets received on June 8, 1988,

   b. Additional information concerning refuse excavation dated July 21, 1988 and received on June 22, 1988, and

   c. Additional information concerning the construction of the barrier wall and drainage structure dated July 22, 1988 and August 22, 1988 and received on July 27 and August 23, 1988, respectively.

6. Additional documents considered in connection with this plan modification included the Department's March 31, 1988, approval as well as the correspondence/documents considered in its review, and subsequent plan submittals including the "Containment Structure Design for the Hazardous Waste Unit." The Department also considered recent submittals by Waste Management of Wisconsin, Inc. regarding the strength of plastic piping and numerous technical references used in review of those submittals. A number of technical references were also consulted in review of the proposed slurry wall.

CONCLUSIONS OF LAW

1. Land Reclamation, Ltd. (LRL) is an existing solid waste disposal facility as defined in ss. 144.43(5), Stats. and an existing hazardous waste facility as defined in s. 144.61(5m), Stats., and a hazardous waste landfill as defined in s. NR 181.04(55), Wis. Adm. Code.

2. Based upon the foregoing Findings of Fact, the Department has the authority pursuant to s. 144.44(3), Stats., to modify the Plan of Operation Approval for the LRL landfill.

3. The Department has the authority to determine closure, long-term care and termination standards for hazardous waste facilities pursuant to ss. 144.441 (1m) and 144.62(8)(e), Stats. These requirements are listed in ss. NR 181.4 2(8) and (9) and 181.44(12) and (14) and 181.49, and 181.52, Wis. Adm. Code.

4. The Department has the authority to issue an interim license pursuant to s. 144.64(2)(c), Stats., to a person who operates a hazardous waste facility in existence on November 19, 1980, if the person applies for a license and complies with conditions and restrictions prescribed by rule or special order by the Department pending the decision on the issuance of a final operating license. LRL's interim license application was denied by the Department on December 10, 1982. That denial required LRL to close the hazardous waste area in existence at that time. LRL has not closed the hazardous waste area.

5. LRL does not have an approved plan of operation to operate a hazardous waste disposal facility pursuant to s. 144.44(3), Stats. and s. NR 181.44(7) , Wis. Adm. Code, and consequently is a nonapproved hazardous waste disposal facility.

6. The conditions contained in the Modification to the Closure and Long-Term Care Plan and Plan of Operation Approval are needed to ensure compliance with the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Codes.

7. In accordance with the foregoing, the Department has authority under s. 144 .44 Stats., to issue the following conditional plan modification.

CONDITIONAL PLAN MODIFICATION

The Department hereby approves the proposed barrier wall design and authorizes LRL to begin construction of the barrier wall subject to the following conditions:

1. All construction and documentation for the west barrier wall shall be in accordance with Foth & Van Dyke's submittals detailed in Finding of Fact 5, the conditions of this plan modification and all applicable conditions contained in past approvals.

2. Should the Department determine at any time prior to the end of the site's long-term care period that problems have developed with any aspect of the construction associated with the west barrier wall project, LRL shall remediate the problems to the Department's satisfaction.

3. Within 60 days of the date of this letter, LRL shall submit a report to the Department which provides an accurate monthly summary of leachate extraction volumes and leachate quality since extraction began in corridor number 4. This report shall include, but not be limited to, the following:

   a. Identification of when each corridor began operation and explanations of any apparent anomalies in leachate quantity or quality.

   b. Identification and description of all leachate extraction points which have been used over time and for what periods they were used.

   c. Explanations of how leachate volume estimates have been obtained over time, both before and after the sewer hookup. The type and accuracy of any flow meters utilized shall be detailed. Both the manufacturers' recommended calibration procedures as well as those followed shall be fully described. In addition, the accuracy of flow estimates obtained from pump electricity usage shall be addressed, if applicable.

4. Due to odor concerns, the leachate collection pipe and gravel trench conveying leachate eastward along the northern perimeter of the old City of Racine site shall be temporarily plugged at 6+50E, as opposed to allowing it to drain into a sump. Within 30 days of the date of this letter, a proposed design for permanently connecting this line to a new manhole 1 shall be submitted for Department's review and approval. The

submittal shall clearly explain how this design relates to the revised liner and leachate collection system for corridors 11 and 12.

5. All north-south trending segments of the lower leachate line located in the saddle area as well as the existing transfer line between manholes 1 and 2 shall be removed and the removal documented in the west barrier wall construction documentation.

6. All piping entering either the recompacted clay surround of the permanent lift station or any portions of the west barrier wall shall be nonperforated. Alternative materials are not acceptable for construction of the clay surrounds of lift stations or manholes.

7. An additional manhole to be constructed and tested in the same manner as manholes 1 and 2, shall be placed at grid location 9+25N/8+00E to allow improved cleanout access to the west barrier wall leachate collection system. Each of the two cleanout risers shall be secured to the sides of the manhole and extended to its top.

8. The portion of the west barrier wall leachate collection system located east of grid line 8+00E shall be constructed with Schedule 80 or 120 PVC piping as opposed to polyethylene material.

9. Manholes 1 and 2 as well as the additional manhole required at grid location 9+25N/8+00E shall be constructed with a minimum 5-foot recompacted clay surround up to the surface of the adjacent clay liners. From that point upward, the manholes shall be surrounded with a minimum of twenty feet of soil compacted to at least 90% of standard Proctor density. A minimum of 2 density tests shall be performed on each lift of the manholes' soil surround. The results of the initial density testing shall be included in the construction documentation for the west barrier wall. As filling progresses and the 20-foot soil surround is extended vertically, the density testing results shall be included in each annual report.

10. In order to improve cleanout capabilities from new manholes 1 and 2, sweep bends shall be used to extend corridor 7 leachate piping to the manholes. The bends shall be 6-inch Schedule 80 or 120 PVC. All piping located within 50 feet of manholes 1 and 2 shall be Schedule 120 PVC.

Sch 120 for All of transfer line between MH-1 & 2

11. Within 30 days of completing construction of manhole 2, cleanout of the two corridor 7 leachate collection lines shall be attempted from manhole 2. If, in either line, the cleaning device used cannot be advanced eastward to at least grid line

19+00E, LRL shall submit a proposal for the Department's review and approval to install an additional manhole or manholes to the north of manhole 2 and nonperforated piping extended westward from grid locations 13+00N/12+90E and/or 12+20N/12+30E to the manhole(s). The Department shall be notified at least one week in advance of when this cleanout attempt will take place. Documentation of the cleanout attempt and proposal for additional manholes, if appropriate, shall be included in the construction documentation for the west barrier wall.

12. A minimum of 30 feet of recompacted clay liner shall be extended westward from manholes 1 and 2 and northward from grid location 9+25N/8+00E to manhole 1 in order to provide sufficient room to key into the liners for adjacent corridors. The location of the edge of this liner and the results of all required soil testing shall be provided in the west barrier wall construction documentation.

13. The "pump on" elevation for the submersible pump to be placed in manhole 2 shall be located below the inlet of the transfer pipe leading from manhole 1.

14. All collection and transfer piping associated with the west barrier wall and all manholes shall be bedded in gravel with a maximum particle size of one inch. The gravel bedding for all nonperforated PVC pipes shall be completely enclosed in an appropriately sized nonwoven geotextile and a minimum of five feet of recompacted clay extended vertically in all directions from the gravel bedding. This includes the leachate transfer piping between manholes 1 and 2. Within five feet of where these nonperforated lines begin and proceeding through the recompacted clay barrier wall, PVC or HDPE sheeting shall be secured around the pipe in the same manner as are anti-seep collars. The sheeting shall extend through the gravel bedding and a minimum of two feet into the recompacted clay in all directions.

15. If the B600 trenching machine is used to place the collection pipe along the western perimeter of the hazardous waste unit, the gravel bedding shall meet the specifications contained in Exhibit No. 6 of the Foth & Van Dyke's July 22, 1988 Addendum No. 1 to their May 31, 188 submittal entitled "Barrier Wall Design for the Hazardous Waste Unit." As stated in the attached cover letter, the Department strongly recommends that conventional construction techniques be used rather than a trenching machine.

16. Leachate extraction shall continue as normal during the reconstruction of manholes 1 and 2.

17. Construction of the slurry wall and entire collection system associated with the west barrier wall proposal shall be completed by October 31, 1988. Construction documentation for this work shall be submitted no later than January 1, 1989. Construction of the barrier wall along the western perimeter of the hazardous waste unit shall occur incrementally as filling against the HWU progresses. Unless otherwise approved by the Department, the barrier wall shall be completed in three increments with construction documentation being submitted within 60 days of completing each increment.

18. Rather than using the program outlined in Appendix M of Foth & Van Dyke's May 31, 1988 report "Barrier Wall Design for the Hazardous Waste Unit," all clay placed during construction of the west barrier wall shall be tested in accordance with ch. NR 516.05(1)(a) through (c), Wis. Adm. Code. In addition, a minimum of 5 density tests shall be performed at various levels within the recompacted clay surround of each leachate transfer pipe, for every 100 linear feet of the transfer line running between manholes 1 and 2.

19. In addition to the periodic performance of sand cone density tests, each nuclear density meter used for the project shall be calibrated daily as per the manufacturer's recommended procedures. The results of each calibration shall be included in the required construction documentation.

20. During construction of the slurry wall, unit 3 soil samples shall be obtained every 100 linear feet and analyzed for grain size to the #200 sieve and Atterberg limits. The results of this testing shall be included in the west barrier wall construction documentation.

21. Clarifying item 2 under section J of our March 31, 1988 approval (see page 36), the Department requires the following:

    a. Grain size analyses to the #200 sieve shall be performed at a rate of once every 1,000 cubic yards on the sand drainage blanket to be placed on both sides of the barrier wall and once every 400 linear feet on the bedding material utilized for all leachate collection and transfer piping associated with the west barrier wall and the containment structure.

    b. Remolded laboratory hydraulic conductivity tests shall be performed at a rate of one for every 2,500 cubic yards of sand drainage blanket.

22. All leachate collection and transfer piping constructed as part of the west barrier wall, including manholes 1 and 2, shall be ~~cleaned out~~ CLEANED OUT (jetted) immediately after installation and annually thereafter along with all other previously installed

lines. Documentation of the initial cleanout, consisting of a narrative describing the procedure and any problems encountered, as well as plan sheets and photographs, shall be submitted as part of the west barrier wall construction documentation. Also included shall be a listing of each time the collection system has been cleaned, which lines were cleaned each time, the distance the cleaning equipment penetrated from each cleanout point, and the dates of documentation submitted to the Department.

23. Within 30 days of the date of this letter, LRL shall submit for the Department's review and approval proposed pressure testing methods and procedures for each of three segments of leachate transfer piping. These segments are:

    a. The new gravity line to be located between manholes 1 and 2.

    b. The 4-inch force main extending from manhole 2 to manhole 7 as identified in the set of seven plan sheets submitted by Nielsen, Madsen and Barber entitled "Proposed Sanitary Sewer for Land Reclamation, Ltd." which were revised several times, and were ultimately received by the Department on July 25, 1988.

    c. The 8-inch gravity sewer extending from manhole 7 to Oakes Road also as identified in the NMB plans received on July 25, 1988.

    The methods proposed shall be in accordance with accepted practices for sanitary sewers and force mains, and all references utilized in developing the methods shall be identified. In particular, the pressure drop or level of leakage which would constitute failure shall be clearly specified and justification given for this standard. Unless otherwise determined by the Department, the results from the pressure testing shall be submitted with the construction documentation for the west barrier wall.

24. All bentonite/water slurry utilized shall be made from the City of Racine public water supply and Slurry Ben 90 or Fed-Jel bentonite. The prepared weight of the bentonite/water supply shall be 64 pounds per cubic foot or greater. The Marsh funnel viscosity shall be 40 seconds or greater, and the filtrate loss as measured in an API filter press cell shall be no more than 30 cc in 30 minutes at 100 psi. When placed in the trench, the bentonite/water slurry shall have a unit weight at least 15 pounds per cubic foot less than that of the soil/bentonite slurry wall backfill mix.

25. The fluid level in the slurry wall trench shall be maintained a minimum of two feet above the surrounding groundwater level at all times.

26. As previously required in condition C.2.g. of the Department's March 31, 1988 approval, the base of the slurry wall shall extend a minimum of three feet into unit 3 soils or three feet below the base of the adjacent drainage trench, whichever is lower. The upper surface of the soil/bentonite slurry wall shall be keyed into the recompacted clay barrier wall as shown in detail 3/26 on sheet B-26 of the "Barrier Wall Design" plan sheets dated May 31, 1988. The minimum trench width shall be 30 inches.

27. Due to technical concerns regarding the geologic variability of unit 2 and its undocumented level of contamination, as well as regulatory concerns regarding separation of solid and hazardous waste areas, unit 2 soils shall not be used in construction of the soil/bentonite slurry wall. Unless tested and handled in accordance with the Department's August 18, 1988 letter, all unit 2 soils excavated shall be placed in the hazardous waste unit.

28. All soils used in construction of the soil/bentonite slurry wall shall be obtained from uncontaminated portions of units 1 or 3, shall have a minimum P200 content of 50% by weight and shall be classified as a CL or CH under the unified soil classification system.

29. All portions of the soil/bentonite backfill mixture shall have a minimum unit weight of 100 pounds per cubic foot, a slump ranging from 2 to 6 inches, and a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec.

30. As required by condition A.5. of the Department's March 31, 1988 approval, Foth & Van Dyke shall provide a full-time inspector to observe Geo•Con's work, perform on-site quality control testing and collect samples for subsequent laboratory testing. This person shall have technical expertise and work experience in slurry wall construction.

31. At a minimum, Geo•Con shall perform the materials quality control program outlined in Figure No. 4-2 of Appendix M of Foth & Van Dyke's May 1988 reported entitled "Barrier Wall Design for the Hazardous Waste Unit," and turn this data over to the on-site inspector each day.

32. The following slurry wall control program shall be performed by Foth & Van Dyke for the west barrier wall project:

a. Water used for slurry production shall be sampled twice per month or a minimum of four times during the project for pH, conductivity and total hardness.

b. Bentonite samples shall be analyzed for grain size and Atterberg limits at least twice per month, or a minimum of four times during the project.

c. Backfill soils shall be visually inspected on a continuous basis and samples obtained and tested for grain size and Atterberg limits once for every 100 feet of trench.

d. Bentonite/water slurry samples as prepared for placement in the trench shall be tested twice daily (once in the morning and once in the afternoon) for unit weight using a mud balance and viscocity using the Marsh funnel test. Filtrate loss shall be determined daily using an API filter press cell.

f. Soil/bentonite mixture samples shall be obtained from the trench:

   i. During each of the first three days of backfilling and at least once every 100 feet of trench thereafter, and tested for hydraulic conductivity using a flexible wall permeameter and grain size to 5 microns.

   ii. At least twice daily and tested for slump and unit weight.

33. At maximum 20-foot intervals, Foth & Van Dyke's inspector shall determine both the elevation of the top of unit 3 and the bottom of the key penetration using a rigid probe calibrated in foot increments. Each depth measurement shall be referenced to pre-established stations along the wall alignment.

34. As backfilling is occurring, Foth & Van Dyke's inspector shall also regularly use the previously mentioned rigid probe to ensure that the key is free of sediment. Any sediment encountered shall be removed prior to backfilling. The inspector shall also probe the excavated trench at the beginning an end of each day of operation to determine if any sidewall sloughing has occurred. Any soils which have sloughed shall be removed and the trench bottom redocumented.

35. Both Geo•Con and Foth & Van Dyke shall certify in the west barrier wall construction and documentation that construction of the slurry wall was completed in compliance with the proposed plans and all Department conditions, with all exceptions noted. Foth & Van Dyke shall also provide similar certification for all other construction associated with the west barrier wall project.

36. The Department's solid waste investigator shall be contacted a minimum of one week prior to beginning each of the construction event listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm. Code. The inspection fees for construction shall be paid at the time the construction documentation is submitted.

    Construction Events:

    a. Construction of manholes 1, 2 and the additional manhole required at 9+25N/8+00E.

    b. Lift station construction.

    c. Leachate lines associated with slurry wall construction.

    d. Slurry wall construction.

    e. Keying of the clay barrier wall into the slurry wall and adjacent liner segments.

The Department retains the right to require the submittal of additional information or to modify this conditional plan modification at any time if, in the Department's opinion, further modifications are necessary. The conditions of this approval modification do not supercede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Paul M. Huebner /for L.S.
Lakshmi Sridharan, Ph.D, P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

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Dennis M.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

Box 7921
Madison, Wisconsin 53707

December 14, 1988 IN REPLY REFER TO: 4430

Mr. Kip R. Whitehead, President
Oakes et-al. Management Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Plan Modification - Containment Structure
Land Reclamation, Ltd. Landfill, License #0572
Racine County, WID 076171008

Dear Mr. Whitehead:

The Bureau of Solid and Hazardous Waste Management has completed its review of a Foth and Van Dyke and Associates, Inc. (FVD) submittal entitled "Containment Structure Design for the Hazardous Waste Unit." This submittal, which was supplemented by several addenda, was required under Section C of the conditions contained in the Department's March 31, 1988 plan modification letter.

Provided that the conditions contained in the enclosed approval are strictly followed, we believe that implementation of thia proposal will significantly reduce leachate and gas migration within unit 2 along the south and west perimeters of the landfill. This approval should be attached to the Department's December 19, 1984 plan of operation approval as well as all subsequent approvals, and the conditions of approval incorporated therein.

Should you have any questions regarding the contents of this letter, please contact Dennis Mack at (608) 267-9386 or Ken Hein at (414) 562-9645.

Sincerely,

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

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cc: Glenn Oakes- LRL
Ed Perrey - LRL
Joe Muratore - LRL
Fred Larson - City of Racine
Tom Ryan/Tom Sweet - FVD - Milwaukee
Mary Carrington - Town of Mount Pleasant
Joe Baker/Glenn Sternard- US EPA, Region V, 5HR/12
Al Debus/Chuck Slaustas - US EPA, Region V, 5HR/13
Ken Hein - SED
Robert Hunter - DOJ
Bureau of Legal Council - LC/5
PSS - SW/3
Ed Lynch - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION
CONTAINMENT STRUCTURE
LAND RECLAMATION LTD., LANDFILL (#0572)
WID 076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Ltd. (LRL) owns and operates a hazardous and solid waste disposal facility located in the City of Racine, Racine County, Wisconsin.

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984 for disposal of nonhazardous solid waste.

3. On August 10, 1987, LRL submitted a Closure and Long-Term Care PLan to the Department addressing closure of the portion of the facility which had accepted hazardous waste. This plan also addressed items covered in the Department's December 19, 1984 condition plan of operation approval.

4. In response to LRL's August 10, 1987 submittal, the Department issued a plan modification on March 31, 1988, regarding the closure and long-term care plan and the December 19, 1984 conditional plan of operation approval. This plan modification, which was entitled "Modifications to the Hazardous Waste Closure and Long-Term Care Plan and Plan of Operation Approval", included a condition that LRL submit detailed plans for the containment structure originally required in our December 19, 1984 plan of operation approval.

5. The Foth and Van Dyke and Associates, Inc. (FVD) submittals comprising the modification request include the following:

   a. A June 28, 1988 report titled "Containment Structure Design for the Hazardous Waste Unit" and a set of 12 associated plan sheets dated June 30, 1988 and titled "Croundwater Containment Structure." The report was received by the Department on July 1, 1988 and the plan sheets on June 30, 1988.

   b. A July 21, 1988 letter received on July 22, 1988 requesting approval to excavate soils in the area of the Containment Structure and then place the two-foot thick recompacted clay working surface.

   c. An August 12, 1988 letter and revised plan sheets A-3 and A-4 relating to the plan sheets described in a. above.

6. Additional documents considered in connection with this plan modification include the Department's March 31, 1988 approval as well as both the correspondence and documents considered in its review and subsequent submittals required as a result of it.

7. The correct plan review fee of $1,500 has been applied against the $4,500 refund requested by LRL after withdrawing their proposed feasibility study.

CONCLUSIONS OF LAW

1. Land Reclamation, Ltd. (LRL) is an existing solid waste disposal facility as defined in ss. 144.43(5), Stats. and an existing hazardous waste facility as defined in s. 144.61(5m), Stats., and a hazardous waste landfill as defined in s. NR 181.04(55), Wis. Adm. Code.

2. Based upon the foregoing Findings of Fact, the Department has the authority pursuant to s. 144.44, Stats., to modify the Plan of Operation Approval for the LRL landfill.

3. The Department has the authority to determine closure, long-term care and termination standards for hazardous waste facilities pursuant to ss. 144.441 (1m) and 144.62(8)(e), Stats. These requirements are listed in ss. NR 181.4 2(8) and (9) and 181.44(12) and (14) and 181.49, and 181.52, Wis. Adm. Code.

4. The Department has the authority to issue an interim license pursuant to s. 144.64(2)(c), Stats., to a person who operates a hazardous waste facility in existence on November 19, 1980, if the person applies for a license and complies with conditions and restrictions prescribed by rule or special order by the Department pending the decision on the issuance of a final operating license. LRL's interim license application was denied by the Department on December 10, 1982. That denial required LRL to close the hazardous waste area in existence at that time. LRL has not closed the hazardous waste area.

5. LRL does not have an approved plan of operation to operate a hazardous waste disposal facility pursuant to s. 144.44(3), Stats. and s. NR 181.44(7) , Wis. Adm. Code, and consequently is a nonapproved hazardous waste disposal facility.

6. The conditions contained in the Modification to the Closure and Long-Term Care Plan and Plan of Operation Approval are needed to ensure compliance with the applicable portions of chs. NR 500 through 520 and ch. NR 181, Wis. Adm. Codes.

7. In accordance with the foregoing, the Department has authority under s. 144.44 Stats., to issue the following conditional plan modification.

Conditional Plan Modification

The Department hereby approves the proposed containment structure subject to the following conditions:

1. All construction and documentation for the containment structure shall be in accordance with Foth and Van Dyke's submittals detailed in Finding of Fact 5, the conditions of this plan modification and all applicable conditions contained in past approvals.

2. Should the Department determine at any time prior to the end of the site's long-term care period that problems have developed with any aspect of the containment structure, LRL shall remediate the problems to the Department's satisfaction.

3. Within 30 days of the date of this approval, LRL shall submit plans showing the proposed connection of each lift station associated with the containment structure to the sewer just south of the landfill. These connections shall not be constructed until Department approval has been obtained.

4/13/89

4. Within 120 days of the date of this approval, LRL shall submit a report assessing the integrity of the sewer segments currently utilized or proposed to be utilized by the landfill from each point of leachate entry to the wastewater treatment facility. This assessment shall include:

   a. A description of the location, type, size and condition of each segment of sewer;

   b. A summary of sewage flow rates in the various sewer segments and any available infiltration/inflow data; and

   c. A conclusion based upon the information required above, and any other information believed to be relevant, regarding the possibility and likelihood of leachate leakage from any portion of the sewer system causing groundwater impacts. We strongly recommend that the report provide documentation that the City of Racine's Public Works Director concurs with or at least has noted the conclusion drawn.

   Should the Department determine that continued sewering of leachate poses an unacceptable risk to groundwater quality, LRL shall provide alternate means of leachate handling acceptable to the Department.

5. As opposed to the design contained in the submitted plans, the western segment of the containment structure, from grid line 2+80N southward, shall be lowered such that the invert elevation of the leachate collection pipe at manhole 5 is 645 feet (MSL). The elevations of the manhole sump, slurry wall and recompacted clay manhole surround shall also be lowered accordingly so that the design guidance given in Section C of the Department's March 31, 1988 approval is satisfied.

6. As required in our September 20, 1988 approval of the barrier wall, all piping entering the recompacted clay surround of the permanent lift station (designated as manhole 6) shall be nonperforated. Alternative materials are not acceptable for construction of the clay surround of the lift station.

I phoned Tom Ryan of F+VD on 3/6/89 + told him that NO clay encapsulation needed for manholes 7+9, but the remainder had to have it.

7. A minimum of five feet of clay compacted to at least 90% modified Proctor density shall be placed below and around each of the six manholes associated with the containment structure. The clay shall be extended vertically to at least five feet above the highest pipe entrance. A minimum of two density tests shall be performed on each lift of the manholes' soil surround.

8. The pump activation controls for the submersible pumps in each of the three lift stations shall be located below the level of the pipes entering them.

9. Within 30 days of the date of this letter, LRL shall submit a report to the Department for our review and approval evaluating the potential for the granular backfill of the proposed containment structure leachate collection system to become clogged by the inflow of finer grained adjacent soils. The potential benefits of using a much smaller sized backfill gradation shall also be addressed.

   In addition, the report shall indicate whether or not the polyethylene pipe to be used will include a geotextile fabric "sock" and shall provide justification for the choice made. Finally, the report shall include detaila of any proposed changes to the collection system design resulting from this investigation. Construction of the collection system shall not begin until written Department approval of this report is obtained.

10. Appropriately sized geotextile shall be placed over the top of all portions of the leachate collection trench associated with both the containment structure and the west barrier wall.

11. All clay placed during construction of the containment structure shall be tested in accordance with ch. NR 516.05(1)(a) through (c) Wis. Adm. Code. Lift heights shall not exceed six inches after compaction, and density testing shall be performed every 100 linear feet on each lift.

12. The clean soil backfill required in the construction excavation shall be placed in maximum six-inch lift heights to a density of at least 90% modified proctor. Density testing shall be performed every 100 linear feet on each lift, and modified Proctor curves developed for each 5,000 cubic yards of soil placed.

13. In addition to the periodic performance of sand cone density tests, each nuclear density meter used for the project shall be calibrated daily as per the manufacturer's recommended procedures. The results of each calibration shall be included in the required construction documentation.

14. During construction of the slurry wall, unit 3 soil samples shall be obtained every 100 linear feet and analyzed for grain size to the #200 sieve and Atterberg limits. The results of this testing shall be included in the containment structure construction documentation.

15. Grain size analyses to the #200 sieve shall be performed at least once every 400 linear feet on the gravel bedding utilized for all leachate collection and transfer piping associated with the containment structure.

16. All leachate collection and transfer piping constructed as part of the containment structure shall be cleaned immediately after installation and annually thereafter along with all previously installed lines. All cleaning shall be done with a hydraulic jet type device. Documentation of the initial cleanout, consisting of a narrative describing the procedure and any problems encountered, as well as plan sheets and photographs, shall be submitted as part of the containment structure construction documentation.

17. All bentonite/water slurry utilized shall be made from the City of Racine public water supply and Slurry Ben 90 or Fed-Jel bentonite. The prepared weight of the bentonite/water supply shall be 64 pounds per cubic foot or greater. The Marsh funnel viscosity shall be 40 seconds or greater, and the filtrate loss as measured in an API filter press cell shall be no more than 30 cc in 30 minutes at 100 psi. When placed in the trench, the bentonite/water slurry shall have a unit weight at least 15 pounds per cubic foot less than that of the soil/bentonite slurry wall backfill mix.

18. The fluid level in the slurry wall trench ahall be maintained a minimum of two feet above the surrounding groundwater level at all times.

19. As previously required in condition C.2.g. of the Department's March 31, 1988 approval, the base of the slurry wall shall extend a minimum of three feet into unit 3 soils or three feet below the base of the adjacent drainage trench, whichever is lower. The minimum trench width shall be 30 inches.

20. Due to technical concerns regarding the geologic variability of unit 2 and its undocumented level of contamination, as well as regulatory concerns regarding separation of solid and hazardous waste areas, unit 2 soils shall not be used in construction of the soil/bentonite slurry wall. Unless tested and handled in accordance with the Department's August 18, 1988 letter, all unit 2 soils excavated shall be placed in the hazardous waste unit. Any waste encountered along the south or west perimeter of the old City of Racine landfill shall be removed and placed in Corridor 7.

21. All soils used in construction of the soil/bentonite slurry wall shall be obtained from uncontaminated portions of units 1 or 3, shall have a minimum P200 content of 50% by weight and shall be classified as a CL or CH under the Unified Soil Classification System.

22. All portions of the soil/bentonite backfill mixture shall have a minimum unit weight of 100 pounds per cubic foot, a slump ranging from 2 to 6 inches, and a maximum hydraulic conductivity of $1x10^{-7}$ cm/sec.

23. As required by condition A.5. of the Department's March 31, 1988 approval, Foth & Van Dyke shall provide a full-time inspector to observe Geo•Con's

work, perform on-site quality control testing and collect samples for subsequent laboratory testing. This person shall have technical expertise and work experience in slurry wall construction.

24. At a minimum, Geo•Con shall perform the materials quality control program outlined in Figure No. 4-2 of Appendix H of Foth & Van Dyke's May 1988 reported entitled "Containment Structure Design for the Hazardous Waste Unit," and turn this data over to the on-site inspector each day.

25. The following slurry wall control program shall be performed by Foth & Van Dyke for the containment structure project:

    a. Water used for slurry production shall be sampled twice per month or a minimum of four times during the project for pH, conductivity and total hardness.

    b. Bentonite samples shall be analyzed for grain size and Atterberg limits at least twice per month, or a minimum of four times during the project.

    c. Backfill soils shall be visually inspected on a continuous basis and samples obtained and tested for grain size and Atterberg limits once for every 100 feet of trench.

    d. Bentonite/water slurry samples as prepared for placement in the trench shall be tested twice daily (once in the morning and once in the afternoon) for unit weight using a mud balance and viscosity using the Marsh funnel test. Filtrate loss shall be determined daily using an API filter press cell.

    f. Soil bentonite mixture samples shall be obtained from the trench:

        i. During each of the first three days of backfilling and at least once every 100 feet of trench thereafter, and tested for hydraulic conductivity using a flexible wall permeameter and grain size to 5 microns.

        ii. At least twice daily and tested for slump and unit weight.

26. Both Geo•Con and Foth & Van Dyke shall certify in the containment structure construction documentation that construction of the slurry wall was completed in compliance with the proposed plans and all Department conditions, with any exceptions noted. Foth & Van Dyke shall also provide similar certification for all other construction associated with the containment structure project.

27. The Department's Southeast District solid waste investigator and Central Office engineer shall be contacted a minimum of one week prior to beginning each of the construction events listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with s. NR 520.04(5), Wis. Adm.

Code. The inspection fees for construction shall be paid at the time the construction documentation is submitted.

Construction Events:

a. Construction of manhole 6.

b. Installation of the leachate collection trench associated with the containment structure.

c. Slurry wall installation.

The Department retains the right to require the submittal of additional information or to modify this conditional plan modification at any time if, in the Department's opinion, further modifications are necessary. The conditions of this approval modification do not supercede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D, P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny
Secretary

Box 7921
Madison, Wisconsin 53707

NOV 17 1989

IN REPLY REFER TO 4410-2

Mr. Phillip Cali
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Construction Documentation Approval for the Hazardous Waste Unit North Barrier Wall and the East and North Sidewalls of Corridor No. 7 - Land Reclamation, Ltd., License No. 0572, Racine County, WI.

Dear Mr. Cali:

I am pleased to inform you that the construction documentation submitted for the hazardous waste north barrier wall and the east and north sidewalls of Corridor 7 at your disposal facility has been formally approved. Although a verbal approval has been given and waste filling has taken place, this letter serves to formally approve the submittal. This approval should be attached directly to the plan of operation approval issued on December 19, 1984.

The required sand blanket was not placed on the hazardous waste side of the hazardous waste north barrier wall. To compensate this, seven gas and leachate wells were installed in the bench of phase I of the hazardous waste unit north barrier wall. These wells will compensate for the sand blanket by venting the gas and creating a permeable conduit for the leachate to reach the leachate collection lines.

The clay for the north and east sidewalls was placed and compacted in 12 inch lifts instead of the required 6 inch lifts. Also, about seven percent of the samples tested failed to meet the specified liquid limit of 30% and ten percent of the samples did not meet the required plasticity index of 15%. However, the compaction and permeability test results were more than adequate, and therefore we are approving the clay and clay placement.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid and Hazardous Waste Management

cc: Ken Hein - SED
Mary Carrington - Town of Mt. Pleasant
Fred Larson - City of Racine
Chuck Slaustas/Al Debus - U.S. EPA, Region V, 5Hs/12
Laura Ladisio - U.S. EPA, Region V, 5HE/12
Solid Waste Management Section - SW/3
Hazardous Waste Management Section - SW/3
Glenn Oakes - LRC
Joe Muratore - LRC, Attorney
Tom Ryan/Tom Sweet - Foth & Van Dyke
Ted Juszczyk - Creative Resource Ventures
Tom Just
PSS - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL CONSTRUCTION DOCUMENTATION

APPROVAL FOR THE
LAND RECLAMATION, LTD. LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. Foth & Van Dyke and Associates, Inc. (FVD), on behalf of LRL, submitted construction documentation required by condition 60 of the plan of operation approval.

4. The information submitted as construction documentation includes the following:

   a. A report submitted to the Department by FVD, on behalf of LRL, entitled, "Construction Observation Report for the Land Reclamation, Ltd. Landfill, Corridor No. 7." The report was received by the Department on December 16, 1986. Appropriate plan review fees have been submitted.

   b. A report submitted to the Department by FVD, on behalf of LRL, entitled, "Construction Observation Report for the Land Reclamation, Ltd. Landfill, Corridor No. 7, Addendum No. 1." The report was received by the Department on February 5, 1987.

   c. A report submitted to the Department by FVD, on behalf of LRL, entitled, "Construction Observation Report for Phase II Construction of the North Barrier Wall at the Land Reclamation, Ltd. Landfill." The report was received by the Department on December 10, 1987.

   d. A report submitted to the Department by FVD, on behalf of LRL, entitled, "Construction Observation Report for Phase III of the North Barrier Wall - Land Reclamation, Ltd." The report was received by the Department on August 4, 1988.

   e. A report submitted to the Department by FVD, on behalf of LRL, entitled, "Construction Observation Report - Phase II Construction of the Corridor No. 7 - East and North Sidewall at

the Land Reclamation, Ltd. Landfill." The submittal was dated March 7, 1988.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The EPA's letter to the Department dated November 13, 1986, which outlines the requirements for a hydraulic barrier.

   b. The Department's February 13, 1987 letter to deny the construction documentation for Corridor 7.

   c. The Department's June 15, 1987 approval to initiate filling in Corridor 7.

   d. A letter dated September 13, 1989, sent to the Department by Creative Resource Ventures, Ltd. proposing a new design for the north sidewall.

   e. Other Departmental correspondence.

6. The conditions set forth below are needed to assure that the environment is adequately protected.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for the Land Reclamation Company Landfill, subject to the following condition:

1. Within 90 days of the date of this letter, a written explanation shall be submitted to the Department as to the condition of the two extended leachate head wells in Corridor 7.

2. The two Corridor 7 cleanouts and the Corridor 6 cleanout surface anchors shall be reconstructed so they comply with the Department's December 19, 1984 plan of operation approval. A report shall be submitted to the Department within 90 days of the date of this letter documenting the reconstruction of the cleanouts.

3. The clay liner shall meet the required clay specifications and be properly documented prior to splicing the existing clay liner with the clay liner sidewall. This keying of the liner and sidewall shall be specifically addressed in all subsequent construction documentation.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: NOV 17 1999

DEPARTMENT OF NATURAL RESDURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Cindy M. Cook

Cindy M. Cook, Environmental Engineer
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Ken Wade

Ken Wade, Hydrogeologist
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

WISCONSIN
DEPT. OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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File Ref: FID #252076990
Racine Co.
SW
Approvals

JUL 2 9 1991

Mr. Rick Jernigan, Operations Manager
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Facility Post-Construction Documentation Approval, East Slope Final Clay Cover, Land Reclamation Landfill, #0572, Racine County, WI.

Dear Mr. Jernigan:

I am pleased to inform you that your Facility Post-Construction Documentation has been approved for the clay final cover of the east slope of your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

Construction of the final clay cap for the Land Reclamation Company Landfill (LRC) had been completed in July, 1985, but was not properly documented at that time. Post-construction documentation was performed during the last half of 1990, and the results submitted to the Department in a report from Warzyn, Inc. dated April, 1991.

This letter approves the construction of the clay portion of the final cover system of the east slope of your facility between Grid Line 26+00E and 26+80E with the northerly and southerly limits as shown in the submitted drawings, which is approximately between Grid Line 5+00N and 10+00N. Portions of the four foot clay cover material west of Grid Line 26+00E and east of line 26+80E will be reconstructed during the 1991 construction activities to correct deficiencies found in these areas.

Mr. Jernigan

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

cc: Ken Hein - SED
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Chuck Slaustas/Al Debus - U.S. EPA, Region V, 5HE/12
Ed Lynch - HW/3
Meshkat Assian - Warzyn Engineering, Inc. (Chicago office)
Todd Watermolen - Creative Resource Ventures
PSS -SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINOINGS OF FACT

The Oepartment finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. Warzyn Engineering, Inc., on behalf of LRC, submitted construction documentation required by condition 54 of the plan of operation approval.

4. The information submitted as construction documentation includes a report submitted by Warzyn Engineering, Inc., on behalf of LRC, entitled, "Post-Construction Documentation Report, East Slope Final Clay Cover, Land Reclamation Landfill," and dated April, 1991. The $1000 construction documentation fee was received on May 2, 1991.

5. Additional documents considered in connection with the review of the construction documentation include the following:
   a. The Oecember 19, 1984 plan of operation approval.
   b. The March 31, 1988 modification to the hazardous waste closure and long-term care plan.
   c. A September 5, 1990 letter from Warzyn, Inc. to the Department proposing an alternative approach for determining the percent compaction of the in-place clay cover material.
   d. A September 26, 1990 letter from the Department to Warzyn, Inc. approving the approach for determining compaction for the in-place clay cover materials.
   e. A December 4, 1990 letter from Warzyn, Inc. to the Department presenting schematic drawings.
   f. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in

substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: JUL 2 9 1991

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Ken Wade

Ken Wade, Hydrogeologist
Solid Waste Management Section

Cindy Cook, Environmental Engineer
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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September 16, 1991

FILE REF: FID #252076990
Racine Co.
SW
Approvals
HW Lic

Mr. Rick Jernigan, Operations Manager
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Modification to the Plan of Operation Approval for RCRA Final Cover, Land Reclamation Company Landfill, License # 0572, WID 076171008, Racine, WI

Dear Mr. Jernigan:

I am pleased to inform you that your requested modifications to your plan of operation approval have been reviewed and approved. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on December 19, 1984.

The plan modification proposal was received by the Department on May 13, 1991. The report and associated plan sheets were submitted by GeoSyntec Consultants on behalf of Land Reclamation Company (LRC) (EPA ID #WID076171008).

This letter approves a modification to the RCRA final cover, to be placed over the hazardous waste unit, originally approved by the Department for the LRC landfill on August 2, 1989. This plan of operation approval letter supersedes the Department's August 2, 1989 approval letter in its entirety. Any pertinent conditions have been repeated in this letter.

The modifications include the following:

1. A change from HDPE to VLDPE for the geomembrane material.

2. Revised construction phases for the RCRA final cover.

3. Revised final grades to reflect the March 6, 1991 final grade plan modification approval.

4. Expanded limits of the RCRA final cover system to the north, which lies over corridor 7.

5. A revised and more extensive QA/QC construction observation manual.

6. New maintenance road location and corresponding details.

7. New perimeter drainage layer and geotextile design requirements.

8. New construction phasing diagrams, pipe penetrations and anchoring details.

LRC requested elimination of condition 14 of the Department's August 2, 1989 approval which required that the installer have previously installed a minimum of 25 million square feet of geomembrane liner. The Department will not eliminate this condition. However, the installer may count general polyethylene experience rather than VLDPE installation specifically.

Please be aware that condition 9 of the attached approval document modifies your proposal for the monitoring of long-term settlement. After a number of years have passed, if LRC finds that substantial settlement is no longer taking place, LRC may petition the Department in writing to reduce the surveying requirements. At that time the Department will review the data and reduce the requirement if appropriate.

Please call Cindy Cook at (608)267-3542 or Ken Hein at (414)263-8647 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Ed Lynch - HW/3
Martin Herrick/Jill Fermanich - HW/3
Mary Carrington - Town of Mt. Pleasant
Laura Ladisio - U.S. EPA, Region V, 5HR/13
Mardi Klevs/Al Debus - U.S. EPA, Region V, 5HR/13
Todd Watermolen - Creative Resource Ventures
PSS - SW/3

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION FOR THE
LAND RECLAMATION COMPANY LANDFILL (# 0572)

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984. A subsequent plan of operation approval modification dated August 2, 1989 approved the design of a RCRA cap over the hazardous waste unit.

3. On May 13, 1991, the Department received a report and associated plan sheets submitted by Geosyntec Consultants (Geosyntec) entitled, "Land Reclamation Company Landfill, Hazardous Waste Unit, RCRA Final Cover Modifications Report". The report was dated May 10, 1991.

4. Additional information submitted in connection with the modification request includes the following:

   a. A May 21, 1991 letter from Creative Resource Ventures (CRV) to the Department requesting an elimination of a condition in the Department's August 2, 1989 RCRA final cover design plan modification approval. The condition required that the geomembrane installer have 25 million cubic yards experience installing HDPE membrane.

   b. A July 10, 1991 letter from CRV to the Department addressing issues raised at the pre-construction meeting.

   c. A packet of documents dated July 29, 1991 submitted to the Department by Geosyntec which included requested quality control documents and a geomembrane panel layout.

5. The $1500 plan review fee was received by the Department on September 10, 1991.

6. Additional facts and documents considered in connection with the modification request include the following:

   a. The August 2, 1989 plan of operation modification approval for the RCRA final cover.

b. LRC began construction of the RCRA final cover prior to receiving this conditional plan modification approval. Their stated rationale for doing so was to complete the cap system this construction season as they had committed to the Department.

7. The special conditions set forth below are needed to assure compliance with chapters NR 500-520 and NR 600-685, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-520 and NR 600-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-520 and NR 600-685, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-520 and NR 600-685, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with NR 500-520 and NR 600-685, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. NR 144.44 Stats. to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The Department hereby approves the plan of operation modification for the RCRA cover at the Land Reclamation Company landfill, subject to the following conditions:

1. A preconstruction report shall be submitted to the Department for review and approval prior to the construction of each of Phases 1, 2a, 2b, and 3 of the final cover. The report shall be submitted to the Department a minimum of 30 days prior to the preconstruction meeting. The report shall include contractor and product identification, revised details, and changes incorporated to address Department requirements. The preconstruction report shall also include the following:

a. Any proposed changes to details of the design or construction required by this approval.

b. A phase-specific panel layout pattern and any revised details and cross-sections of the anchor trenches and undercut for the collection trenches.

2. A preconstruction meeting shall be scheduled prior to the initiation of the preparation of each of Phases 1, 2b, and 3. The meeting shall be used to clarify or confirm design changes, construction concepts or practices, and requirements of this approval. LRC shall include the engineering consultant and the Department staff in the meeting.

3. Geomembrane installation shall not proceed at ambient temperatures less than 32° F or greater than 104° F. The membrane shall also not be placed during precipitation, in an area of ponded water, or during excessive winds.

4. Three feet of clay shall be placed below the downslope discharge pipes of the RCRA cover drainage system at all times.

5. The temporary limit of placed membrane between the different phases shall be staked with flags to mark the location for future splicing.

6. The final cover shall be constructed in accordance with the following:

a. Grass seed shall be applied at a minimum rate of 2.0 pounds per 1000 square feet, and shall be watered if necessary to ensure that vegetative cover is obtained.

b. The topsoil/compost mixture shall be analyzed as to its nutritional needs and appropriate fertilizer applied accordingly. A letter shall be submitted to the Department, prior to placing the topsoil, including the ratio of topsoil to compost to be used, the screening method proposed for the compost, and the proposed procedure to be followed when placing the mixture.

c. Erosion control matting placed on drainage diversion berms shall be firmly staked until vegetative cover is obtained. Velocity breaks, such as bails of hay, shall be placed in the drainage diversion berms at regular intervals to reduce the impacts of erosion prior to the vegetative cover being established.

7. The cover vegetation shall be mowed twice a year to prevent any trees from growing on the cover and puncturing the membrane.

8. Construction inspections shall be performed at this site during the placement of the geomembrane for each of phases 1, 2a, 2b, and 3. The Southeast District and the central office staff shall be notified a minimum of one week prior to beginning the above listed construction event for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with c. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation is submitted to the Department for review.

9. Documentation of the settlement of the final cover shall take place according to CRV's July 10, 1991 letter except that the long-term

settling shall be documented as follows; those portions of the landfill that have reached final grades shall be surveyed on a 200-foot grid twice a year for the first year after final cover placement, then annually for the remaining long-term care period. The same grid points shall be used for each survey.

10. Construction documentation shall be submitted to the Department for review and approval within 90 days of completion of construction of each phase of the final cover. In addition to the information proposed in the RCRA final cover report, the construction documentation shall contain the following:

a. Plan sheets which indicate the location of all soil and geomembrane test locations, geomembrane panel placement, geomembrane patches and seam repairs, geomembrane destructive sample locations, and pipe penetrations. The plan sheets shall also include the location of gas extraction wells and header pipes, leachate head wells, and the surface and subsurface drainage systems.

b. Detail drawings and photographs that record the construction of the following:

   i. Construction of subsurface drains in the final cover, and the sequence of placement of the construction materials.

   ii. Collection pipe assembly for the subsurface drain system, including pipe and joining details, welded and mechanical attachments to soil and geomembrane, pipe stubs and seals for future construction, and pipe anchoring and penetration.

   iii. Construction and compaction methods used in the placement of the final cover system.

   iv. Geomembrane panel layout as constructed.

   v. Anchor trenches as constructed.

c. The narrative describing the construction of the facility in chronological fashion. The following shall be included:

   i. Any deviations from the approved plans shall be described and the rationale for utilizing the deviations included.

   ii. Construction of the connections to the splice of the previous phase and protective measures taken to preserve the splice to the succeeding phase shall be described.

   iii. All actions taken to eliminate coarse material in the top lift of the clay component of the lysimeter and capping layer shall be described.

   iv. Controls and machinery used to place the clay liner and the

drainage blanket of the final cover in terms of machine weights, limits on machine maneuvers, lift thickness, and haulway and dumping controls shall be described.

v. The construction sequence of the geomembrane component of the capping layer, including the construction of collection pipe and trenches and the integration of collection trench construction with other geomembrane and drainage blanket placement.

d. Narrative and tabulated data for all geomembrane installation and tests. The narrative shall include identification of the geomembrane supplier and installer, material specifications of the installed geomembrane, attachment and welding methods used on the project, and samples of the geomembrane material and seams that are representative of the installed geomembrane liner.

e. Narrative describing the measures taken to place topsoil and to revegetate the achieved final grades. In addition, plan sheets and narrative shall be included which describe the construction of access roads and erosion control features, including alignment, grades, surfacing, location of culverts and drain pipes, road and ditch invert elevations, revegetation measures, and any use of riprap and erosion control matting.

f. Documentation of any monitoring point removed, damaged, replaced, or repaired during construction.

g. Certification that the extrudate used is comprised of the same resin as the geomembrane to be used shall be included in the documentation.

The Department retains the jurisdiction either to require the submittal of additional information or to modify the approval at any time if, in the Department's opinion, further modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: SEP 16 1991

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Barbara J. Zellmer, Chief
Hazardous Waste Management
Section

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management
Section

Bureau of Solid & Hazardous Waste Management

Cindy M. Cook, Environmental Engineer
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Martin Herrick, Environmental Engineer
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Ken Wade, Hydrogeologist
Solid Waste Management Section
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Cindy Cook File Author

WISCONSIN DEPT. OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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MAY 1 1 1992

Mr. Rick Jernigan, Operations Manager
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine
SW
Approvals

SUBJECT: Interior Manhole Construction Documentation Approval, Land Reclamation Company Landfill, Racine County

Dear Mr. Jernigan:

I am pleased to inform you that your construction documentation has been approved for the interior manhole and piping system for your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the construction of the two interior manholes and their related piping system at the Land Reclamation Company Landfill. Work included the construction of two manholes interior to the landfill, one at the existing manhole [illegible] and the other at the [illegible] piping. Continuing construction includes the placement of the foundry sand cone around each of the manholes, which will be documented in annual reports.

The abandonment report for the dewatering well does not give any information regarding the removal of the 3/8 inch peagravel screen packing. This material should have been removed by overdrilling prior to grouting. Also, the use of neat cement grout to seal abandoned boreholes from Temporary Piezometers A and B, and the use of concrete grout to abandon the dewatering well is inappropriate for this clay environment. A high density bentonite grout would be more appropriate. Although it will be approved in this instance, this approval letter requires that a high-density bentonite grout be used for the abandonment of all future borings.

A verbal approval was given to LRC in January for this construction documentation. LRC was informed at that time that they would need to leave a portion of the completed liner open during the winter months, since they could not meet the Department's deadline of December 31 to have placed four feet of waste over the liner. This portion of the liner is required to have density and permeability testing performed on it as per the Department's March 7, 1991 memo (attached).

5/1/92

Printed on Recycled Paper

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Enclosure

cc: Ken Hein - SED
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Chuck Slaustas/Al Debus - U.S. EPA, Region V, 5HE/12
Marty Herrick/Ed Lynch - HW/3
Richard Weber - Warzyn, Inc.
Todd Watermolen - Creative Resource Ventures

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes a report submitted by Warzyn Engineering, Inc. on behalf of LRC entitled, "Construction Observation Report [illegible] and [illegible] Phase Land Reclamation Landfill" and associated plan sheets, dated December, 1991.

4. The $1000 construction documentation fee and the $500 for each of 3 construction inspections ($1500) was received by the Department on May 2, 1991.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The September 24, 1990 plan of operation modification which approved the construction of the interior manholes.

   b. A March 7, 1991 memo from Lakshmi Sridharan to Department staff, which was subsequently sent to LRC, outlining the procedure to be followed for any sites wanting an exemption to the portion of the code requiring that all newly constructed clay liners be covered with 4 feet of waste by December 31 of the year of construction.

   c. A September 4, 1991 letter from LRC to the Department regarding clay liner material laboratory index testing.

   d. A September 19, 1991 memo from the Department to LRC regarding the placement of Claymax below the manholes and the elimination of the settlement plates outside the manholes.

   e. A December 26, 1991 letter from LRC to the Department addressing a field modification of final grades to allow foundry sand placement around interior manholes 1 and 2.

f. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with, the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for the Land Reclamation Landfill subject to the following conditions:

1. LRC shall leave at least a 20' x 100' strip of completed liner (or equivalent area) with one foot of drainage blanket open during the winter months. This portion of the liner shall have density and permeability tests performed on it, according to the March [illegible] 1991 Department memo (attached).

2. [illegible] shall place [illegible] sand placed around the manholes to prevent [illegible] from escaping from the waste through the sand. The geomembrane may be removed before the next lift of sand is placed and reused. Care shall be taken that the geomembrane remains in good condition, and shall be replaced as necessary.

3. Within 30 days of the date of this approval, LRC shall submit written procedures to the Department which will be followed as manhole sections are placed to address the following:

   a. The delineation of the sand cone placement.

   b. The density testing procedures for the sand placement.

4. The following information shall be submitted to the Department in each year's annual report:

   a. The number of sections added to each manhole in that year.

   b. The survey performed on each manhole to measure the settlement that had occurred during that year.

c. Survey data performed on the foundry sand limits during that year to document that the sand has indeed been placed in a cone-shape.

d. Density testing results for the placement of the sand.

e. A list of the foundries whose waste was used to construct the sand cone, along with the data required in condition 5(a) and (b) of this approval.

5. The foundry sand used in the cone-surround for the interior manholes shall comply with the following specifications:

a. P200 $\leq$ 12%.

b. Dry density $\geq$ 90% Modified Proctor density.

c. No debris or organic material shall be included.

d. No material greater than 6-inches in diameter shall be included.

6. Any borings or wells to be abandoned in future waste fill areas shall be grouted using high-density bentonite grout (>30% solids) with documentation showing minimum field grout densities of 11 lbs/gal or greater.

The Department reserves the right to require the submittal of additional information and to modify or amend this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: MAY 11 1992

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy Cook, Environmental Engineer
Solid Waste Management Section

Ken Wade

Ken Wade, Hydrogeologist
Solid Waste Management Section

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: March 7, 1991 FILE REF: 4400

TO: Solid Waste Management Section Staff

FROM: Lakshmi Sridharan

SUBJECT: Exemption from s. NR 506.07(2)(b), Wis. Adm. Code

Section NR 506.07(2)(b) requires that a newly constructed liner area be covered with 4' of waste or other frost protection material by December 31 of the year of construction. Preliminary information, available from recent research and our program data base indicate that clay liners are <u>not likely</u> to be severely deteriorated due to freeze-thaw cycles in one winter. However, we need additional data for more soil types and site locations before we feel comfortable to delete this provision from the code.. We have decided to grant exemption from s. NR 506.07(2)(b), Wis. Adm. Code to all landfills constructed in the '90-'91 and '91-'92 construction seasons and as conditions of this exemption for landfills with clay liner we will require the following testing:

1. The landfill shall leave at least a 20'x 100' strip of completed liner (or equivalent area) with one foot of drainage blanket open for performing density and permeability tests.

2. Description of a visual inspection of top surface of a [illegible] liner area at each testing location after removing the sand blanket but prior to performing any testing must be reported. If surface cracks are observed, then depth of such cracks shall be measured and reported.

3. Density of the clay shall be tested at five locations at depths of 6" and 12" from the top (total of 10 density tests).

4. Permeability tests shall be performed on undisturbed clay samples collected from two different locations which are within 2' of a density test location. Two samples shall be collected at depths of 12" and 24" from top at each of the two locations (total of 4 permeability tests). Licensees should be encouraged to perform insitu permeability tests.

5. The field tests and sample collection shall be completed by May 15.

6. A report summarizing the test data shall be submitted by July 15.

For landfills with composite liner, the following additional tests shall be required on the PE liner before and after exposure to the elements:

1. Five PE liner samples from the open area shall be tested for stress and strain at both yield and break, thickness, density, carbon black content, dimensional stability, tear resistance and brittleness temperature.

2. Two seam samples, at least 2' long, shall be buried in the test area. The seam samples shall be tested for shear and peel adhesion. These samples shall be tested for seam continuity using vacuum box or other suitable test.

We will not require any corrective actions on the liner at these landfills regardless of the test results.

If you need additional information on the testing procedures please contact Amalendu Bagchi at (608) 267-7576.

v:\9104\sw9frezx.axb

cc: Paul Didier - SW/3
District SW Program Supervisors
District SW Unit Leaders
District SW Investigators
Guidance Notebook

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street
Box 7921
Madison, Wisconsin 53707
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DNR TDD 608-267-6897
SOLID WASTE MGMT 608-266-2111
SOLID WASTE TELEFAX 608-267-2768

April 13, 1993

Mr. Henry Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID# 252076990
Racine Co.
SW
Correspondence

SUBJECT: RCRA Cover - Phase I, Construction Documentation Approval, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

I am pleased to inform you that your construction documentation has been approved for Phase 1 of the RCRA cover system at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the construction of Phase 1 of the RCRA cover system over the hazardous waste unit as required by the Department's March 31, 1988 approval letter, and the subsequent September 16, 1991 plan of operation modification. Construction included the placement of (from the bottom up) three feet of clay, a geomembrane liner, a one foot thick drainage layer, a geotextile, a one and a half foot thick rooting layer, and a six inch thick topsoil layer. Phase I encompasses approximately 10 acres on the southern end of the hazardous waste unit (HWU).

The September 16, 1991 approval letter required that the temporary limit of the placed geomembrane be staked with flags to mark the location for future splicing. This was not yet accomplished, and should be completed as soon as possible.

The attached approval requires that fine grading, fertilizing, seeding and mulching must be accomplished this construction season, in accordance with condition 6 of the September 16, 1991 approval letter.

We would like to remind you that LRC is required, by condition 9 of the September 16, 1991 approval, to document the settlement of the final cover twice a year for the first year after placement of the final cover, and then annually thereafter.

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Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Jack P. Connelly for

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Enclosure

cc: Ken Hein - SED
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Laura Lodisio/Alan Wojas - U.S. EPA, Region V, HRE-8J
Marty Herrick/Ed Lynch - HW/3
Jan Kucher/Joel Schittone - Warzyn, Inc.

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes a two volume report and associated plan sheets dated March 1992 and received by the Department on March 27, 1992. Volume one is entitled, "RCRA Phase 1 Cover Construction, Hazardous Waste Unit, Land Reclamation Company, Racine, Wisconsin", and was prepared by Warzyn, Inc. Volume two is entitled, "Final Report on Construction Quality Assurance Monitoring Services for Construction of Phase I of the RCRA Final Cover System at the Land Reclamation Company Landfill, Racine, Wisconsin", and was prepared by Geosyntec Consultants.

4. The $1000 construction documentation fee and the $500 fee for the construction inspection was received by the Department on May 26, 1992.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. A March 31, 1988 plan of operation approval modification to the Hazardous Waste Closure and Long-term Care Plan.

   b. A September 4, 1991 letter from LRC to the Department discussing soil testing results.

   c. A September 16, 1991 plan of operation approval modification for the RCRA Final Cover.

   d. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid and hazardous waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with, the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for Phase I of the RCRA Final Cover over the hazardous waste unit, subject to the following conditions:

1. The temporary limit of placed membrane between the different phases shall be staked with flags to mark the location for future splicing.

2. Fine grading, fertilizing, seeding and mulching shall be accomplished within 90 days of this approval over the area of Phase I of the RCRA cover.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: APR 1 6 1993

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Jack P. Connelly for
Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Edward K. Lynch for
Barbara J. Zellmer, Chief
Hazardous Waste Management Section

Cindy M. Cook
Cindy Cook, Environmental Engineer
Solid Waste Management Section

Martin Herrick, Environmental Engineer
Hazardous Waste Management Section

Ken Wade
Ken Wade, Hydrogeologist
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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SOLID WASTE TELEFAX 608-267-2768

September 13, 1993

Mr. Hank Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine Co.
SW
Approvals

SUBJECT: Groundwater Containment Structure Construction Documentation Approval, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

I am pleased to inform you that your construction documentation has been reviewed and partially approved for the groundwater containment structure at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

Project Summary

The groundwater containment structure consists of a bentonite slurry wall which extends along the entire southern portion of the hazardous waste unit (HWU) and the City of Racine site, along the western portion of the City of Racine site, and underneath the Corridor Nos. 8, 9 & 10 area. Interior to the slurry wall is a gravel-filled, groundwater collection trench. Perforated corrugated piping lies at the bottom of the trench to collect groundwater. A perforated pipe lies at the top of the trench in the portion of the structure that is just south of the HWU to collect methane. The purpose of the containment structure is to prevent any migration of leachate from the unlined portion of the HWU and from the City of Racine site. The structure is also designed to help prevent the migration of methane from the hazardous waste unit. The groundwater containment structure was required to be constructed in the Department's March 31, 1988 Closure Plan Modification letter.

Construction began on the groundwater containment structure in the summer of 1988 and continued through the end of 1989. The construction observation report was submitted by Foth & Van Dyke, Inc. (F&VD), on behalf of LRC, and was received by the Department on August 9, 1991. After reviewing this documentation, the Department determined that the slurry wall and gas collection line appeared to be adequately constructed, however several problems were associated with the construction of the groundwater collection structure. These problems were outlined in a letter to LRC dated March 10, 1992. This letter also identified the additional information that the Department would need before the groundwater collection system could be approved. LRC's response to this letter was a report prepared by F&VD and dated March 30, 1993. This report included a review of the quality assurance procedures of the trenching operations and a comparison of the horizontal and vertical alignment of the trench to that of record conditions. The report also contained information regarding the performance of the structure. The

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submittal of this information has allowed the Department to feel much more comfortable in the construction and long-term performance of the groundwater containment structure. Therefore, this letter conditionally approves the entire groundwater containment structure.

I would like to take this opportunity to address a separate issue. LRC has recently brought to the Department's attention the fact that the City of Racine site is not yet to final grades. We agree with the request to use foundry sand, contaminated soils and/or excess earth associated with the regrading of the City of Racine site to fill in this location.

LRC also asked the Department during a July 22, 1993 meeting whether a connection between the sand drainage blanket below the barrier wall of the hazardous waste unit and the groundwater collection trench would be acceptable. This concept would be acceptable to the Department provided LRC include detail drawings of this connection in the Corridor Nos. 8, 9 and 10 plan of operation modification request. LRC must address whether soil, waste or both will be excavated and where this material would be disposed. LRC must also be willing to make a determination as to whether the material excavated is hazardous. Any material which is determined to be hazardous will be managed accordingly.

On one additional matter, in a letter dated April 2, 1993, LRC requested two exemptions to the construction quality control for all future earthwork projects. Condition 19 of the Department's September 20, 1988 plan of operation modification approval required that periodic sand cone density tests be performed and that the results of the nuclear density meter calibration be submitted to the Department with the corresponding construction documentation. We agree that the accuracy and precision of the nuclear density meter is at least that of the sand cone method, and will agree that sand cone tests no longer need to be performed. Also, the results of the nuclear density meter calibration no longer need to be submitted to the Department with the understanding that the calibrations will still be performed and the records will be kept by LRC or their consultants for review by the Department if requested.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Barbara J. Zellmer

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

Enclosure

cc: Ken Hein - SED

Joann Kovac - Town of Mount Pleasant
Rick Jones - City of Racine
Laura Lodisio/Alan Wojtas - U.S. EPA, Region V, HRE/8J
Marty Herrick/Ed Lynch - HW/3
Jerry Sevick - Foth & Van Dyke
Jean Gromnicki U.S. EPA, REGION V HRM/7J

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on Oecember 19, 1984.

3. The information submitted as construction documentation includes a three volume report and associated plan sheets submitted to the Department by Foth & Van Dyke, on behalf of LRC. The report was entitled, "Construction Observation Report, Groundwater Containment Structure, Land Reclamation Company." It was dated August 6, 1991 and was received by the Department on August 9, 1991.

4. The $1000 construction documentation fee was received by the Department on September 4, 1991. The $500 for each of 3 construction inspections ($1500) was received by the Department on December 4, 1991.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The Plan of Operation Approval for LRC dated December 19, 1984.

   b. The November 15, 1985 plan modification approval for the recalculation of closure and long-term care cost estimates. This letter also included an estimate on the volume of groundwater which would be collected by the groundwater collection system.

   c. The March 31, 1988 approval letter for the closure of the Hazardous Waste Unit (HWU).

   d. The December 14, 1988 approval letter for the design of the containment structure.

   e. A report dated May 11, 1989 from Foth & Van Dyke, on behalf of LRC, evaluating the granular backfill for the groundwater collection trench.

f. A letter from the Department to LRC, dated July 6, 1989, approving modifications to the containment structure.

g. The August 18, 1988 plan modification letter from the Department to LRC regarding the containment structure excavation.

h. A letter from the Department to LRC dated August 31, 1989 which documents a construction inspection made on lift station no. 6.

i. A memo from the Department to the LRC file, dated December 4, 1989, which documents a construction inspection made on the containment structure.

j. A June 30, 1989 letter from Foth & Van Dyke, on behalf of LRC, requesting modifications to the approved construction documentation program for the containment structure.

k. A letter from the Department to LRC requesting additional information regarding the containment structure construction documentation. The letter was dated March 10, 1992.

l. A report submitted by Warzyn, Inc., on behalf of LRC, which was entitled, "Pipe Cleaning Observation Report, Leachate and Groundwater Pipe Cleaning, Land Reclamation Company." The report was dated September 30, 1992.

m. A report submitted by Warzyn, Inc., on behalf of LRC, which was entitled, "Pipe Cleaning Summary Report, Land Reclamation Company." The report was dated on March 26, 1993.

n. A report submitted by Foth & Van Dyke, on behalf of LRC, which contained the additional information requested by the Department in the March 10, 1992 letter. The report was dated March 30, 1993 and was received by the Department on April 1, 1993.

o. Other Departmental correspondence pertaining to the LRC landfill.

6. The special conditions set forth below are needed to assure that the facility is constructed and operated in an environmentally sound fashion.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516 and 680, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with, the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION
DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation for the groundwater containment structure for the Land Reclamation Landfill subject to the following conditions:

1. The cleanout riser for the collection pipe between Lift Station No. 5 and Lift Station No. 6 shall be repaired and replaced to its original vertical position.

2. The surface water which is currently being discharged into Lift Station No. 6 shall be temporarily connected to the force main providing for direct discharge to Manhole No. 13 of the sanitary sewer system until construction of Corridor Nos. 8,9 and 10.

3. The guide rails in Lift Station No. 8 shall be realigned so that the pump can be repaired or be replaced if necessary. Floats shall be positioned such that the low float is approximately one foot above the pump and the high float is approximately one foot below the lowest invert (the line from Manhole No. 9).

4. The required repairs listed in conditions 1 through 3 of this approval shall be completed within 90 days of the date of this approval. Documentation of the repairs shall be submitted to the Department within 30 days after its completion.

5. The groundwater collection lines shall be jetted on an annual basis, with the documentation being submitted to the Department as part of the annual report. The documentation shall include drawings depicting which portions of the lines were cleaned and the locations of any blockages in the line, photos documenting the cleaning and a narrative explaining how the cleaning proceeded and whether any blockages were encountered.

6. Prior to jet cleaning the collection lines, LRC shall sound the bottom of the manhole and record the distance to the top of the manhole. Several hours after jetting, LRC shall then resound the bottom and record the new measurement. Using this difference in elevations, the volume of silt shall be calculated and reported to the Department as part of the pipe cleaning documentation. If the volume of silt is determined to be present in sufficient quantity, the silt shall be removed by jetting and vacuuming. If large volumes of silt occur on a regular basis, or if regular blockages occur, the Department may require more frequent jet cleaning of the groundwater collection lines.

7. Should the Department determine at any time that problems have developed with any aspect of the containment structure, LRC shall remediate the problems to the Department's satisfaction.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: SEP 17 1995

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Barbara J. Zellmer, Chief
Hazardous Waste Management Section

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section

Martin Herrick

Martin Herrick, Environmental Engineer
Hazardous Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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November 4, 1993

Mr. Hank Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine
SW
Approvals

SUBJECT: Construction Documentation Approval for Phase II of West Barrier Wall and Horizontal Gas Well Construction and Plan of Operation Modification, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

I am pleased to inform you that your construction documentation has been reviewed and approved for the completion of Phase II of the West Barrier Wall at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the construction of Phase II of the West Barrier Wall which consists of two horizontal gas wells, a seven foot thick clay barrier wall, and interior and exterior drainage layers. The construction of the barrier wall was required in the March 31, 1988 approval letter addressing "Modifications to the Hazardous Waste Closure and Long-Term Care Plan, and Plan of Operation Approval".

The construction documentation report did not address the missing exterior drainage layer at the northeast tie-in to the barrier wall to the Department's satisfaction. Therefore the Department is requiring as part of this approval that LRC more thoroughly address this situation.

On another matter, the Department has reviewed the letter dated May 24, 1993 from Warzyn, Inc., on behalf of LRC, to the Department. The letter contained an analysis of the settlement of the RCRA Phase I Cover, which had been required by the Department in an approval letter dated December 30, 1991. The settlement analysis performed was not strictly in accordance with the conditions required in the approval letter, however, the Department believes that the proposed monitoring would be adequate. Therefore an alternative monitoring procedure has been required as part of this approval, at your request. The settlement monitoring results should still be submitted to the Department as part of your annual report, as required by the Department's December 30, 1991 approval.

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Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc
encl.

cc: Ken Hein - SED
Joann Kovac - Town of Mount Pleasant
Rick Jones - City of Racine
John Belken - Warzyn, Inc.
Rich Weber - Warzyn, Inc., Milwaukee Office

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL
FOR THE CONSTRUCTION OF THE WEST BARRIER WALL
OF THE HAZARDOUS WASTE UNIT OF THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes a report submitted by Warzyn, Inc. (Warzyn), on behalf of LRC, entitled "Construction Observation Report, Phase II of West Barrier Wall and Horizontal Gas Well Construction, Hazardous Waste Unit, Land Reclamation Company Landfill". The report was dated August 23, 1993 and was received by the Department on the same day.

4. The $1000 construction documentation fee was received by the Department on September 15, 1993.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The Department's Modification to the Hazardous Waste Closure and Long-Term Care Plan, dated March 31, 1988.

   b. The Department's September 20, 1988 Barrier Wall Plan Modification Approval.

   c. A letter from LRC to the Department requesting a modification in the hydraulic conductivity of the drainage blanket. The letter was dated October 26, 1990.

   d. The Department's May 11, 1992 letter approving the construction documentation of the interior manholes and Phase I of the West Barrier wall.

   e. The Department's December 30, 1991 approval letter requiring that a settlement analysis be performed on an annual basis.

f. A letter from Warzyn, Inc., on behalf of LRC, to the Department dated May 24, 1993. The letter contained the settlement analysis for the final cover, and a request that the analysis be performed differently than that required by a previous approval.

g. Other Departmental correspondence pertaining to the LRC landfill.

6. The special conditions set forth below are needed to assure that the facility is constructed and operated in an environmentally sound fashion.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with, the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation for Phase II of the West Barrier Wall of the Land Reclamation Landfill subject to the following conditions:

1. Settlement condition #12 of the Department's December 30, 1991 approval letter shall be superseded by the following:

   a. An aerial topographic survey shall be performed at the site on an annual basis with the preparation of drawings with a 2-foot contour interval at a scale of 1-inch equal to 100-feet.

   b. Settlement monitoring shall be performed at the locations indicated on Tables 1, 2 and 3, which are attached.

   c. Vertical settlement shall be estimated to within a 1-foot tolerance. Pipe invert elevations shall be estimated assuming that settlement will be equal to cover settlement.

   d. A report shall be submitted with each annual report which includes annual and cumulative settlement, as well as pipe invert elevations and the slope between the wells.

2. Within 14 days of the date of this approval, LRC shall submit to the Department a written narrative more thoroughly explaining the lack of exterior drainage blanket at the tie-in for the northeast corner of the Phase II West Barrier Wall. The excavation performed to search for the blanket shall be discussed. LRC shall also address whether they believe that the layer had ever been placed, or if the sand drainage layer had been eroded prior to the placement of waste. Does LRC have any idea to what extent the drainage layer is missing? LRC shall identify any other discrepancies that have been observed between the construction documentation and the actual construction of the barrier wall or any other construction events.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit

court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: NOV 5 1993

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section

Jim Bauer, Hydrogeologist
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES

George E. Meyer
Secretary

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March 14, 1994

Mr. Hank Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine
SW
Approvals

SUBJECT: Construction Documentation Approval for Phase IV & V of the North Barrier Wall, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

This letter serves to inform you that your construction documentation has been reviewed and approved for Phases IV and V of the North Barrier Wall at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the construction of Phases IV and V of the West Barrier Wall which consists of a seven foot thick clay barrier wall and interior and exterior drainage layers. The construction of the barrier wall was required in the March 31, 1988 approval letter addressing "Modifications to the Hazardous Waste Closure and Long-Term Care Plan, and Plan of Operation Approval".

The construction documentation, which was prepared by Warzyn, Inc. and Foth & Van Dyke, was entitled, "Construction Observation Report, North Barrier Wall - Phase IV & V Construction, Hazardous Waste Unit, Land Reclamation Company." The report was received by the Department on February 20, 1992. The report had several deficiencies and was poorly organized, with the main narrative documenting the construction of Phase V and the Phase IV documentation being included in the Appendix. However, a May 25, 1993 submittal cleared up any questions regarding the construction. I would suggest that, if two different consulting firms collaborate on construction documentation reports in the future, more thought is given to how the report would be organized, and how to present the information more clearly.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

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LS:cmc

cc: Ken Hein - SED
Joann Kovac - Town of Mount Pleasant
Rick Jones - City of Racine
Rich Weber - Warzyn, Inc., Milwaukee Office
Gerald Sevick - Foth & Van Dyke

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL
FOR THE CONSTRUCTION OF PHASES IV & V
OF THE NORTH BARRIER WALL
OF THE HAZARDOUS WASTE UNIT OF THE
LANO RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes a report submitted by Warzyn, Inc. (Warzyn), on behalf of LRC, entitled "Construction Observation Report, North Barrier Wall - Phase IV & V Construction, Hazardous Waste Unit, Land Reclamation Company Landfill". The report was dated February 18, 1992 and was received by the Department on February 20, 1992.

4. The $1000 construction documentation fee was received by the Department on March 26, 1992.

5. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The Department's Modification to the Hazardous Waste Closure and Long-Term Care Plan, dated March 31, 1988.

   b. The Department's September 20, 1988 Barrier Wall Plan Modification Approval.

   c. A letter from LRC to the Department requesting a modification in the hydraulic conductivity of the drainage blanket. The letter was dated October 26, 1990.

   d. A letter from the Department to LRC requesting additional information regarding the construction documentation for the North Barrier Wall, dated April 1, 1993.

e. A letter dated May 10, 1993 from Foth & Van Dyke to Warzyn which contained some of the additional information requested by the Department's April 1, 1993 letter.

f. A letter dated May 25, 1993 from Warzyn to the Department which contained the additional information requested in the Department's April 1, 1993 letter.

g. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONDITIONAL CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation for Phases IV & V of the North Barrier Wall of the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit

court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: MAR 15 1994

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section

Jim Bauer, Hydrogeologist
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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File Ref: FID #252076990
Racine Co.
SW
Approvals

APR 1 9 1994

Hank Koch
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Construction Documentation Approval, East Slope Final Clay Cover, Land Reclamation Landfill, #0572, Racine County, WI.

Dear Mr. Koch:

I am pleased to inform you that your Construction Documentation has been approved for the clay final cover of the east slope of your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

Construction of the final cover for the East Slope of the hazardous waste unit was performed in July 1985, but was not documented at the time. Post-construction documentation performed in 1990 showed that the cover met Department requirements only in the middle portion of the slope. Therefore, the final cover was reconstructed to the east and west of this middle band of cover. This letter approves the construction of the four-foot clay and six-inch topsoil cover approximately west of the 25+80E grid line and east of the 26+55E grid line.

This letter also approves the construction of the final cover of the east slope of Corridor 7. The construction of this portion of the east slope began in April 1993, and consisted of the following activities:

* Construction of clay tie-ins of the new Corridor 7 east slope cover with the RCRA Phase I cover, HWU east slope cover, and the north barrier wall;

* Additional construction of the east and north liner sidewalls of Corridor 7;

* Repair of damaged cleanouts in Corridors 5, 6 and 7;

* Backfilling of pipe repair excavations and filling to establish final refuse grades on the Corridor 7 east slope;

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* Construction of final cover on the east slope of Corridor 7; and

* Placement of topsoil and compost followed by seeding, fertilizing and mulching the southern portion of the east slope. The seeding of the remaining portion of the east slope will be performed in early May of 1994.

As the excavation was being performed for the repair of the damaged cleanouts in Corridors 5, 6 and 7, an additional cleanout was found which could not initially be identified. After some investigation, it was found that the cleanout was attached to a previously undocumented horizontal gas extraction trench. This cleanout has been given the nomenclature of the 7X cleanout. This pipe will be cleaned out biannually along with the gas trenches GT-1 and GT-2.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

cc: Ken Hein - SED
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Rich Weber - Warzyn

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. Warzyn Engineering, Inc., on behalf of LRC, submitted construction documentation required by condition 54 of the plan of operation approval.

4. The information submitted as construction documentation includes the following:

   a. A report submitted by Warzyn Engineering, Inc., on behalf of LRC, entitled, "Construction Observation Report, East Slope Construction, Hazardous Waste Unit, Land Reclamation Landfill," and dated February, 1992.

   b. A report submitted by Warzyn Engineering, Inc., on behalf of LRC, entitled, "Construction Observation Report, Corridor 7 East Slope Final Cover", and was dated February, 1994.

5. The $1000 construction documentation fee for the east slope construction was received on March 26, 1992. The $1000 review fee for the Corridor 7 east slope final cover construction documentation was received by the Department on March 21, 1994.

6. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The December 19, 1984 plan of operation approval.

   b. The March 31, 1988 modification to the hazardous waste closure and long-term care plan.

   c. A letter from the Department to LRC approving the East Slop Post-Construction Documentation, dated July 29, 1991.

   d. A letter from LRC to the Department regarding Atterberg testing requirements, dated September 4, 1991.

e. The July 28, 1993 construction documentation approval letter for the completion of Corridor 11.

f. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for the east slope final cover of the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Oepartment. Such a petition for

judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: APR 19 1994

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy Cook, P.E.
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES

George E. Meyer
Secretary

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File Ref: FID #252076990
Racine Co.
SW
Approvals

JUL 13 1994

Hank Koch
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Construction Documentation Approval, East Slope and Corridor 7 Gas & Leachate Extraction System, Land Reclamation Company Landfill, #0572, Racine County, WI.

Dear Mr. Koch:

I am pleased to inform you that your Construction Documentation has been approved for the gas and leachate extraction system on the east side slope and on Corridor 7 of your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

The modifications to the gas and leachate extraction system were made as a result of methane detects in the gas monitoring probes on the east side of the site. Gas extraction wells located along the east side of the site (GW14, GW15, and GW16) had been determined to be ineffective in controlling the migration of gas. To address these issues, the following construction activities took place:

* Gas extraction wells GW14, GW15, and GW16 were abandoned.

* Gas and leachate extraction wells LGW321, LGW322, LGW323, LGW324, LGW325, and the associated header lines were installed.

* A compacted clay barrier wall was constructed at the toe of the east slope, followed by the installation of a perforated gas migration control pipe between the wall and the HWU.

* Gas monitoring probes were installed within the waste, west of the compacted clay barrier wall, and gas tee monitoring probes were installed east of the barrier wall to detect migration and monitor system performance.

The construction documented in this report also includes a portion of the Corridor 7 gas and leachate extraction system. The construction included the following:

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* Installation of gas and leachate extraction well LGW326S (shallow - above the north barrier wall) and LGW326D (deep - below the north barrier wall). The two wells were constructed in a single borehole and were connected to a combination gas and leachate header pipe.

* The gas header pipe along the toe of the east side of the site was extended north and around the northeast corner of the site.

* Gas monitoring probe GP4 was installed through the final cover of the Corridor 7 east slope.

The rest of the Corridor 7 gas extraction system is planned to be completed in the 1994 construction season.

The construction documented in this report has been performed adequately, however I do have a few comments. First, the Department's July 27, 1993 Plan Modification approval letter recommended in the cover letter that GMW20 and GMW21 not be abandoned for a year or two. They had methane detects in the past and would therefore be useful in determining the performance of the newly constructed gas-migration control system. However, due to an oversight, these wells were abandoned. Other wells exist to monitor system performance. Second, jetting of the horizontal gas extraction pipes was required by condition 3 of the Department's July 27, 1993 Plan Modification approval letter. This jetting was performed, but neither the cleaning of GT-1 nor GT-2 was successful. This demonstrates the questionable usefulness of these horizontal extraction pipes.

This approval letter requires LRC to complete Groundwater Monitoring Well Information Forms and Parameter Sampling Required Forms for all monitoring points and parameters added or deleted by this approval. Samples of these forms are included.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

encl.

cc: Ken Hein - SED
Thomas Melzer - Town of Mount Pleasant
Fred Larson - City of Racine
Rich Weber - Warzyn

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. Warzyn Engineering, Inc., on behalf of LRC, submitted construction documentation required by condition 54 of the plan of operation approval.

4. The information submitted as construction documentation includes a report submitted by Warzyn Engineering, Inc., on behalf of LRC, entitled, "Construction Observation Report, East Slope and Corridor 7, Gas and Leachate Extraction System, Land Reclamation Landfill," and dated December 22, 1993.

5. The $2000 construction documentation fee ($1000 for the review of the document and $500 each for two construction inspections) was received on January 31, 1994.

6. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The December 19, 1984 plan of operation approval.

   b. The March 31, 1988 modification to the hazardous waste closure and long-term care plan.

   c. The July 27, 1993 plan of operation modification approval for the gas extraction system for Corridor 7 and the remedial gas system for the east slope.

   d. A letter from Warzyn, on behalf of LRC, dated July 13, 1993 outlining the waste disposal plan for the excavation spoils.

   e. Other Departmental correspondence pertaining to the LRC landfill.

7. The special conditions set forth below are needed to assure that the facility is constructed and operated in an environmentally sound fashion.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. If the conditions of approval set forth below are complied with, the applicant will have demonstrated that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for construction of the east slope and Corridor 7 gas and leachate extraction system of the Land Reclamation Landfill subject to the following conditions:

1. LRC shall complete Groundwater Monitoring Well Information Forms and Parameter Sampling Required Forms for all environmental monitoring points and parameters added or deleted by this approval.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit

court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: JUL 1 3 1994

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy Cook, P.E.
Solid Waste Management Section

WISCONSIN
DEPT. OF NATURAL RESOURCES

George E. Meyer
Secretary

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FILE REF: FID #252076990
Racine Co.
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MAR 3 1 1995

Mr. Hank Koch, Operations Manager
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Modification to the Plan of Operation Approval for Corridors 8, 9 and 10, Land Reclamation Company Landfill, License # 0572, WID 076171008, Racine, WI

Dear Mr. Koch:

I am pleased to inform you that your requested modifications to your plan of operation approval have been reviewed and approved. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on December 19, 1984.

The plan of operation modification approved in this letter include design changes to Corridors 8, 9 and 10. The modification consists of adding a composite liner at the base of the Corridor, and a design to handle the leachate and gas generated within Corridor. The base liner will consist of a composite clay/geosynthetic liner system made up of a 5-foot thick compacted clay liner overlain by a 60-mil thick HOPE geomembrane. A geotextile blanket will cushion the geomembrane from the one-foot stone drainage blanket which overlays the geomembrane.

The east sidewall of Corridor 8, 9 and 10 will consist of a 7-foot thick compacted clay West Barrier Wall of the Hazardous Waste Unit with granular drainage layers above and below the compacted clay. The west sidewall will consist of a 5-foot thick compacted clay liner over the City of Racine site, overlain with a granular drainage layer.

A single, Schedule 120 PVC pipe will be placed at a 1% slope down the center of the phase, and will transmit the leachate by gravity to a sump located at the south end of the phase. Leachate will be pumped up a sideslope riser through a metering manhole to MH13, and discharge in the City of Racine sewer.

The final cover for Corridors 8, 9 and 10 is a combination of the extended

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RCRA final cover over the hazardous waste unit (HWU) and a 4-foot thick compacted clay cover. The extended RCRA final cover extends from the HWU to above the west edge of the base composite liner. The 4-foot thick compacted clay cover will tie-in with the extended RCRA cap and cover the rest of the phase to the west.

Four vertical active gas extraction wells will be installed in Corridors 8, 9 and 10. The wells will be drilled to within 10 feet of the base of the landfill and will consist of perforated 6-inch diameter Schedule 120 PVC pipe within a 36-inch borehole. The annular space around the perforated pipe will be filled with a clear stone pack. The gas header pipe will be connected to the header system for the rest of the landfill. Gas that is extracted from Corridors 8, 9 and 10 will combine with that from the rest of the landfill and, after being processed, will be conveyed to the Johnson Wax Corporation for utilization.

Please call Cindy Cook at (608)267-3542 or Ken Hein at (414)263-8647 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Ed Lynch - HW/3
Thomas Melzer - Town of Mt. Pleasant
Rich Weber - Montgomery Watson, Milwaukee
Deb Nelson - Montgomery Watson, Madison

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION FOR THE
LAND RECLAMATION COMPANY LANDFILL (# 0572)

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984.

3. On January 18, 1994, the Department received a plan modification request from Warzyn, Inc., on behalf of LRC, entitled, "Plan Modification, Corridors 8, 9 and 10, Land Reclamation Company Landfill". The submittal consisted of the report and associated plan sheets and was dated January 14, 1994.

4. Additional information submitted in connection with the modification request includes the following:

   a. A letter dated June 17, 1994 from Warzyn, Inc. to the Department. The letter outlines proposed design changes to the Corridors 8,9 and 10 plan modification request.

   b. A facsimile received by the Department on March 20, 1995 containing comments on the draft plan modification approval.

5. The $1500 plan review fee was received by the Department on February 8, 1994.

6. The special conditions set forth below are needed to assure compliance with chapters NR 500-520, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-520, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-520, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-520, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with chs. NR 500-520, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. NR 144.44 Stats. to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The Department hereby approves the plan of operation modification for Corridors 8, 9 and 10 at the Land Reclamation Company landfill, subject to the following conditions:

Design and Construction

1. All clay layers in the liner shall be constructed in lift heights no greater than 6 inches after compaction using footed compaction equipment having feet at least as long as the loose lift height. Clay shall be processed prior to compaction to allow for moisture content readjustment as needed. Clod size shall be no greater that 4 inches. All compaction equipment utilized shall have a minimum static weight of 30,000 pounds.

2. A sufficient number of passes of the compaction equipment shall be made over each lift of clay to ensure complete remolding of the clay.

3. All clay shall be compacted to 90% modified or 95% standard Proctor density at a moisture content at least 2% wet of optimum based on the characteristics of the appropriate Proctor curve for the clay being placed or at a moisture content within a window of acceptable water contents with the left-most bound being the line of optimums, the right-most bound being the zero-air voids line, and the lower bound being the minimum dry unit weight needed to ensure adequate shear strength. A method to determine the line of optimums shall be proposed and submitted to the Department for approval.

4. The thickness of clay at the tie-in between the 4-foot clay final cover and the RCRA cover shall be increased such that 3 feet of clay remain below the anchor trench of the geomembrane component in all cases.

5. The north edge of the geomembrane shall be covered and protected with plywood or some other suitable material to prevent vehicular or environmental damage to the geomembrane before the first lift of refuse is placed.

6. Construction of the geomembrane component of the liner and final cover

shall comply with the following:

a. Polyethylene geomembranes composed of resins specifically formulated for waste containment purposes shall be utilized in the construction of the geomembrane components of the composite liner and the composite capping layer. Use of alternate geomembrane materials shall be proposed to the Department for review and approval prior to utilization.

b. The geomembrane installation quality assurance consultant shall be an independent party not affiliated with the owner, manufacturer, or installer.

c. Quality assurance personnel shall be on site and performing their assigned duties at all times that the geomembrane is being deployed, seamed, or tested.

d. The geomembrane panels shall be installed parallel to all slopes in excess of 10%, providing alignment of the seams in a direction along and not across the slope.

e. Geomembrane panels made of polyethylene resins shall be welded by double-tracked, fusion welding machines for all linear seams. Corners, butt seams and long repairs shall be fusion welded where possible. Extrusion or fusion welding shall be used for all other repairs, detail work and patches. Department approval shall be obtained prior to use of any other welding method for either panel seaming, repairs, or construction of details.

f. Department approval shall be obtained prior to geomembrane installation for ambient temperatures below 32° F.

g. Wrinkles in the geomembrane component which are higher than they are wide, shall be smoothed or cut out and repaired prior to covering with soil. Guidance to machine operators placing soil on the geomembrane component shall be provided by the use of an observer with an unobstructed view of the advancing lift of soil.

h. To prevent movement and folding of wrinkles, placement of soil over the membrane shall be performed during cooler temperature periods to the extent possible using methods of placement which minimize wrinkling.

i. Repairs for cuts to correct wrinkles and fishmouths longer than one foot shall include terminating the cut in circular holes at each end of the cut prior to patching and welding.

j. Installed geomembrane shall be covered with earthen material within 30 days of completing quality control and quality assurance testing of the installation.

k. All areas of composite liner and leachate collection blanket

shall be covered by an initial lift of solid waste or other acceptable material as soon as possible following Department approval to begin waste placement. After December 31 of the year following construction of the composite liner, any areas of liner and leachate collection blanket not yet covered by the initial lift of waste shall be investigated for damage after freezing conditions have ceased. The owner shall propose an investigative program to the Department for review and approval prior to implementing the investigation.

1. All areas of completed composite capping layer of the final cover shall be covered with the drain layer material and rooting zone material after completion of documentation of geomembrane construction quality assurance. Any topsoil and seeding not completed during the construction season in which the geomembrane was installed shall be completed no later than June 30 following geomembrane installation.

7. Construction of the final cover system shall comply with the following additional elements:

   a. The topsoil on the final cover system shall be seeded with a cover crop within 30 days of placement of the topsoil.

   b. The drain layer shall be terminated for a 10 foot radius around penetrations of the final cover structure, including gas extraction well risers, leachate headwell risers, and leachate collection pipe access risers. The soil placed over the geomembrane around the penetrations shall be rooting zone soil.

   c. Penetrations of the geomembrane component of the composite capping layer shall be fitted with polyethylene pipe boots welded to membrane at the same angles which the penetrations make with the final cover slope.

8. A narrative shall be submitted to the Department at least two weeks prior to the start of construction which describes the method planned to be used in monitoring the leachate headwell. If electronic water level indicators are proposed to be used, please indicate how condensate on the side of the riser will be differentiated from the actual head level.

9. Field shear and peel tests of geomembrane seams and membranes shall be performed using standardized specimen sizes in tensile testing machines with mechanically or electrically controlled rates of jaw separation. The tensile testing machine shall be equipped with electrically controlled and smoothly moving jaw separation apparatus, capable of adjustments and defined settings for jaw separation rate, and displaying jaw separation rates and tensile loadings exerted on the geomembrane samples. Tensile testing machines shall be accompanied by documentation for calibration conducted within one month of the start of geomembrane installation. Geomembrane samples shall be prepared for

field analyses by use of templates and cutting tools that prepare uniformly sized samples.

10. A preconstruction report shall be submitted to the Department no later than seven days prior to the preconstruction meetings for the construction of the geomembrane component of the composite liner and the composite capping layer. At a minimum, one copy shall be provided to the central office in Madison and one copy shall be provided to the Southeast District office. The report(s) shall include contractor and product identification, revised details, and changes incorporated to address Department requirements. The preconstruction report shall include, at a minimum, the following:

    a. Any revisions and detail diagrams incorporating all changes, agreements, and instructions between the owner, the installer, and the quality assurance contractor. The report shall include any proposed changes to details of the design or construction required by this approval. The report shall include a summary of any proposed changes to the quality assurance manual. The report shall indicate the proposed limits of installation and schedule for construction of the composite liner or the composite capping layer.

    b. Identification of the manufacturer of the geomembrane and other geosynthetics used in construction, manufacturer qualifications, technical specifications of the resin and polymer selected, and results of the manufacturer's quality control tests on the geomembranes supplied to the project.

    c. Identification of the installation contractor, contractor qualifications and onsite supervisory staff, and proposed seaming methods and equipment. The report shall include a quality control plan that the installation contractor will follow in the installation of the geomembrane liners. The report shall describe contractor-specific welding equipment and methods, panel overlaps, patching and seam repair procedures, seamer qualifications, use of trial seams, use of nondestructive and destructive tests, and acceptable limits on subgrade and weather conditions.

    d. Identification of the quality assurance consultant indicating on-site staff and a summary of their qualifications and experience. The report shall indicate the proposed equipment and test methods to be used for construction quality assurance and the laboratory to be used to testing geosynthetic samples. The report shall include a copy of the construction quality assurance manual to be used during documentation of construction.

    e. Frequency of testing geomembrane materials and the proposed test methods to be used, including the identification of destructive and nondestructive testing methods.

f. A proposed method of removing coarse gravel and cobbles on the surface of the compacted clay component, a construction method to assure a smooth surface prior to geomembrane placement, and a documentation method to record the elimination of unacceptable material on the surface of the compacted clay.

g. Panel layout pattern for geomembrane placement.

h. Source and construction of specialty connections between the geomembrane component and any penetrations, and any proposed revisions to details of connecting pipe penetrations to the geomembrane. The report shall identify methods to test the integrity of seams and connections to penetrations of the geomembrane.

i. Identification of the fabricator of geotextiles and other geosynthetics used in site construction, technical specifications of the products and materials to be used, methods used to bond the materials together and to connect panels together, installation contractor, contractor qualifications, and onsite supervisory staff.

11. Daily inspector's records shall be prepared for each day that significant geomembrane installation is either attempted or accomplished. The records shall describe changes or adaptations to the approved construction practices, progress achieved, and nonconforming conditions of subgrade, geomembrane, pipe, connections, and any specialty sections. The records shall be included in the construction documentation required by this approval. The records shall also contain the following:

a. Identification and location of geomembrane panels placed, with modifications of the fabrication plan noted.

b. Location of field seams and ends of panels, and results of all destructive and nondestructive field tests of test seams and installed seams.

c. Methods and procedural steps taken prior to field seaming of geomembrane panels.

d. Location of wrinkles that were large enough to double over and were cut out and repaired.

e. Location of repairs and destructive samples and the results of the nondestructive testing of those repairs.

f. Amount and location of geotextile and other geosynthetics used in construction of the composite liner, leachate collection system, and final cover system.

g. Weather conditions and constraints.

12. Construction inspections shall be performed at this facility as indicated below. The Southeast District office and central office shall be notified a minimum of one week prior to beginning each of the construction events listed below for the purpose of allowing the Department to inspect the work. A fee shall be paid to the Department for each required inspection in accordance with c. NR 520.04(5), Wis. Adm. Code. The inspection fees shall be paid at the time the construction documentation is submitted to the Department for review.

    a. Inspections for liner construction shall include:

        i. Construction of the geomembrane component of the liner.

        ii. Construction of the sideslope riser.

    b. Inspections for final cover construction shall include:

        i. Construction of the geomembrane component of the capping layer.

        ii. Construction of the gas extraction wells.

Documentation and Reporting Requirements

13. Conformance sampling and testing shall be conducted on geomembrane materials delivered on site and used in construction of the liner or final cover. Sampling shall be conducted by quality assurance staff. Testing shall be conducted by the quality assurance staff or by a quality assurance laboratory. Frequencies shall be no less than those listed in the following schedules. Conformance testing data shall be included in the construction documentation.

    a. Geomembrane thickness shall be tested upon receipt at the facility at the rate a minimum of 5 areas measured per roll.

    b. Geomembrane tensile properties (strength and elongation in yield and break) shall be tested at a minimum of one test per 40,000 ft^2 of geomembrane installed and a minimum of one test on rolls from each batch of resin used to manufacture rolls delivered on site.

    c. Geomembrane density and melt index of the polymer shall be tested at a rate of one test per 40,000 ft^2 of geomembrane installed and a minimum of one test on rolls from each batch of resin used to manufacture rolls delivered on site.

    d. Geomembrane environmental stress cracking resistance shall be tested at a rate of one test per 200,000 ft^2 of geomembrane installed unless documentation is provided that the manufacturer performed a minimum of one test for each batch of resin used to manufacture rolls delivered on site.

14. Prequalification tests for geomembrane welding machines shall be conducted by a minimum of two prequalification seams run per welding machine each day by each seaming technician performing geomembrane welding, with additional test runs following work interruptions or weather changes. Extrusion welding machine performance shall be verified by a minimum of one test seam per day per machine. A portion of each prequalification specimen shall be tested in the field for acceptable tensile strength. Test results shall be collated for documentation along with notes on date, ambient temperature, technician and seaming machine used to make the seam, and results of both field and laboratory tests.

15. Documentation of seams and connections shall be conducted on geomembrane materials used in construction of the liner or final cover. Field sampling and testing shall be observed by quality assurance staff. Laboratory testing shall conducted by the quality assurance staff or by a quality assurance laboratory. Sampling and testing shall be conducted at frequencies no less than those listed in the following schedules. Documentation of seams and connections shall be included in the construction documentation.

    a. Nondestructive field seam testing shall be performed on all seams of geomembrane attached by welding or mechanical attachments to other geomembrane sheet, plastic plate, and pipe penetrations wherever possible.

    b. Destructive field and laboratory seam test samples shall be taken at a rate of one sample per 500 feet of fusion seam accomplished, unless another frequency or spacing is approved by the Department. Destructive seam test samples shall be tested under the same protocol as the welding machine test seams.

    c. A destructive sample shall be taken from at least one end of each fusion weld and tested using a calibrated field tensile testing machine. Sampling may be waived for butt seams or seams subjected to extrusion welds of tee joints or repairs, where such welds are subjected to integrity tests specific to extrusion welds.

16. Site construction documentation shall be submitted to the to the Department for review and approval within 90 days of completion of construction of the liner, and within 90 days of completion of the final cover for the final cover segment. Three copies shall be submitted to the central office in Madison and one copy shall be submitted to the Southeast District office. Construction documentation shall comply with the format and technical requirements of chs. NR 500 and 516, Wis. Adm. Code, and the following:

    a. Plan sheets shall indicate the location of all soil and geomembrane test locations, geomembrane panel placement, geomembrane patches and seam repairs, geomembrane destructive sample locations, and pipe penetrations. All seams and panels

shall be identified on plan sheets with appropriate identification codes and markings indicating sequence of construction.

b. Plan sheets for liner construction documentation shall include location of manholes and header lines for the leachate drainage system, leachate headwells, and alignment of discharge pipelines. Plan sheets for final cover construction shall include the location of gas extraction wells, gas system lateral and header pipes, and the alignment of the final cover drainage systems.

c. Detail drawings shall be made and photographs shall be taken that record the construction of the following:

   i. Leachate line penetrations, leachate headwells, gas extraction wells and header and lateral pipes in the final cover, sequence of placement of construction materials, bedding and assembly of the lateral and header pipes, pipe joining details, and welded and mechanical attachments to penetrations and geomembrane.

   ii. Compaction methods used in placement of the clay component of the liner and final cover, including equipment specifications and number of passes.

   iii. Anchorage details for geosynthetics used in construction of the geomembrane of the final cover.

   iv. All manufactured components installed as part of construction, including leachate collection sump, sideslope riser, leachate conveyance piping and manholes, controls for the leachate pump, and gas extraction wells.

d. Narrative shall describe construction in chronological fashion. The description shall be based upon the daily inspector's reports required by this approval. The following shall be included:

   i. Any deviations from the approved plans and the rationale for such deviations.

   ii. Description of all actions taken to prepare or condition the compacted clay component and to eliminate coarse material in the surface of the compacted clay.

   iii. Description of controls and machinery used to place the leachate collection blanket on the composite liner or the drain layer and rooting zone soils on the composite capping layer in terms of machine weights, limits on machine maneuvers, lift thickness, and haulway and dumping controls.

   iv. A chronological record of the start and completion of

placing each component of the liner, or final cover.

v. Identification of contractors and subcontractors involved in the construction of soil layers, geosynthetics, piping systems, and other landfill appurtenances.

vi. Identification of the sources and product information for manufactured items used in site construction, including all geosynthetics, pipes, pumps, and collection tanks.

e. The report shall include narrative, observations, and tabulated data for all tests conducted on subgrade investigations, compacted clay and other soil materials used in construction of the liner, final cover, the leachate collection system, or the gas extraction system.

f. The report shall include narrative and tabulated data for all geomembrane installation and tests, including tests performed by the resin supplier, manufacturer, installer, and quality assurance consultant. Narrative and tabulated data shall be included for all tests of prequalification seams for all fusion and extrusion welders and welding technicians employed in geomembrane construction. Documentation shall include calibration of the tensile testing machine, conformance tests, and destructive and nondestructive tests. The narrative shall include identification of the geomembrane supplier and installer, material specifications of the installed geomembrane, and attachment and welding methods used on the project. An analysis of all geomembrane tests shall be presented. All raw data from geomembrane testing shall be appended to the report.

g. The report shall include documentation that the sideslope riser pumps and conveyance systems for leachate have been tested and are operating as designed. Documentation shall include results of pressure tests of the leachate conveyance piping, explanation of failed tests, and repairs and retests.

h. The report shall include identification of the sources and models of pumps and pump controls for the leachate collection system, piping used for the sideslope risers and discharge lines, and methods used to connect pipe segments of the sideslope risers and discharge lines for the leachate system.

i. Narrative shall be included which describes the geotextile used to cover the geomembrane in the liner and the final cover. The seaming method for geotextile or geocomposite panels shall be included.

j. The report shall identify seeding mixes and seeding rates used for revegetation of the topsoil, including use of any cover species, mulch, fertilizer, and other soil amendments.

k. Well logs depicting as-constructed features for each gas extraction well including: surface elevation and depth of borehole, elevation and length of perforated pipe, and elevation of gravel backfill, general soil backfill, and seals. The logs shall include a summary of the appearance of the wastes extracted as part of the drilling operation, liquids encountered, and presence of sludges or other wastes that might reduce the effectiveness of the wells or probes.

l. Documentation shall be included for any monitoring point removed, damaged, replaced, or repaired during construction.

m. The report shall include a signed statement by the persons listed below that the construction was completed in accordance with approved plans with any deviations noted:

   i. The installer's quality control person, including signed acceptance forms for subbase and completion of geomembrane.

   ii. Quality assurance staff.

   iii. Supervisor of earthwork construction.

The Department retains the jurisdiction either to require the submittal of additional information or to modify the approval at any time if, in the Department's opinion, further modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial

review shall name the Department as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: MAR 31 1995

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Tim Kessenich

Tim Kessenich, Hydrogeologist
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

State of Wisconsin \ DEPARTMENT OF NATURAL RESC

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George E. Meyer
Secretary

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SOLID WASTE TELEFAX 608-267-2768

June 29, 1995

FILE REF: FID # 252076990
Racine Co.
SW
Approvals

Mr. Hank Koch, P.E.
Land Reclamation Company
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

SUBJECT: Plan of Operation Approval Modification for a Special Waste Acceptance Program at the Land Reclamation Company Landfill (LRC), License # 0572, Racine, WI, WID: 076171008

Dear Mr. Koch:

I am pleased to inform you that your requested modifications to your plan of operation approval have been reviewed and approved. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on December 19, 1984.

The proposed modification involves implementing a program at the landfill for the review and disposal of special waste. Currently, Department approval is required of all industrial process wastes prior to disposal at the site. This modification approval will allow LRC to accept categorized wastes and dispose of them in a specified manner without first seeking Department approval. This approval also requires that a summary of the special waste program be submitted to the Department on an annual basis.

This letter approves materials suitable for landfilling. Please be reminded that petroleum contaminated soils are also subject to NR 700, Wis. Adm. Code

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regulations and pending NR 419, Wis. Adm. Code regulations.

Please call Cindy Cook at (608)267-3542 or Ken Hein at (414)229-0843 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Tim Kessenich - SW/3
Thomas Melzer - Town of Mt. Pleasant
Rick Jones - City of Racine

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION FOR THE
LAND RECLAMATION COMPANY LANDFILL (# 0572)
WID 076171008

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the owner was known as Land Reclamation, Ltd. (LRL).

2. The Department issued a conditional plan of operation approval for the facility on December 19, 1984.

3. The Department received a report on January 31, 1994 submitted by LRC which included a plan modification request for a special waste program approval. The report was dated January 27, 1994. The Department received an update to the plan modification request on March 27, 1995.

4. The $1,500 plan review fee was received by the Department on March 21, 1994.

5. Additional facts relevant to the review of the plan modification include the following:

   a. The special waste plan for this facility will be a more efficient process than the current procedure for approving special wastes.

   b. The special wastes proposed for disposal at this facility are not expected to significantly alter leachate generation rates or characteristics.

6. The special conditions set forth below are needed to assure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code. If the special conditions are complied with, the proposed modifications will not inhibit compliance with the standards set forth in chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-520 and NR 660-685, Wis. Adm. Code.

3. Conditions of approval set forth below are needed to ensure compliance with NR 500-520 and NR 660-685, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. NR 144.44 Stats. to issue the following conditional plan of operation approval modification.

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION

The Department hereby approves the plan of operation approval modification for a special waste acceptance program at the Land Reclamation Company landfill (LRC), subject to the following conditions:

1. The disposal of special wastes at this facility shall comply with the analytical protocols, concentration limits, and disposal operations listed in the tables contained in the "Land Reclamation Company Landfill: Special Waste Management Plan" dated January 27, 1994 and updated on March 23, 1995.

2. When changes in the production process of an industrial generator occur which may produce a change in the physical or chemical characteristics of an approved waste, the waste shall be retested according to the approved protocol to determine if the waste is acceptable for disposal at the landfill.

3. The annual report required for this facility shall include a summary of the special waste program over the previous calendar year including the following:

   a. Total volume and tonnage of special wastes and tabulation by waste category for each of the waste types in the Special Waste Management Plan.

   b. Computation of the total volume of all wastes disposed at this facility and the proportion of special wastes compared to the total volume of waste landfilled.

   c. A list of the wastes which did not meet the LRC imposed concentration limits and were still accepted for disposal, and the reason for acceptance.

   d. A list of the wastes which were denied disposal at the landfill and the reason for denial.

   e. Any proposed changes to the waste categories, analytical

protocols or disposal operations.

f. Any problems encountered with the special waste program and their resolution.

The Department retains the jurisdiction either to require the submittal of additional information or to modify the approval at any time if, in the Department's opinion, further modifications are necessary. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: JUN 2 9 1995

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

FOR LS

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

WISCONSIN
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George E. Meyer
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SOLID WASTE TELEFAX 608-267-2768

File Ref: FID #252076990
Racine Co.
SW
Approvals

NOV 2 1995

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NOV 0 3 1995

D.N.R. SED Hqtrs.
Milwaukee, WI

Hank Koch
Land Reclamation Company
2000 Oakes Road
Racine, WI 53406

SUBJECT: Construction Documentation Approval, Corridor 7, North Slope Final Cover and Completion of Corridor 7, East Slope Final Cover, Land Reclamation Landfill, #0572, Racine County, WI.

Dear Mr. Koch:

I am pleased to inform you that your Construction Documentation has been approved for the clay final cover of the north slope of Corridor 7 of your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the construction of the Corridor 7 north slope final cover, which was documented in a report submitted to the Department by Montgomery Watson, on behalf of LRC, entitled, "Construction Observation Report, Corridor 7, North Slope Final Cover, Land Reclamation Company Landfill." The report was dated February 28, 1995 and was received by the Department on March 3, 1995. Construction began in October 1993 and continued until October 1994. Construction activities included the following: exposure of the top of the north sidewall liner in Corridor 7 to facilitate tie-ins; additional liner and drainage blanket construction; exposure and tie-in of the west edge of the east slope final cover and the north edge of the RCRA Phase II final cover; construction of a NR 500, Wis. Adm. Code, final cover on the north slope of Corridor 7; construction of surface water drainage features; and the placement of compost followed by seeding, fertilization and mulching.

This letter also approves the construction documented in the September 14, 1994 report submitted to the Department by Warzyn, Inc., on behalf of LRC, entitled, "Addendum to the Construction Observation Report, Corridor 7 East Slope Final Cover, Land Reclamation Company Landfill". This report addresses the activities performed for the completion of the construction of the final cover of the east slope of Corridor 7. The majority of Corridor 7 had been constructed earlier and its documentation approved in an April 19, 1994 letter from the Department. The addendum submitted to the Department contains documentation of Area II of the east slope of Corridor 7 including:

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redocumentation of existing clay cap thickness; construction of a sideslope surface water diversion berm; and placement of topsoil and compost followed by seeding, fertilizing, and mulching.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

cc: Ken Hein - SED
Mary Carrington - Town of Mount Pleasant
Fred Larson - City of Racine
Rich Weber - Warzyn

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION
APPROVAL FOR THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. Montgomery Watson Americas, Inc. (formerly Warzyn Engineering, Inc.), on behalf of LRC, submitted construction documentation required by condition 54 of the plan of operation approval.

4. The information submitted as construction documentation includes the following:

   a. A report submitted by Warzyn Engineering, Inc., on behalf of LRC, entitled, "Addendum to the Construction Observation Report, Corridor 7 East Slope Final Cover, Land Reclamation Landfill," and dated September 14, 1994.

   b. A report submitted by Montgomery Watson Americas, Inc, on behalf of LRC, entitled, "Construction Observation Report, Corridor 7 North Slope Final Cover", and was dated February 28, 1995.

5. The $1000 construction documentation fee for the north slope construction was received on June 26, 1995.

6. Additional documents considered in connection with the review of the construction documentation include the following:

   a. The December 19, 1984 plan of operation approval.

   b. The March 31, 1988 modification to the hazardous waste closure and long-term care plan.

   c. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal

facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the proposed construction documentation for the Corridor 7 north slope final cover and the completion of the Corridor 7 east slope final cover of the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: NOV 2 1995

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy Cook, P.E.
Solid Waste Management Section

Condition/Closure Modification
SEE
HW/CA

WISCONSIN
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MAY 23 1996
D.N.R. SED Hqtrs.
Milwaukee, WI

MAY 2 2 1996

Mr. Hank Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine
SW
Approvals

SUBJECT: Construction Documentation Approval for the South Slope of the Hazardous Waste Unit, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

This letter serves to inform you that your construction documentation has been reviewed and approved for the construction of the South Slope of the Hazardous Waste Unit at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves the South Slope construction of the Hazardous Waste Unit. The South Slope construction was required by the Department's March 31, 1988 approval letter which addressed "Modifications to the Hazardous Waste Closure and Long-Term Care Plan". The March 1988 approval required that the south slope of the hazardous waste unit be stabilized such that the resulting slope be at a maximum 3:1, and that surface water be managed to minimize erosion.

The construction documentation, which was prepared by Montgomery Watson, was entitled, "Construction Observation Report, South Slope Construction, Hazardous Waste Unit, Land Reclamation Company Landfill." The report was received by the Department on January 15, 1992. The report discussed the undercutting of unsuitable soils on the south slope, the placement of general fill to bring the slope to 3:1, and placement of a 4-foot thick recompacted clay cover. Subsequently, Addendums No. 1 and 2 were also submitted to the Department on March 16, 1993 and January 28, 1994, respectively.

Addendum No. 1 discussed the construction of a diversion berm on the south slope, placement of the topsoil layer, vegetation of the slope, and the repair and construction of drainage features for the RCRA cap on the Hazardous Waste Unit. The construction documented in Addendum No. 1 took place from November 1991 to May 1992. Addendum No. 1 also outlined additional cap repair, landscaping and surface water management device repair which would need to be accomplished.

Addendum No. 2 to the Construction Observation Report for the South Slope Construction documented construction activities which took place from April through October of 1993. The construction activities included the evaluation and repair of the clay cap, erosion rills and topsoil thickness as well as

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Mr. Koch

revegetating the south slope. Other construction activities documented by this report included south slope and RCRA Phase I drainage improvements as well as the desilting of gas and leachate extraction wells and the over seeding of areas of the RCRA Phase I cap.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Solid Waste Management Section
Bureau of Solid & Hazardous Waste Management

LS:cmc

cc: Ken Hein - SED
Rich Weber - Warzyn, Inc., Milwaukee Office

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL
FOR THE CONSTRUCTION OF SOUTH SLOPE CONSTRUCTION
OF THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes the following:

   a. A report submitted by Warzyn, Inc. (Warzyn), on behalf of LRC, entitled, "Construction Observation Report, South Slope Construction, Hazardous Waste Unit, Land Reclamation Company". The report was dated January 14, 1992 and was received by the Department on January 15, 1992.

   b. A report submitted by Warzyn, on behalf of LRC, entitled, "Addendum to the Construction Observation Report, South Slope Construction Hazardous Waste Unit, Land Reclamation Company" The report was dated March 15, 1993 and was received by the Department on March 16, 1993.

   c. A report submitted by Warzyn, on behalf of LRC, entitled, "Addendum No. 2 to the Construction Observation Report South Slope Construction, Hazardous Waste Unit, Land Reclamation Company Landfill". The report was dated January 24, 1994 and was received by the Department on January 28, 1994.

4. The $1000 construction documentation review fee was received by the Department on February 19, 1992.

5. Additional documents considered in connection with the review of the construction documentation include the following:

Mr. Koch

a. A Solid Waste Facility Inspection Form dated February 4, 1993 regarding an inspection made by Ken Hein of the Department regarding the LRC landfill.

b. A memo to the file dated February 24, 1993 and written by Hank Koch of LRC regarding the WDNR inspection of the south slope erosion.

c. Other Departmental correspondence pertaining to the LRC landfill.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation for South Slope Construction of the Hazardous Waste Unit of the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial

review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: MAY 2 < 1996

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Solid Waste Management Section

Cindy M. Cook

Cindy M. Cook, P.E.
Solid Waste Management Section

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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DNR TDD 608-267-6897
SOLID WASTE MGMT 608-266-2111
SOLID WASTE FAX 608-267-2768

AUG 1 1996

Mr. Hank Koch
1989 Oakes Road
P.O. Box 081220
Racine, WI 53408-1220

FILE REF: FID # 252076990
Racine
SW
Approvals

SUBJECT: Construction Documentation Approval for the Barrier Wall of the Hazardous Waste Unit, Land Reclamation Company Landfill, Racine County

Dear Mr. Koch:

This letter serves to inform you that your construction documentation has been reviewed and approved for the construction of the Barrier Wall of the Hazardous Waste Unit at your disposal facility. You should attach this approval directly to the plan of operation approval issued by the Department on December 19, 1984.

This letter approves a portion of the Barrier Wall construction of the Hazardous Waste Unit. The Barrier Wall construction was required by the Department's March 31, 1988 approval letter which addressed "Modifications to the Hazardous Waste Closure and Long-Term Care Plan". The March 1988 approval required that a barrier wall be constructed between the hazardous waste unit and the municipal solid waste portions of the landfill. The Barrier Wall consists of a seven foot thickness of compacted clay with a one foot granular drainage blanket on either side of the clay layer. The design also includes two horizontal gas extraction lines which are placed beneath the interior granular layer.

The construction documentation, which was submitted by RMT, Inc., was entitled, "Construction Documentation Report for Barrier Wall Construction, Prepared for Land Reclamation Company." The report was received by the Department on July 18, 1996. The report contains documentation for barrier wall construction which took place in the 1994, 1995 and 1996 construction seasons. Documentation of the 1994 and 1995 barrier wall construction had been previously submitted to the Department in the form of a letter report by Warzyn and Montgomery Watson, respectively.

The portion of the barrier wall which was constructed in 1996 remains to be tied-in with the RCRA cap. This will allow LRC to dispose of any hazardous waste which would be excavated as a result of any work performed on the hazardous waste unit. The area left open is approximately 10 to 30 feet wide.

Please call Ken Hein at (414)562-9645 or Cindy Cook at (608)267-3542 if you have any questions regarding this approval.

Sincerely,

Lakshmi Sridharan

Lakshmi Sridharan, Ph.D., P.E., Chief
Bureau of Waste Management

LS:cmc

cc: Ken Hein - SED
Katherine Martin - RMT
Rich Weber - Montgomery Watson, Milwaukee Office

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL
FOR THE CONSTRUCTION OF BARRIER WALL
OF THE
LAND RECLAMATION COMPANY LANDFILL, # 0572

FINDINGS OF FACT

The Department finds that:

1. Land Reclamation Company (LRC) owns and operates a hazardous and solid waste disposal facility located in the N 1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin. Prior to May 1, 1989, the facility was known as Land Reclamation, Ltd. (LRL).

2. A conditional plan of operation approval was issued by the Department for the facility on December 19, 1984.

3. The information submitted as construction documentation includes the following:

   a. A report submitted by RMT, Inc., on behalf of LRC, entitled, "Construction Documentation Report for Barrier Wall Construction, Prepared for Land Reclamation Company". The report was dated July 18, 1996 and was received by the Department on July 18, 1996.

   b. A letter report submitted by Montgomery Watson, on behalf of LRC, entitled, "Construction Observation Letter Report, 1995 West Barrier Wall Phase III Construction, Land Reclamation Company Landfill" The report was dated January 4, 1996.

   c. A letter report submitted by Warzyn, on behalf of LRC, entitled, "Construction Observation Report, 1994 West Barrier Wall Construction, Land Reclamation Company Landfill". The report was dated September 21, 1994.

4. The $1500 construction documentation review fee was received by the Department on July 29, 1996.

CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(4)(b), Stats. and NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION
APPROVAL

The Department hereby approves the construction documentation for Barrier Wall Construction of the Land Reclamation Landfill.

The Department reserves the right to require the submittal of additional information and to modify this approval at any time, if in the Department's opinion, modifications are necessary. Unless specifically noted, the condition of this approval does not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision has been mailed, or otherwise served by the Department, to file your decision with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to section 227.48(2), Stats.

Dated: AUG 1 1996

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lakshmi Sridharan

Lakshmi Sridharan, PhD., P.E., Chief
Bureau of Waste Management

Cindy M. Cook

Cindy M. Cook, P.E.
Bureau of Waste Management

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

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9531 Rayne Road, Suite IV
Sturtevant, Wisconsin 53177
Telephone 262-884-2300
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TTY 262-884-2304

July 2, 2004

FID # 252076990
SW/Approvals

Mr. Daniel Otzelberger, P.E.
Republic Services
Kestrel Hawk Recycling and Disposal Facility (RDF)
1989 Oakes Road
Racine, WI 53406

55378
FIST SUB# 55987
DEC # 11531
DEC # 12615

Subject: Remaining Old Site Final Cover: Use of LLDPE Geomembrane, Closure Schedule for the Remaining RCRA and non-RCRA Final Cover for the "Old Site", Extension of RCRA Cap to West Edge of Corridors 8, 9 & 10 Baseliner (RCRA Phase 3 Final Cover) and Northwest expansion Final Cover Closure Cost to include remaining RCRA and non-RCRA Final cover of the "Old Site" - Plan Modification Approval for the Kestrel Hawk Landfill, Lic# 00572

Dear Mr. Otzelberger:

We have completed our review of your request for a RCRA Closure Plan Modification for the Kestrel Hawk Landfill, dated July 31, 2003 with subsequent addenda and your request for use of LLPDE geomembrane in the RCRA Area of the Kestrel Hawk Landfill, dated April 7, 2003.

Based on our review we have determined that we are able to conditionally approve your above requests. Please keep the attached plan approval modification with the plan of operation approval for this facility.

Condition 1 of this approval does not allow the continued disposal of waste in the unclosed portions of landfill discussed in the July 31, 2003 plan modification request, with addenda. This includes drill cuttings. The reason for this condition is because these areas of landfill, along with the old City of Racine Landfill and the Hazardous Waste Landfill, were originally approved to be closed several years ago, but were not. In addition, the remaining unclosed RCRA portion is above the barrier containment wall. No waste may be placed outside this wall.

Currently the only portion of the Kestrel Hawk Landfill that the Department considers to be "active" for waste disposal is the Northwest Expansion. Republic Services may propose a disposal method for future drill cuttings in a plan modification request which may include disposal in certain areas for certain classified drill cuttings in the Hazardous Waste Unit within the barrier containment structure.

The Department is unable to approve your request for an exemption from the March 31, 1995 Plan of Operation Modification Approval by the Department for design changes to corridors 8, 9, and 10 which requires a composite RCRA final cover over the area labeled Area 1 on the September 4, 2003 addendum figure 1A. Condition 2a requires Republic to submit a schedule to the Department within 60 days for when Republic plans to place RCRA final cover in this area. The Department believes RCRA final cover should be placed by the end of the 2005 construction season.

Condition 2b requires Republic to submit the updated financial assurance for closure of the remaining uncapped areas and condition 3 requires Republic to submit the required $600 plan review fee for the

review of the plan modification request to use LLDPE geomembrane, dated April 7, 2003. An invoice is enclosed.

If you have any questions regarding this approval please contact Joe Lourigan, Hydrogeologist, at (262) 884-2347 or Pat Brady, Waste Management Engineer, at (414) 263-8594.

Sincerely,

FOR FMK

Frances M. Koonce, Supervisor
Waste Management Program
Southeast Region, WDNR

c:
Joe Lourigan – Sturtevant

BEFORE THE
STATE OF WISCONSI N
DEPARTMENT OF NATURAL RESOURCES

"OLD SITE" RCRA AND NON-RCRA FINAL COVER:
USE OF LLDPE GEOMEMBRANE,

CLOSURE SCHEDULE FOR REMAINING RCRA AND NON-RCRA FINAL COVER FOR THE "OLD SITE",

EXTENSION OF RCRA CAP TO WEST EDGE OF CORRIDORS 8, 9 & 10 BASELINER (RCRA PHASE 3 FINAL COVER), AND

NORTHWEST EXPANSION FINAL COVER CLOSURE COST TO INCLUDE REMAINING RCRA AND NON-RCRA FINAL COVER OF THE "OLD SITE"

PLAN MODIFICATION APPROVAL
FOR THE KESTREL HAWK PARK LANDFILL
LICENSE # 00572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. owns and operates the Kestrel Hawk Park Landfill (formerly owned by USA Waste Services and known as the Land Reclamation Company Landfill), a solid and hazardous waste disposal facility located in the N1/2 of S23, T3N, R22E, City of Racine, Racine County, Wisconsin.

2. The Department issued a conditional Plan of Operation Approval for the facility on December 19, 1984 with subsequent modifications.

3. The Department issued a conditional plan of operation for the expanded facility on August 30, 1996, referred to as the Kestrel Hawk Northwest Expansion Landfill with subsequent modifications.

4. On April 8, 2003 the Department received a plan modification request from Republic Services, Inc., dated April 7, 2003 to use 40 mil LLDPE geomembrane instead of the approved 40 mil VLDPE geomembrane with the RCRA final cover design at the Kestrel Hawk Landfill, Lic#0572.

5. On August 6, 2003 the Department received a plan modification request from Republic Services, Inc., dated July 31, 2003 to amend the timing for final cover construction for the remaining RCRA Phase 3 final cover construction for the Kestrel Hawk Landfill, Racine, Wisconsin, WDNR License #0572. This plan modification request also included the following:

   a. an adjustment to closure costs for the Kestrel Hawk Northwest Expansion for the purposes of financial assurance, and;

   b. a request for an exemption from the requirement for a composite final cover over the composite baseliner area of corridors 8, 9 and 10 for a strip labeled on September 4, 2003 addendum figure 1A as Area 1 as required in the March 31, 1995 Plan of Operation Modification Approval by the

Department for design changes to corridors 8, 9, and 10 at the Land Reclamation Company Landfill (Kestrel Hawk Landfill).

6. On August 27, 2003 the Department received an addendum from Republic Services, Inc., dated August 26, 2003 to the plan modification request referenced in finding of fact number 5 above to include an additional area referenced in the addendum as area B.

7. On September 9, 2003 the Department received another addendum from Republic Services, Inc., dated September 4, 2003 to the plan modification request referenced in finding of fact number 5 above. This addendum included a revised plansheet figure 1, which is referenced as figure 1A to illustrate the many areas of both RCRA and non-RCRA final cover that require future action by Republic Services, Inc..

8. The information reviewed by the Department specifically for this approval includes the documents referenced in finding of facts 4 through 7 above.

9. Other information considered are documents contained in the Department's file for Kestrel Hawk RDF under facility identification number (FID#) 252076990, including the following documents:

   a. an expedited plan modification request submitted by Republic Services, dated May 17, 2001 and received by the Department on May 5, 2001. This expedited plan modification requested the use of 40 mil HDPE and 40 mil LLDPE for use in final cover construction.

   b. a plan modification request submitted by Warzyn, Inc. on behalf of Land Reclamation Company Landfill, dated June 17, 1994 proposing design changes to corridors 8, 9 and 10 at the Land Reclamation Landfill (Kestrel Hawk Landfill), and;

   c. the March 31, 1995 Plan of Operation Modification Approval by the Department for design changes to corridors 8, 9, and 10 at the Land Reclamation Company Landfill (Kestrel Hawk Landfill.

   d. a report dated May 10, 1991 and received by the Department on May 13, 1991, entitled " Land Reclamation Company Landfill, RCRA Final Cover, Modifications Report ", prepared by GeoSyntec Consultants of behalf of Land Reclamation Company;

   e. the September 16, 1991 Plan of Operation Modification Approval by the Department for RCRA Final Cover, and;

   f. an e-mail dated August 4, 2003 from Robert Grefe, WDNR Waste Management Program Engineer in the Technical Support Section, to Mark Stohl, WDNR Waste Management Engineer.

10. In the report dated May 10, 1991 and received by the Department on May 13, 1991, entitled " Land Reclamation Company Landfill, RCRA Final Cover, Modifications Report ", prepared by GeoSyntec Consultants of behalf of Land Reclamation Company it states on page 2 that the estimated phase 3 final cover construction will take place in the summer of 1995 or 1996. This has not been done and was listed in the Department's February 25, 2003 Notice of Violation alleged violation # 24.

11. On December 22, 2003 the Department received payment of the required plan review fee of $1,500 under ch. NR 520, Wis. Adm. Code and $600 under s. 680.45, Wis. Adm. Code for the plan modification request dated July 31, 2003.

12. The Department has not received payment for the required $600 plan review fee under s. 680.45, Wis. Adm. Code for the plan modification request dated April 7, 2003, submitted by Republic Services requesting use of 40 mil LLDPE geomembrane instead of the approved 40 mil VLDPE.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., to modify a plan of operation approval if the modification would not inhibit compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm.. Code.

2. The Department has authority to approve a plan of operation with special conditions if the conditions are needed to ensure compliance with chapters NR 500-538 and the NR 600 series, Wis. Adm. Code.

3. In accordance with the foregoing, the Department has the authority under s. 289, Stats., to issue the following plan of operation approval modification.

4. Conditions of approval set forth below are needed to ensure compliance with chs. NR 500-538 and the chs. NR 600 series, Wis. Adm. Code

DETERMINATION OF EXEMPTIONS

Republic Services, Inc. has not demonstrated justification for granting an exemption from the requirement in the March 31, 1995 Plan of Operation Modification Approval by the Department for design changes to corridors 8, 9, and 10 at the Land Reclamation Company Landfill (Kestrel Hawk Landfill) and the requirement contained in s. NR 504.07 (1) (c), Wis. Adm. Code for a composite final cover. The requested exemption from the required composite final RCRA cover over the area labeled Area 1 in the September 4, 2003 addendum figure 1A is not approved.

CONDITIONAL PLAN OF OPERATION
APPROVAL MODIFICATION

"OLD SITE" RCRA AND NON-RCRA FINAL COVER:
USE OF LLDPE GEOMEMBRANE,

CLOSURE SCHEDULE FOR REMAINING RCRA AND NON-RCRA FINAL COVER FOR THE "OLD SITE",

EXTENSION OF RCRA CAP TO WEST EDGE OF CORRIDORS 8, 9 & 10 BASELINER (RCRA PHASE 3 FINAL COVER), AND

NORTHWEST EXPANSION FINAL COVER CLOSURE COST TO INCLUDE REMAINING RCRA AND NON-RCRA FINAL COVER OF THE "OLD SITE"

FOR THE KESTREL HAWK PARK LANDFILL
LICENSE # 00572

The Department hereby approves the plan of operation modification for the RCRA Final Cover: Use of LLDPE Geomembrane, Closure Schedule for the remaining RCRA and non-RCRA final cover over the "Old Site", and the Northwest Landfill Expansion Financial Assurance adjustment to include the remaining RCRA and non-RCRA Final Cover Closure Cost for the Kestrel Hawk Landfill proposed in the documents referenced in the findings of facts 4 through 7 above, subject to chs. NR 500 and NR 600, Wis. Adm. Code and the following conditions:

1. No additional solid or hazardous waste, including drill cuttings, may be disposed of in the remaining uncapped areas colored in gray identified as "Total Remaining RCRA Cap Area", and the areas labeled areas A and B identified in the September 4, 2003 addendum plansheet Figure 1A.

2. Republic shall submit to the Department within 60 days of this approval the following:

   a. a schedule for placement of the RCRA final cover in the area labeled Area 1 in the September 4, 2003 addendum figure 1A. RCRA final cover shall be placed in this area by the end of the 2005 construction season.

   b. updated proof of financial assurance for the Northwest expansion to cover the additional cost to close the remaining 6.5 acres identified in the August 26, 2003 addendum. The 6.5 acres shall be added to the total acreage of approximately 36.40 acres to close phase 5 of the Northwest Expansion and adjusted to the Department's 2004 inflationary factor.

3. Republic Services shall submit payment of the required $600 plan review fee for the plan modification request dated April 7, 2003, submitted by Republic Services, Inc. requesting use of 40 mil LLDPE geomembrane instead of the approved 40 mil VLDPE within 30 days from the date of this approval.

The Department retains the jurisdiction to require the submittal of additional information or to modify this approval at any time, if in the Department's opinion, conditions warrant further modifications. Unless

specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be Filed.

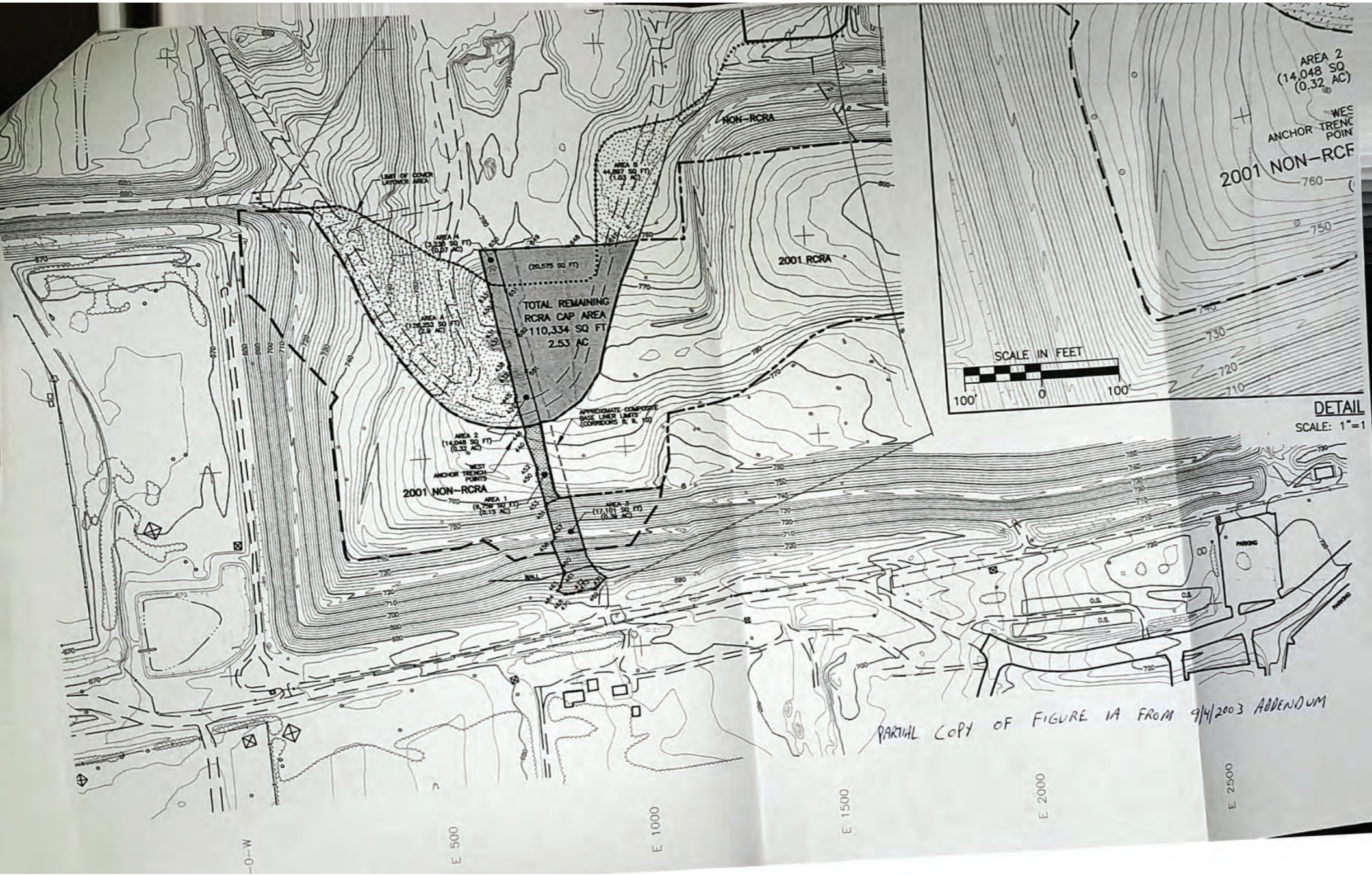
For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent. This notice is provided pursuant to section 227.48(2), Stats.

Dated July 2, 2004

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Frances M . Koonce, Supervisor
Waste Management Program
Southeast Region

Joe Lourigan, Hydrogeologist
Waste Management Program, SER-Sturtevant



PARTIAL COPY OF FIGURE 1A FROM 9/4/2003 ADDENDUM

→ SER Casefile

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

Sturtevant Service Center
9531 Rayne Road Suite IV
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September 8, 2004

FID# 252076990
SW/APPR

FIST SUB # 56676
DEC # 12153

Mr. Michael Ettner, General Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

RE: Construction Documentation Determination for 2001 Old Site Final Cover Closure
Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572

Dear Mr. Ettner:

The Department has completed our review of the Republic Services, Inc. (Republic) January 28, 2002, construction documentation report for the 2001 Old Site final closure for the Kestrel Hawk Recycling and Disposal Facility (RDF). The Department has found that the 2001 final cover closure of the Old Site has been constructed in substantial compliance with your plan of operation approvals dated December 19, 1984, and August 30, 1996, and ch. NR 516, Wis. Adm. Code, with the exception of the RCRA final cover extension for the west edge of corridors 8, 9 and 10.

The Kestrel Hawk landfill 2001 Old Site final cover construction was divided into two separate areas, Phase III of the Resource Conservation and Recovery Act (RCRA) area and the non-RCRA area. The final cover of the Phase III/RCRA area was constructed in the following sequence: intermediate cover regrading, compacted clay cover construction, 40-mil geomembrane installation, sand drainage layer and drainage pipe placement, geotextile separation layer installation, rooting zone placement, topsoil placement and site restoration. The final cover of the non-RCRA area was constructed in the following sequence: intermediate cover regrading, compacted clay cover construction, rooting zone and topsoil placement, and site restoration. Final cover was constructed on approximately 11 acres of the RCRA area and 10-acres of the non-RCRA area. Approximately 6.5 acres of final cover for the Old Site remains to be constructed. During the construction surface water drainage features were also built.

The report entitled, "Construction Documentation Report, Old Site 2001 Final Cover, Kestrel Hawk Landfill, Racine, Wisconsin" was prepared by STS Consultants, Ltd. (STS), on behalf of Republic, and received by the Department on February 4, 2002. In response to a June 30, 2004 incompleteness letter, Republic submitted an incompleteness response dated and received by the Department on August 8, 2004.

In a July 2, 2004, plan modification approval, the Department addressed the western edge of corridors 8, 9 and 10, where final cover has yet to be installed, which is approximately 0.15 acres. Condition 2.a. of the July 2, 2004, plan modification approval, requires Republic to submit a schedule for placement of final cover in this area and place final cover in this area before the end of the 2005 construction season. The Department has received Republic's August 31, 2004, response to the July 2, 2004 plan modification, but has not completed review of the document.

With this letter and the attached approval, the Department approves the construction of the 2001 Old Site final cover construction documentation report, with the exception of the RCRA final cover extension for the west edge of corridors 8, 9 and 10.

If you have any questions about this approval, please call Mike Ellenbecker at (262) 884-2342, Joe Lourigan at (262) 884- 2347, or Pat Brady at (414) 263-8594.

Sincerely,

Frances M. Koonce

Frances M. Koonce
Waste Management Team Leader
Southeast Region, WDNR

Cc: SER Casefile

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL
FOR THE 2001 OLD SITE FINAL COVER CONSTRUCTION DOCUMENTATION REPORT
AT THE KESTREL HAWK RDF, LICENSE # 0572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The Department issued a plan of operation approval for Land Reclamation, LTD on December 19, 1984, with subsequent modifications.

3. The Department issued a plan of operation approval for Land Reclamation Company on August 30, 1996, with subsequent modifications.

4. Mark Stohl inspected the Old Site final cover construction on May 29, September 28, October 1, October 2, and October 9, 2001.

5. On February 4, 2002, Republic hand delivered a report, prepared for them by STS Consultants, Ltd., entitled, "Construction Documentation Report, 2001 Old Site Final Cover", and dated January 28, 2002. The report included 16 plan sheet drawings.

6. On February 19, 2002, an acknowledgement letter and invoice were sent to Republic. The invoice was for $2,000.00, which includes a $1,000.00 construction documentation report review fee and at 2 construction documentation inspections at $500.00 each. On April 1, 2002, the Department received a $2,000.00 payment from Republic.

7. During a July 28, 2004, meeting at Kestrel Hawk, representatives of Republic and Department personnel met to discuss the construction documentation review of the Old Site final cover closure. An e-mail was sent out by the Department on July 29, 2004, regarding the issues discussed at this meeting.

8. Additional information considered in this review are:

   a. RCRA Phase II construction documentation reports and approvals.
   b. Republic's July 31, 2004, response to a July 1, 2004, incompleteness letter from the Department, which was received by the Department on August 8, 2004. The response included a plan sheet drawing.
   c. The plan modification report for corridors 8, 9 and 10, and the approval dated March 3, 1995.
   d. The December 3, 2002, approval for the Kestrel Hawk RDF entitled, "Construction Documentation Approval Phase 3, and Clay Borrow Source Plan Modification Approval".

e. A December 20, 2001, report entitled, "Gas Collection and Control System Improvements" submitted to the Department by EMCON/OWT Solid Waste Services on behalf of Republic.
f. A July 1, 2004, final cover design approval for the Old Site, and also addressing 1994 final grades and corridor 11 overfill.
g. A July 2, 2004, approval for he use of 40-mil LLDPE geomembrane in place of VFPE, and also addressing a closure schedule for the extension of the cap to the western edge of corridors 8, 9 and 10, and revisions to the closure cost.
h. A July 11, 2001, field change regarding the placement and function of the 4-inch diameter perforated pipe that drains the RCRA cover sand layer.

9. CORR 8, 9 and 10 RCRA cover extension was not constructed according to the approved plans dated March 31, 1995.

10. A July 2, 2004, plan modification approval requires Republic to place final cover in corridors 8, 9 and 10.

11. The conditions set forth below are needed to assure that the handling and disposal of solid waste at the Kestrel Hawk RDF is conducted in compliance with chapters NR 500 to 538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.31(3), Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation for the 2001 Old Site final cover closure for the Kestrel Hawk RDF, with the exception of CORR 8, 9 and 10 RCRA extension, subject to compliance with the provisions of chapters NR 500-538, Wis. Adm. Code.

The Department retains the jurisdiction to either require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications.

NOTIFICATION OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin Statutes and Administrative Rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to ss. 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

Dated: September 8, 2004

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Frances Koonce
Frances M. Koonce
Waste Management Team Leader
Southeast Region, WDNR

Mark C. Stohl
Mark Stohl
Air Management Engineer
Southeast Region, WDNR

Patrick J. Brady
Waste Management Engineer
Southeast Region, WDNR

WDNR CORRESPONDENCE

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

Sturtevant Service Center
9531 Rayne Road Suite IV
Sturtevant, Wisconsin 53177
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May 25, 2010

FID# 52076990
SW/APPR

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

JUN 2010

RE: Construction Documentation Determination for the Phase 1 and 2 Partial Closure
Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572

Dear Mr. Umer:

The Department has reviewed and approved the construction documentation report and drawings for the Phase 1 & 2 partial closure at the Republic Services, Inc. (Republic) Kestrel Hawk Recycling and Disposal Facility (RDF) landfill. The Department finds that this work has been constructed in substantial compliance with the Kestrel Hawk plan of operation approval issued on August 30, 1996, and ch. NR 516, Wis. Adm. Code. With this letter and the attached approval, the Department approves the construction of the Phase 1 & 2 partial closure construction documentation report. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The report entitled, "Construction Documentation Report for the Phase 1 and 2 Partial Closure, Kestrel Hawk Landfill, Racine, Wisconsin" was prepared by CQM, Inc., on behalf of Republic, and received by the Department on October 13, 2005.

The report documents the construction of partial closure of Phases 1 and 2 on the north and south side of the landfill, which began in July of 2004 and continued through September of 2004. The area of the Phase 1 and 2 partial closure is approximately 4.8 acres. Construction of the Phase 1 and 2 partial closure included the following activities:

- Preparation of the grading layer;
- Construction of 2-foot thick soil barrier layer;
- Connection to previous placed closure area;
- Placement of geosynthetic clay liner GCL, which is Cetco Bentomat ST;
- Installation of geomembrane, which is GSE textured 40-mil linear low density polyethylene LLDPE;
- Preparation around gas extraction wells and other penetrations;
- Placement of geocomposite drainage layer, which is a FabriNet geonet heat bonded between two 6-oz./sy. polypropylene layers of geotextile;
- Placement of rooting zone soil;
- Construction of surface water diversion berm, ditches, downslope flume and energy dissipater;
- Installation of toe and cove slope drainage piping system; and
- Placement of topsoil, seed, fertilizer and mulch.

History

The area of the Phase 1 & 2 partial closure consists of two separate noncontiguous areas on the north and south slopes. The area on the south slope is adjacent to corridor 7 and 11 of the Old Site at Kestrel Hawk. Refuse was discovered to having been placed in this common berm area between the Northeast Expansion and the Old Site. Because of concerns about how the waste in the berm area may impact the Northeast landfill, particularly in regard to how and where the liner and the cover are connected, the Department denied approval of Phase 1 & 2 partial closure construction documentation report on March 10, 2006.

The Kestrel Hawk feasibility report and the plan of operation did show that waste is not to be placed in the area between Phase I of the Northwest Expansion landfill and Corridor 7 of the Old Site landfill. However, these reports did not contain discussion, details or drawings for how the area located between Phase I and Corridor 7 was to be constructed. The Department requested Republic to either propose a plan to remove the waste located in the area between Phase I and Corridor 7, or submit a feasibility report plan modification request to leave the waste in place.

Republic submitted a proposed a plan to remove waste found to be buried in the area located between Phase I of the Northwest Expansion landfill and Corridor 7 of the Old Site landfill, and perform final cover construction. Because of the originally approved geometry, including the approved base grades and final grades in the plan of operation drawings, final cover to liner tie-in and connection is not possible in this location. As a result, clean soil was proposed to be used as fill material in the area to achieve the proper final grades. On February 22, 2007, the Department issued a plan approval for waste removal and revised cover construction in the area between Phase 1 and Corridor 7.

On December 30, 2010, the Department issued a construction documentation approval for waste removal and cover construction between Phase 1 of the Northwest Expansion and Corridor 7 of the Old Site landfill.

If you have any questions about this approval, please call Mike Ellenbecker at (262) 884-2342, Joe Lourigan at (262) 884- 2347, or Pat Brady at (414) 263-8594.

Sincerely,

Franklin C. Schultz
Waste and Materials Supervisor
Southeast Region, WDNR

c: SER Casefile

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL OF THE
PHASE 1 AND 2 PARTIAL CLOSURE
REPUBLIC SERVICES, INC. KESTREL HAWK RDF
LICENSE No. 0572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. (Republic) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The Department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. The Department issued a plan of operation approval for Land Reclamation Company on August 30, 1996, with subsequent modifications.

4. The Department issued a plan of operation modification approval for Republic on May 1, 2002, regarding final cover.

5. On October 13, 2005, CQM, Inc., on behalf of Republic, submitted a construction documentation report for Phase 1 and 2 partial closure as required by ch. NR 516, Wis. Adm. Code. On December 9, 2005, the Department received the construction documentation report review fee of $1,100 and a construction inspection fee of $1,100 ($550 x 2) for a total of $2,200.

6. On March 10, 2006, the Department informed Republic that approval of the October 13, 2005, construction documentation report was denied.

7. On December 30, 2008, the Department approved the construction documentation determination of the waste removal and cover construction between Phase 1 of the Northwest Expansion landfill and Corridor 7 of the Old Site landfill. With this approval, the Department was now able to begin again review of the construction documentation report for Phase 1 and 2 partial closure.

8. The information submitted as part of the construction documentation includes the following:

   a. A construction documentation report for the Phase 1 & 2 partial closure prepared by CQM, Inc., on behalf of Republic, dated October 5, 2005, accompanied by 11 plan sheet drawings, and received by the Department on October 13, 2005; and
   b. A construction documentation report for the Phase 1 and Corridor 7 waste removal and cover construction, dated January 16, 2008, including additional information submitted on August 27, 2008.

9. Additional information considered in this review are:

   a. The Department's December 19, 1984, and August 30, 1996, plan of operation approvals;
   b. The May 1996, plan of operation for the Northwest Expansion at Land Reclamation Co.;
   c. The Department's May 1, 2002, plan of operation modification approval regarding final cover;
   d. A July 6, 2004, preconstruction documentation report for the Phase 1 & 2 partial closure;
   e. A July 3, 2006, waste removal and cover construction plan for the area located between Phase 1 and Corridor 7, including additional information dated January 25, 2007; and
   f. Department files for the Kestrel Hawk landfill license #0572.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the Department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation report for the Phase 1 and 2 partial closure for the Kestrel Hawk RDF, subject to compliance with the provisions of chapters NR 500-538, Wis. Adm. Code.

The Department retains the jurisdiction to either require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications.

NOTIFICATION OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated: May 26, 2010

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Franklin C. Schultz
Waste and Materials Supervisor
Southeast Region, WDNR

Patrick J. Brady
Waste Management Engineer
Southeast Region, WDNR

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

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JUN 2 2010

May 26, 2010

FID# 252076990
SW/APPR

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

RE: Construction Documentation Determination for 2009 Composite Cover
Kestrel Hawk Recycling and Disposal Facility, License # 0572

Dear Mr. Umer:

The Department has reviewed and approved the construction documentation report including drawings for the 2009 composite cover at the Republic Services, Inc. (Republic) Kestrel Hawk Recycling and Disposal Facility (RDF) landfill, dated January 22, 2010. The Department finds that the 2009 composite cover construction has been constructed in substantial compliance with the Kestrel Hawk plan of operation approval issued on August 30, 1996, subsequent plan modifications, and ch. NR 516, Wis. Adm. Code. With this letter and the attached approval, the Department approves the construction of the 2009 composite cover construction documentation report Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The report documents the 2009 cover construction over the top of the landfill in Phases 1 and 2, which began in August of 2009 and continued through November of 2009. The area of the 2009 cover construction is approximately 4.5 acres. The 2008 cover construction included the following activities:

- Preparation of the grading layer, and construction of 2-foot thick soil barrier layer;
- Connection to previous placed closure area;
- Placement of geosynthetic clay liner GCL, which is Cetco Bentomat;
- Installation of geomembrane, which is textured 40-mil linear low density polyethylene LLDPE;
- Preparation around gas extraction wells and other penetrations;
- Placement of geocomposite drainage layer, which is SKAPS Industries Transnet 220-2-6, a geonet heat bonded between two 6-oz./sy. polypropylene layers of geotextile;
- Construction of surface water diversion berm, ditches, downslope flume and energy dissipater; and
- Placement of rooting zone soil, topsoil, seed, fertilizer and mulch.

If you have any questions about this approval, please call, Joe Lourigan at (262) 884-2347, Mike Ellenbecker at (262)884-2342 or Pat Brady at (414) 263-8594.

Sincerely,

Franklin C. Schultz
Waste and Materials Management Supervisor
Southeast Region, WDNR

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL FOR THE 2009 COMPOSITE COVER CONSTRUCTION AT THE KESTREL HAWK RDF, LICENSE No. 0572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin, known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The Department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. The Department issued a plan of operation approval for Land Reclamation Company on August 30, 1996, with subsequent modifications.

4. On February 8, 2010, the Department received from Republic a construction documentation report, dated January 22, 2010, for 2009 composite cover construction. The report was prepared by CQM, Inc.

5. An acknowledgement letter and invoice were sent out to the facility on January 27, 2010. The construction documentation report review fee of $1,100.00, plus the fee for one construction inspection of $550.00, for a total of $1,650.00, was received by the Department on January 27, 2010.

6. The information submitted as part of the construction documentation includes the following:

   a. The January 22, 2010, construction documentation report for the 2009 composite cover construction at Kestrel Hawk.

7. Additional information considered in this review are:

   a. The Department's December 19, 1984, and August 30, 1996, plan of operation approvals,
   b. The May 1996, plan of operation for the Northwest Expansion at Land Reclamation Co.;
   c. The Department's May 1, 2002, plan of operation modification approval regarding final cover;
   d. The Department's December 28, 2005, plan modification approval; and
   e. The Department files for the Kestrel Hawk Landfill #572.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the Department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation report for the 2009 composite cover construction at the Kestrel Hawk RDF, license #0572, subject to compliance with the provisions of chapters NR 500-538, Wis. Adm. Code.

The Department retains the right to either require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications.

NOTIFICATION OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated: May 26, 2010

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Franklin C. Schultz, Supervisor
Waste and Materials Management Program
Southeast Region

Patrick J. Brady
Waste Management Engineer
Southeast Region

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

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May 24, 2010

FID# 52076990
SW/APPR

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

MAY 27 2010

RE: Construction Documentation Determination for the
Phase 2 and 3 Partial Closure and RCRA Cover Extension
Kestrel Hawk Recycling and Disposal Facility (RDF), License # 0572

Dear Mr. Otzelberger:

The Department has reviewed and approved the construction documentation report and drawings for the Phase 2 & 3 partial closure and RCRA cover extension at the Republic Services, Inc. (Republic) Kestrel Hawk Recycling and Disposal Facility (RDF) landfill. The Department finds that this work has been constructed in substantial compliance with the Kestrel Hawk plan of operation approval issued on August 30, 1996, and ch. NR 516, Wis. Adm. Code. With this letter and the attached approval, the Department approves the construction of the Phase 2 & 3 partial closure and RCRA cover extension construction documentation report. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The report documents the construction of partial closure of Phases 2 and 3 on the north side of the landfill, which began in early July of 2005 and continued through August of 2005. The area of the Phase 2 and 3 partial closure is approximately 3.2 acres. Construction of the Phase 2 and 3 partial closure included the following activities:

- Preparation of the grading layer
- Construction of 2-foot thick soil barrier layer;
- Connection to previous placed closure area;
- Placement of geosynthetic clay liner GCL, which is Bentofix Thermal Lock NSL GCL;
- Installation of geomembrane, which is textured 40-mil liner low density polyethylene LLDPE;
- Preparation around gas extraction wells and other penetrations;
- Placement of geocomposite drainage layer, which is a 200 mil thick HDPE geonet heat bonded between two 6-oz./sy. layers of geotextile;
- Placement of rooting zone soil;
- Construction of surface water diversion berm and ditches
- Installation of toe and cover slope drainage piping system; and
- Placement of topsoil, seed, fertilizer and mulch.

The RCRA cover extension is 45 feet by 200 feet area located in Corridors 8, 9 and 10 of the south final cover of the facility. The extension covers components of the of the site's approved RCRA cover that had not received a RCRA final cover. The RCRA cover extension required: the addition of 1 foot of select clay fill, for a total of 3 feet of select clay fill; installation of a LLDPE geomembrane; and the installation of a perimeter conveyance system to drain collected infiltration from the final cover.

The report entitled, "Construction Documentation Report for the Phase 2 and 3 Partial Closure and RCRA Cover Extension, Kestrel Hawk Landfill, Racine, Wisconsin" was prepared by Earth Tech, on behalf of Republic, and received by the Department on September 2, 2008.

If you have any questions about this approval, please call Mike Ellenbecker at (262) 884-2342, Joe Lourigan at (262) 884- 2347, or Pat Brady at (414) 263-8594.

Sincerely,

Franklin C. Schultz
Waste and Materials Supervisor
Southeast Region, WDNR

c: SER Casefile

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL OF THE
PHASE 2 AND 3 PARTIAL CLOSURE AND RCRA COVER EXTENSION
REPUBLIC SERVICES, INC. KESTREL HAWK RDF
LICENSE No. 0572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. (Republic) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The Department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. The Department issued a plan of operation approval for Land Reclamation Company on August 30, 1996, with subsequent modifications.

4. The Department issued a plan of operation modification approval for Republic on May 1, 2002, regarding final cover.

5. On September 2, 2008, the Department received a construction documentation report for Phase 2 and 3 partial closure RCRA cover extension as required by ch. NR 516, Wis. Adm. Code. The report was prepared by Earth Tech for Republic and dated August 27, 2008.

6. On January 14, 2009, the Department received the construction documentation report review fee of $1,100 and a construction inspection fee of $1,100 ($550 x 2) for a total of $2,200.

7. The information submitted as part of the construction documentation includes the following:

   a. A construction documentation report for the Phase 2 & 3 partial closure and RCRA cover extension was prepared by Earth Tech, on behalf of Republic, dated August 27, 2008, accompanied by 11 plan sheet drawings, and received by the Department on September 2, 2008.

8. Additional information considered in this review are:

   a. The Department's December 19, 1984, and August 30, 1996, plan of operation approvals;
   b. The May 1996, plan of operation for the Northwest Expansion at Land Reclamation Co.;
   c. The Department's May 1, 2002, plan of operation modification approval regarding final cover;
   d. The Department's June 30, 2005, plan modification regarding use of soil as soil barrier layer; and
   e. Department files for the Kestrel Hawk landfill license #0572.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30, Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the Department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The Department hereby approves the construction documentation report for the Phase 2 and 3 partial closure and RCRA cover extension for the Kestrel Hawk RDF, subject to compliance with the provisions of chapters NR 500-538, Wis. Adm. Code.

The Department retains the jurisdiction to either require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications.

NOTIFICATION OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the Department, you should know that Wisconsin statutes, administrative codes and case law establish time periods and requirements for reviewing Department decisions.

To seek judicial review of the Department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. Such a petition shall be filed with the appropriate circuit court and shall be served on the Department. The petition shall name the Department of Natural Resources as the respondent.

Dated: May 24, 2010

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Franklin C. Schultz
Waste and Materials Supervisor
Southeast Region, WDNR

Patrick J. Brady
Waste Management Engineer
Southeast Region, WDNR

WDNR CORRESPONDENCE

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee WI 53212-3128

Scott Walker, Governor
Cathy Stepp, Secretary
John Hammen, Acting Regional Director
Telephone 414-263-8500
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August 17, 2011

FID# 52076990
SW/APPR

Mr. Khalid Umer, P.E., Area Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1989 Oakes Road
Racine, WI 53406

RECEIVED 8-22-11

Subject: Plan of Operation Approval Modification, Kestrel Hawk Landfill (#572)

Dear Mr. Umer:

The requested modification to your plan of operation to modify the final cover system at the Kestrel Hawk Landfill has been reviewed and approved. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The plan modification includes a request to modify the final cover systems over the Old Site Area (portions of Corridors 1 to 6), Corridors 8 to 11, and former City of Racine site. Currently, there are three different approved final cover designs that come together at the intersection of these parts of the landfill. The City of Racine site has a NR 180 cap which consists of a 2-foot clay layer and a 6-inch topsoil layer. The Old Site Area has a RCRA cover design with consists of 6-inch grading layer, 3-foot clay layer, a 40-mil geomembrane, a 1-foot thick granular drainage layer, a geotextile separation layer, a 1.5-foot thick rooting zone layer, and a 6-inch topsoil layer. Corridors 8 to 11 have a NR 500 cap which consists of 6-inch grading layer, 2-foot clay layer, a 40-mil geomembrane, a geonet, 2.5-foot rooting zone layer and a 6-inch topsoil layer. The plan modification standardizes the cover system thickness and cover components over the remaining uncovered RCRA (2.07 acres) and non-RCRA (4.43 acres) areas of the older portions of the site.

The proposed RCRA cover would consist of 6-inch grading layer, 2-foot thick compacted clay layer, a geosynthetic clay liner (GCL), a 40-mil LLDPE geomembrane, a geocomposite drainage layer, a 2.5-foot thick rooting zone layer, and a 6-inch thick topsoil layer. The proposed non-RCRA cover would consist of 6-inch grading layer, 2-foot thick compacted clay layer (the clay layer may be replaced with 2-foot barrier layer and a GCL), a 40-mil LLDPE geomembrane, a geocomposite drainage layer, a 2.5-foot thick rooting zone layer, and a 6-inch thick topsoil layer.

The plan modification also includes the installation of a new 12-inch, SDR 17 landfill gas header pipe along the access road on the west side of the former City of Racine Landfill and Corridor 11. The additional header will improve vacuum distribution throughout the landfill by providing a more direct connection from the 16-inch "biogas line" to the northern expansion. It will also improve the ability to balance the well field as landfill gas generation decreases in the southern half of the site and increases in the northern half.

If you have any questions regarding this letter, please contact Ann Bekta at (608)743-4845.

Sincerely,

Franklin C. Schultz
Waste and Materials Management Program Supervisor
Southeast Region

cc: Ann Bekta – JSC
Joe Lourigan - Sturtevant

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PLAN OF OPERATION APPROVAL MODIFICATION
REPUBLIC SERVICES, INC. KESTREL HAWK RDF
LICENSE No. 0572

FINDINGS OF FACT

The Department finds that:

1. Republic Services, Inc. (Republic) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk RDF (formerly known as Land Reclamation Landfill).

2. The Department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. The Department issued a plan of operation approval for Land Reclamation Company on August 30, 1996, with subsequent modifications.

4. On June 13, 2011, CQM, Inc., on behalf of Republic, submitted a plan of operation approval modification request to modify the final cover system over the Old Site Area (portions of Corridors 1 to 6), Corridors 8 to 11, and former City of Racine site. On June 20, 2011, the Department received the correct review fee of $1,650.

5. The information submitted as part of the modification request includes:

    a. A report entitled "Plan of Operation Modification, Kestrel Hawk, RDF, Racine, Wisconsin" and associated drawings dated June 10, 2011 which were received by the Department on June 13, 2011.

    b. Additional information and clarification requested was emailed to the Department on July 12, 2011. The plan sheets were received on July 15, 2011.

    c. A July 12, 2011 Cornerstone letter and plan sheets regarding landfill gas header improvements.

    d. Additional information and clarification requested was emailed to the Department on August 12, 2011.

    e. Additional clarification was emailed to the Department on August 16, 2011.

6. Additional documents considered in connection with the review of the modification include the following:

    a. The Department's July 2, 2004 remaining old site final cover plan modification approval.

b. The Department's May 1, 2002 final cover plan modification approval to use a GCL.

c. The Department's August 30, 1996 plan of operation approval.

d. The Department's September 16, 1991 RCRA final cover plan modification approval.

e. The Department files for the Kestrel Hawk RDF (#572).

7. The special conditions set forth below are needed to assure that the facility is operated in an environmentally sound fashion. If the special conditions are complied with, the proposed modification will not inhibit compliance with the standards set forth in the applicable portions of chs. NR 500-538, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has authority under s. 289.30(6), Stats., to modify a plan of operation approval if the modification would not inhibit compliance with the applicable portions of chs. NR 500-538, Wis. Adm. Code.

2. The Department has authority to approve a plan of operation approval modification with special conditions if the conditions are needed to ensure compliance with chs. NR 500-538, Wis. Adm. Code.

3. The conditions of this approval are needed to ensure compliance with chs. NR 500-538, Wis. Adm. Code.

4. In accordance with the foregoing, the Department has the authority under s. 289.30, Stats., to issue the following conditional plan of operation approval modification.

PLAN OF OPERATION APPROVAL MODIFICATION

The Department hereby approves the proposed changes to the final cover system for the Kestrel Hawk RDF, subject to compliance with the provisions of chapters NR 500-538, Wis. Adm. Code and the following conditions:

1. The geosynthetic clay liner (GCL) and the soil barrier layer shall designed and constructed in accordance with NR 504.07(4)(a), Wis. Adm. Code, and tested and documented in accordance with ch. NR 516, Wis. Adm. Code.

   This condition supersedes conditions 8, 9, 10, 11, 12 and 14 of the Department's May 1, 2002 approval.

2. The gas header construction shall be documented in accordance with NR 516.06, Wis. Adm. Code and shall include the field verified location and depth of the existing slurry wall where the gas header crosses it.

The Department retains the jurisdiction to either require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications.

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
Southeast Region Headquarters
2300 N. Dr. Martin Luther King Jr. Drive
Milwaukee, WI 53212-3128

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Preston D. Cole, Secretary
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February 3, 2020

Mr. Khalid Umer, P.E.
Republic Services, Inc.
1989 Oakes Road
Racine, WI 53406

FILE REF: FID# 252076990
Racine County
SW/APP

SUBJECT: Construction Documentation Approval for the 2018-2019 Composite Cover and Landfill Gas System, Kestrel Hawk Landfill, License No. 0572

Dear Mr. Umer:

The Department of Natural Resources (department) has reviewed and approves the construction documentation submitted for the 2018-2019 Final Cover and Gas System Improvements. Please include the attached approval in the written operating record for the landfill as specified in s. NR 506.17, Wis. Adm. Code.

The 2018-2019 final cover report documents construction of approximately 8.3 acres of final cover, construction of surface water drainage features and construction of an access road over the final cover. The final cover consists of (from bottom to top) a two-foot soil barrier layer, a geosynthetic clay liner, a 40-mil LLDPE textured geomembrane, a geocomposite drainage layer, a 30-inch rooting zone layer and a six-inch topsoil layer. The landfill gas system improvements include: installation of two replacement gas wells and abandonment of the existing gas wells; the installation of new and replacement gas header and lateral piping and gas valves; installation of replacement air piping; the installation of a horizontal collector below the new final cover area; installation of remote well heads for several existing wells; and other minor improvements to the gas system. The two replacement gas wells are designated GW-408R (DNR Pt. ID #963) and GW-413R (DNR Pt. ID #964).

If you have any questions regarding this letter, please contact Susan Fisher at 262-574-2148 or susan.fisher@wisconsin.gov.

Sincerely,

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

cc: Mike Williams – mwilliams2@republicservicses.com
Pete Rammer – rammer@cqminc.com
Gerald DeMers – DNR SER

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL FOR
THE 2018-2019 FINAL COVER & LANDFILL GAS SYSTEM AT THE
KESTREL HAWK LANDFILL, LICENSE # 0572

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Republic Services of Wisconsin, LP (Republic) owns and operates a municipal solid waste disposal facility and a hazardous waste facility, known as the Kestrel Hawk Landfill, located in the N 1/2 of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin.

2. The department issued a plan of operation approval for Land Reclamation, Ltd. on December 19, 1984, with subsequent modifications.

3. The department issued a conditional plan of operation for the expanded Kestrel Hawk Landfill, referred to as the Kestrel Hawk Northwest Expansion Landfill on August 30, 1996, with subsequent modifications.

4. On October 22, 2019, CQM, Inc. (CQM), on behalf of Republic, submitted construction documentation required by NR 516, Wis. Adm. Code. The correct review fee of $1,100 and construction inspection fee of $2,750 were received by the department on November 4, 2019.

5. The information submitted as construction documentation includes the following:

    a. A report entitled "Construction Documentation Report for the 2018-2019 Composite Cover and LFG Systems" and accompanying 18 plan sheets dated October 22, 2019 and received by the department on October 25, 2019.

    b. A letter addendum, attachments and one revised plan sheet #6, submitted by Tetra Tech (formerly CQM) and dated January 29, 2020. The submittal was in response to a department email request dated January 13, 2020 for additional information regarding the documentation report.

6. Additional documents considered in connection with the review of the construction documentation include the following:

    a. An RMT Inc. report entitled “Land Reclamation Company Northwest Expansion Plan of Operation” and accompanying plan sheets. The report was submitted by RMT Inc., on May 31, 1996.

    b. The preconstruction report for the final cover submitted by CQM and dated September 25, 2018.

    c. The department’s August 17, 2011 plan modification approval for final cover.

d. The department's January 26, 2007 plan modification approval that included the conditional reuse of treated soils as soil barrier layer in the final cover and the department's September 1, 1995 processing plan approval that included conditional reuse of treated soil for the rooting zone soil layer in the final cover.

e. The department's June 29, 2004 plan modification approval for revisions to the gas extraction system.

f. The department's May 1, 2002 plan modification approval for use of a geosynthetic clay liner and a geocomposite drainage layer in the final cover.

g. The department's inspection reports for inspections of 2018-2019 cap conducted on: September 28, 2018, October 30, 2018, December 6, 2018, June 6, 2019, and July 9, 2019.

CONCLUSIONS OF LAW

1. The department has authority under s. 289.31(3), Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The department hereby approves the proposed construction documentation for 2018-2019 final cover and the landfill gas system at the Kestrel Hawk landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the department to file your petition with the appropriate circuit court and serve the petition on the department.

The petition shall name the Department of Natural Resources as the respondent.

Dated: February 3, 2020

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

Susan M. Fisher, P.E.
Waste & Materials Management Program Engineer
Southeast Region

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
141 NW Barstow St. Room 180
Waukesha, WI 53188

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

WISCONSIN
DEPT. OF NATURAL RESOURCES

February 16, 2024

FID #252076990
Racine County
SW/Approval

Mr. Khalid Umer, P.E.
Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1969 Oakes Road Racine, WI 53406

Subject: Construction Documentation Approval for Final Cover Construction at the Kestrel Hawk Landfill, License #0572

Dear Mr. Umer:

The Department of Natural Resources (department) is approving the construction documentation report for the 2022-2023 composite cover construction at the Kestrel Hawk Landfill. The report documents the construction of approximately 15 acres of final cover in Phase 4 and Phase 5. The final cover consists of the following elements from top bottom to top.

- 6-inch grading layer
- 24-inch soil barrier layer
- Geocomposite clay liner layer
- 40-mil LLDPE geomembrane layer
- Geocomposite drainage layer
- 30-inch rooting zone layer
- 6-inch topsoil layer
- Erosion matting, seed, and fertilizer

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state and local permits or regulatory requirements. If you have questions regarding this approval, please contact Tony Peterson at (715) 491-8546 or anthony.peterson@wisconsin.gov.

Sincerely,

James C. Delwiche

James C. Delwiche
Waste and Materials Management Program Supervisor
Southeast Region

cc: Craig Brochrup – Weaver Consultants Group (cbrochtrup@wcgrp.com)
Tony Peterson – DNR/WA (anthony.peterson@wisconsin.gov)
David Buser – DNR/WA (david.buser@wisconsin.gov)

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL FOR
2022-2023 COMPOSITE COVER FOR THE
REPUBLIC SERVICES, INC. KESTREL HAWK LANDFILL, LICENSE #0572

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Republic Services, Inc. (Republic Services) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk Landfill (formerly known as Land Reclamation Landfill, LRL).

2. The department initially licensed the LRL on April 20, 1970.

3. The department issued conditional plan of operation approvals for the Kestrel Hawk Landfill on December 19, 1984, and August 30, 1996, for the Kestrel Hawk Park Northwest Expansion Landfill.

4. On December 12, 2023, Weaver Consultants Group, on behalf of Republic Services, submitted construction documentation required by NR 516, Wis. Adm. Code, for composite cover construction. The department received the review fee of $1,100 and inspection fee of $2,200 on December 29, 2023.

5. The information submitted with the construction documentation includes the following:

    a. A report titled "Construction Documentation Report 2022-2023 Composite Cover Kestrel Hawk Landfill", and associated drawings dated and received by the department on December 12, 2023.

6. Additional documents considered in connection with the construction documentation include the following:

    a. The report titled “Preconstruction Report 2022 Composite Cover Kestrel Hawk Landfill” and dated July 15, 2022.

    b. The department’s reports for the construction observation inspections conducted on May 16, 2022, August 15, 2022, September 2, 2022, and October 5, 2022.

    c. The department’s August 30, 1996, plan of operation approval for the Northwest Expansion of the Kestrel Hawk Landfill.

    d. The department’s files pertaining to the Kestrel Hawk Landfill (License #0572).

CONCLUSIONS OF LAW

1. The department has authority under s. 289.31(3), Wis. Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The department hereby approves the construction documentation for 2022-2023 composite cover at the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Wis. Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the department to file your petition with the appropriate circuit court and serve the petition on the department. The petition shall name the Department of Natural Resources as the respondent.

Dated: February 16, 2024

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

James C. Delwiche
Waste & Materials Management Program Supervisor
Southeast Region

Tony Peterson
Waste Management Engineer
Southeast Region

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
141 NW Barstow St. Room 180
Waukesha, WI 53188

Tony Evers, Governor

Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

November 8, 2024

FID #252076990
Racine County
SW/Approval

Mr. Khalid Umer, P.E.
Environmental Manager
Republic Services, Inc., Kestrel Hawk Landfill
1969 Oakes Road Racine, WI 53406

Subject: Construction Documentation Approval for 2023-2024 Composite Cover Construction at the Kestrel Hawk Landfill, License #0572

Dear Mr. Umer:

The Department of Natural Resources (department) is approving the construction documentation report for the 2023-2024 composite cover construction at the Kestrel Hawk Landfill. The report documents the final closure of the Kestrel Hawk Landfill by construction of approximately 24.8 acres of final cover in Phase 4 and Phase 5.

The final cover project area consists of the following elements from bottom to top.

- 6-inch grading layer
- 24-inch compacted clay layer
- 40-mil LLDPE geomembrane layer
- Geocomposite drainage layer
- 30-inch rooting zone layer
- 6-inch topsoil layer
- Erosion matting, seed, and fertilizer

The southeastern corner of the 2024-2024 composite cover constriction area, which is subject to requirements of the Resources Conservation and Recovery Act (RCRA), also includes a geosynthetic clay liner (GCL) layer between the 24-inch compacted clay layer and the 40-mil LLDPE geomembrane layer.

One deviation was noted in the construction documentation report pertaining to the storm water management components of the final cover. The toe drain system has outlet pipes at varying distances along the toe of the slope. The outlet pipes are oriented down slope to convey water to existing stormwater features. In areas where water did not flow to existing stormwater features, a sump was installed to pump water to the existing stormwater features.

Please keep in mind that this approval does not relieve you of obligations to meet all other applicable federal, state and local permits or regulatory requirements. If you have questions regarding this approval, please contact Tony Peterson at (715) 491-8546 or anthony.peterson@wisconsin.gov.

Sincerely,

Natasha Gwidt, P.E.

Natasha Gwidt, P.E.
Field Operations Director and Interim Southeast Region Supervisor
Waste and Materials Management Program

cc: Craig Brochrup – Weaver Consultants Group (cbrochtrup@wcgrp.com)
Tony Peterson – DNR/WA (anthony.peterson@wisconsin.gov)
David Buser – DNR/WA (david.buser@wisconsin.gov)
Doug Coenen – DNR/WA (douglas.coenen@wisconsin.gov)
Kendra Fisher – DNR/WA (Kendra.fisher@wisconsin.gov)
Dustin Sholly – DNR/WA (dustin.sholly@wisconsin.gov)

BEFORE THE
STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTATION APPROVAL FOR
2023-2024 COMPOSITE COVER FOR THE
REPUBLIC SERVICES, INC. KESTREL HAWK LANDFILL, LICENSE #0572

FINDINGS OF FACT

The Department of Natural Resources (department) finds that:

1. Republic Services, Inc. (Republic Services) owns and operates a municipal solid waste and hazardous waste disposal facility in the North ½ of Section 23, T3N, R22E, City of Racine, Racine County, Wisconsin known as the Kestrel Hawk Landfill (formerly known as Land Reclamation Landfill, LRL).

2. The department initially licensed the LRL on April 20, 1970.

3. The department issued conditional plan of operation approvals for the Kestrel Hawk Landfill on December 19, 1984, and August 30, 1996, for the Kestrel Hawk Park Northwest Expansion Landfill.

4. On July 24, 2024, Weaver Consultants Group, on behalf of Republic Services, submitted construction documentation required by NR 516, Wis. Adm. Code, for composite cover construction. The department received the review fee of $1,100 and inspection fee of $3,300 on August 20, 2024.

5. The information submitted with the construction documentation includes the following:

    a. A report titled "Construction Documentation Report 2023-2024 Composite Cover Kestrel Hawk Landfill", and associated drawings dated and received by the department on July 24, 2024.

    b. A report titled “Response to October 7, 2024, Comments, Kestrel Hawk Landfill”, and associated drawings dated and received by the department on October 11, 2024.

1. Additional documents considered in connection with the construction documentation include the following:

    a. The department’s email dated October 7, 2024, deeming the construction documentation report incomplete and requesting additional information.

    b. The report titled “Preconstruction Report 2023 Composite Cover Kestrel Hawk Landfill” and dated June 2023.

    c. The department’s reports for the construction observation inspections conducted on May 16, 2023, July 11, 2023, July 25, 2023, August 31, 2023, November 14, 2023, and June 13, 2024.

    d. The department’s August 30, 1996, plan of operation approval for the Northwest Expansion of the Kestrel Hawk Landfill.

    e. The department’s files pertaining to the Kestrel Hawk Landfill (License #0572).

CONCLUSIONS OF LAW

1. The department has authority under s. 289.31(3), Wis. Stats., and ch. NR 516, Wis. Adm. Code, to require that the owner of a solid waste disposal facility demonstrate that the facility has been constructed in substantial compliance with the conditional plan of operation approval.

2. In accordance with the foregoing, the department has the authority to issue the following construction documentation approval.

CONSTRUCTION DOCUMENTATION APPROVAL

The department hereby approves the construction documentation for 2023-2024 composite cover at the Kestrel Hawk Landfill, subject to compliance with chs. NR 500-538, Wis. Adm. Code.

This approval is based on the information available to the department as of the date of approval. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the department may ask you to provide further information relating to this activity. Likewise, the department accepts proposals to modify approvals, as provided for in state statutes and administrative codes.

NOTICE OF APPEAL RIGHTS

If you believe you have a right to challenge this decision made by the department, you should know that Wisconsin statutes and administrative codes establish time periods and requirements for reviewing department decisions.

To seek judicial review of the department's decision, sections 227.52 and 227.53, Wis. Stats., establish criteria for filing a petition for judicial review. You have 30 days after the decision is mailed or otherwise served by the department to file your petition with the appropriate circuit court and serve the petition on the department. The petition shall name the Department of Natural Resources as the respondent.

Dated: November 8, 2024

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

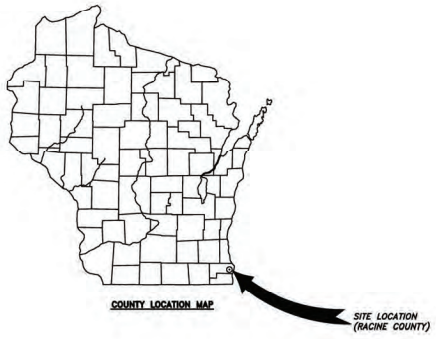
Natasha Gwidt, P.E.
Field Operations Director and Interim Southeast Region Supervisor
Waste and Materials Management Program

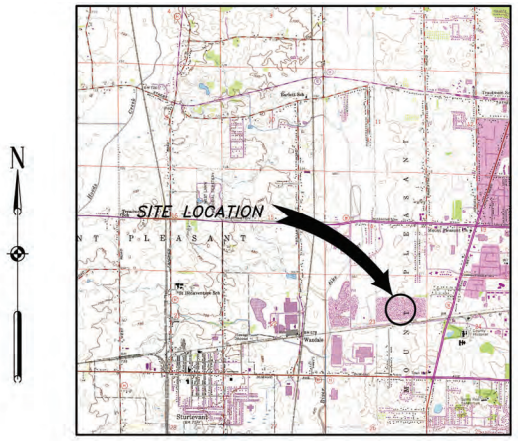
Tony Peterson
Waste Management Engineer
Southeast Region

Appendix B: RCRA Cover Plans

REPUBLIC SERVICES OF WISCONSIN, L.P.

OLD SITE AREA FINAL COVER
Plan Modification
KESTREL HAWK RDF
RACINE, WISCONSIN
JUNE 2011





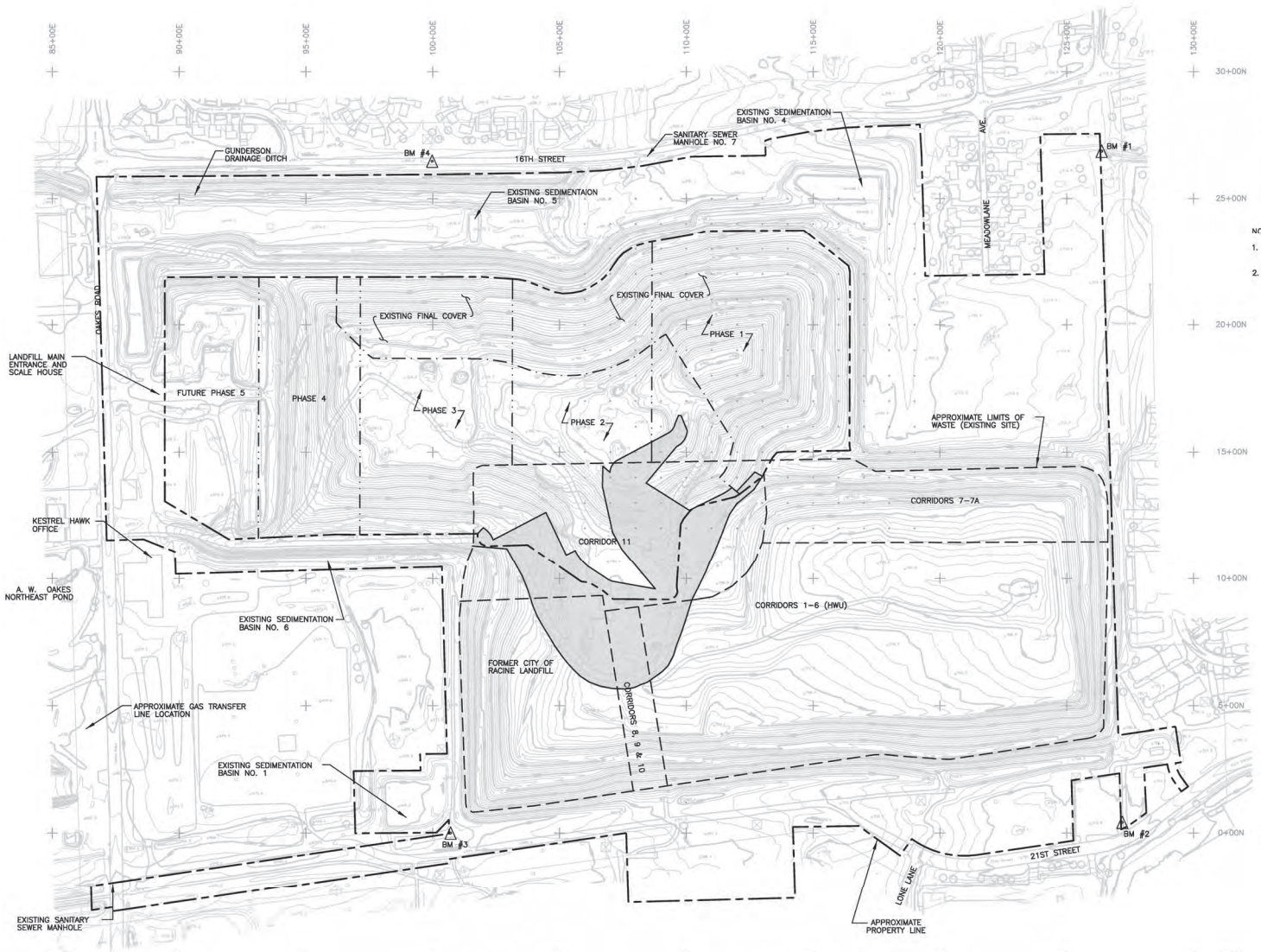
SITE LOCATION MAP – RACINE COUNTY
APPROX. SCALE = N.T.S.

INDEX	
DRAWING NO	DESCRIPTION
1	TITLE SHEET
2	EXISTING CONDITIONS
3	FINAL COVER GRADES (PERMIT VS PLAN MODIFICATIONS)
4	DETAILS
5	DETAILS
6	CROSS SECTIONS
7	CROSS SECTIONS

Drawings Prepared By:

CQM, INC.

Engineering–Surveying–Material Testing



LEGEND

- APPOXIMATE LIMITS OF WASTE NORTHWEST EXPANSION
- 670 — EXISTING CONTOUR
- LIMITS OF WASTE (OLD SITE)
- APPROXIMATE PROPERTY LINE
- APPROXIMATE PHASING BOUNDARIES
- EXISTING CLOSURE BOUNDARIES
- AREA OF PLAN MODIFICATION
- BM #1 — SURVEY BENCHMARK LOCATION

NOTES:

1. BASE MAP IS FROM AIR PHOTO MAPPING BY THE SIDEWELL COMPANY, SAINT CHARLES, ILLINOIS. DATE OF PHOTO: APRIL 12, 2010.
2. SITE GRID IS WISCONSIN STATE PLANE COORDINATE SYSTEM

   0+00 SITE GRID NORTH = 264,196.55 STATE PLANE GRID
   0+00 SITE GRID EAST = 2,563,700.72 STATE PLANE GRID

   ELEVATIONS REFERENCED TO MEAN SEA LEVEL

N

SITE BENCHMARK LOCATION COORDINATES

BENCHMARK DESCRIPTION	CONSTRUCTION GRID NORTH	CONSTRUCTION GRID EAST	ELEVATION (MSL)
BM #1	26+87.50 N	126+37.78 E	N/A
BM #2	0+42.34 N	127+19.15 E	716.82
BM #3	0+00.11 S	100+70.38 E	674.88
BM #4	26+47.93 N	99+97.68 E	683.11

RELEASE	DATE:	BY:
Project Review		
6		
4		
3		
2		
1		

NO.	DATE:	BY:
DESCRIPTION		
REVISIONS		

REPUBLIC SERVICES

CQM, INC.
Engineering-Surveying-Material Testing
2679 Continental Drive
Green Bay, WI 54311

Existing Conditions

Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

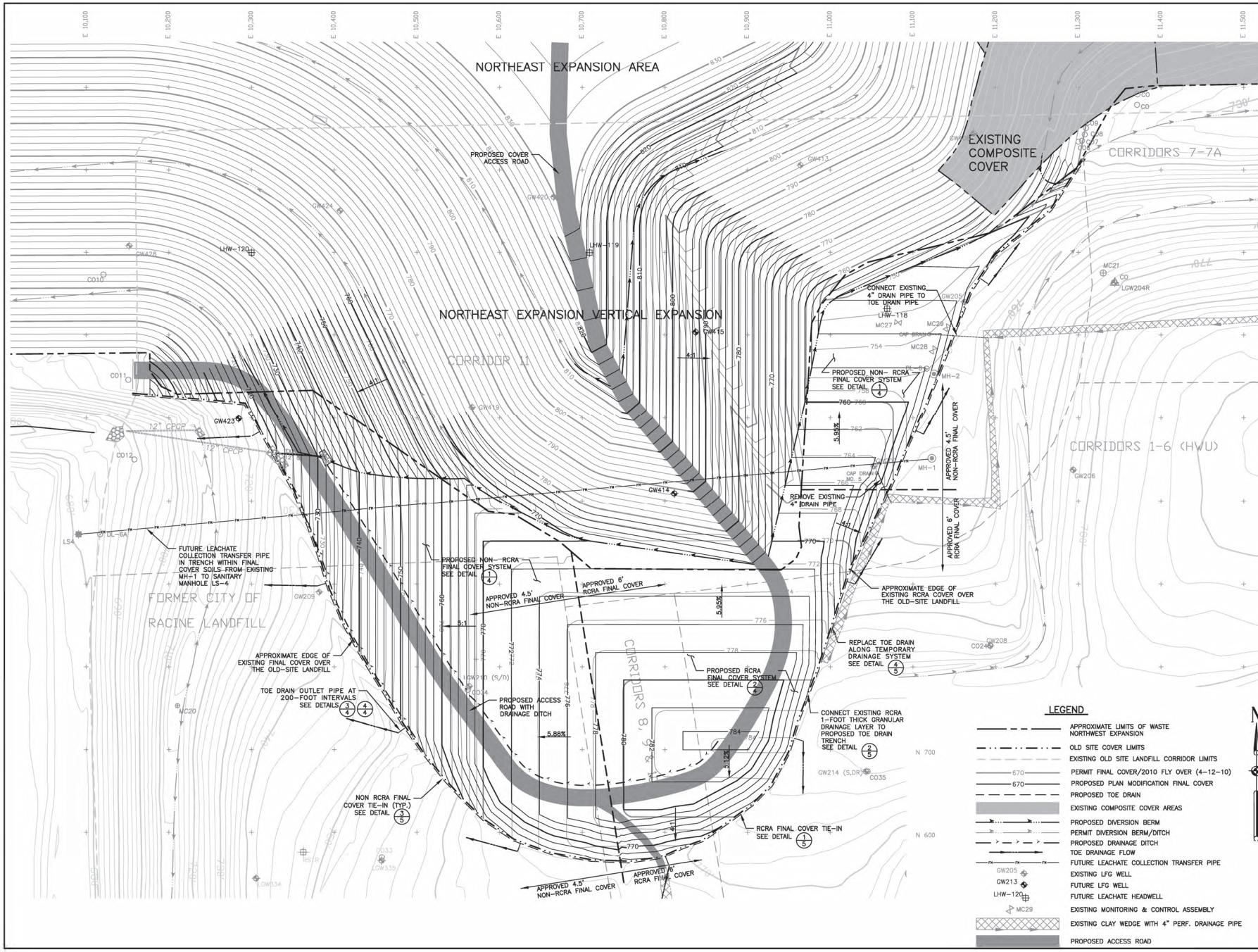
DRAWN BY: NGG

DATE: June 2011

SCALE: 1" = 200'

DRAWING NO.

2



NO.	DATE:	BY:

RELEASE DATE: BY:
Project Review

DESCRIPTION
REVISIONS

REPUBLIC SERVICES

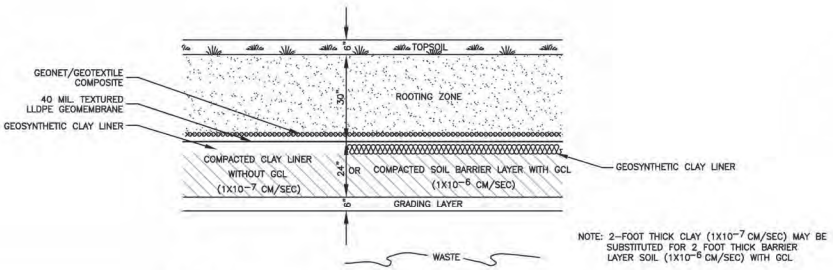
CQM, INC.
Engineering-Surveying-Material Testing
2879 Continental Drive
Green Bay, WI 54311

Final Cover Grades (Permit Vs Plan Modifications)

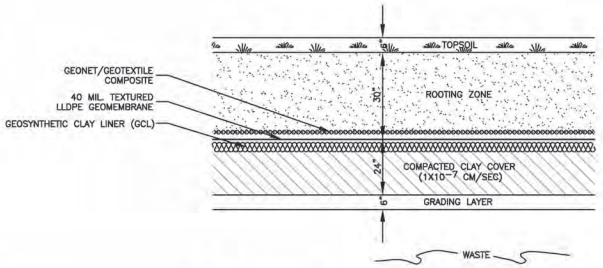
Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

DRAWN BY: NGG
DATE: July 2011
SCALE: 1" = 50'

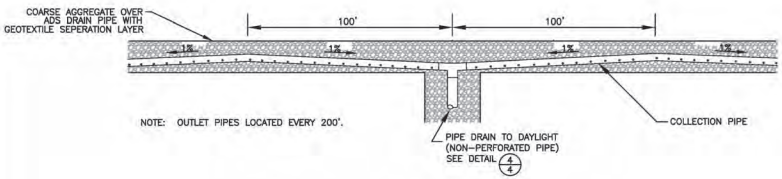
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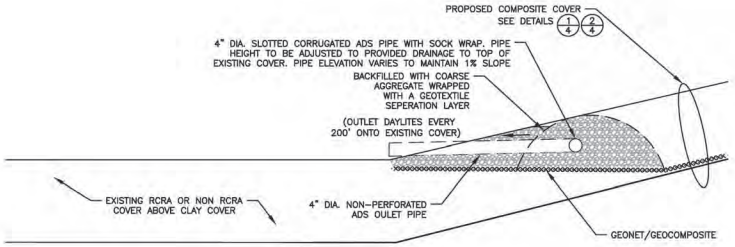
1/4 PROPOSED NON-RCRA FINAL COVER SYSTEM
NOT TO SCALE



2/4 PROPOSED RCRA FINAL COVER SYSTEM
NOT TO SCALE



3/4 COVER DRAIN PIPE LAYOUT DETAIL
NOT TO SCALE



4/4 COVER DRAIN
NOT TO SCALE

NO.	DATE:	BY:
RELEASE	DATE:	BY:
Project Review		

DESCRIPTION

REVISIONS

REPUBLIC SERVICES

CQM, INC.
Engineering-Surveying-Material Testing
2679 Continental Drive
Green Bay, WI 54311

Details

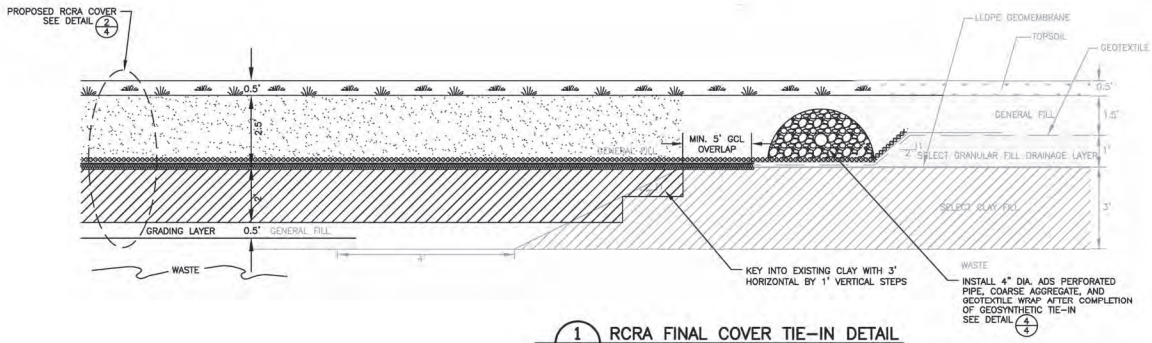
Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

DRAWN BY: NGG

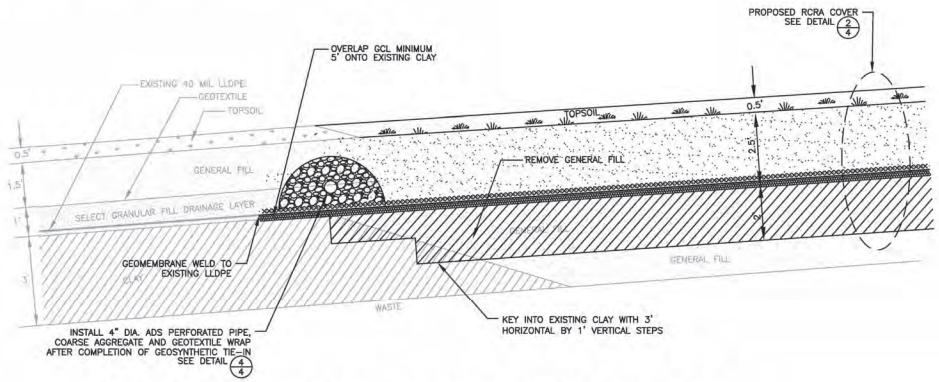
DATE: July 2011

SCALE: As Shown

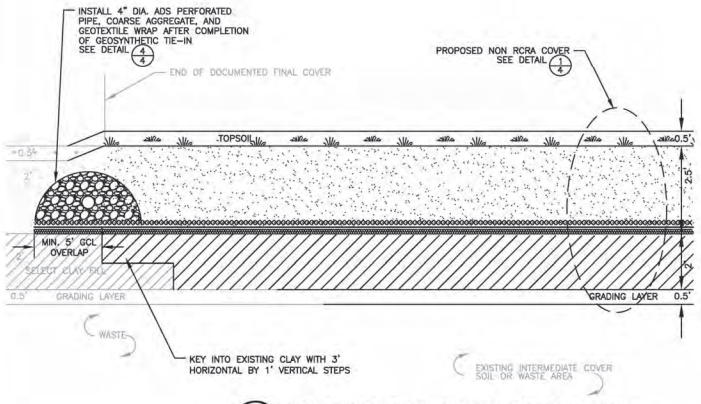
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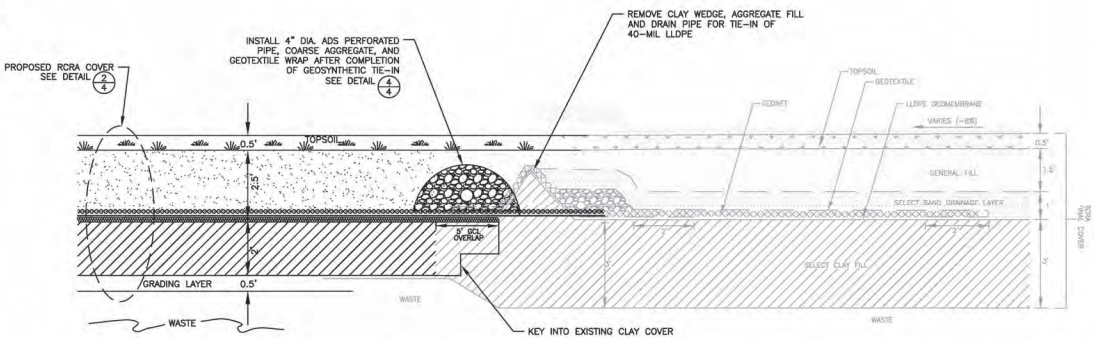
1/5 RCRA FINAL COVER TIE-IN DETAIL
NOT TO SCALE



2/5 RCRA FINAL COVER TIE-IN @ TEMPORARY DRAINAGE SYSTEM DETAIL
NOT TO SCALE



3/5 NON-RCRA FINAL COVER TIE-IN DETAIL
NOT TO SCALE



4/5 RCRA COVER TIE-IN TO EXISTING RCRA COVER WITH PERIMETER DRAINAGE SYSTEM
NOT TO SCALE

RELEASE	DATE:	BY:
Project Review		
6		
4		
3		
2		
1		

NO.	DATE:	BY:
DESCRIPTION		
REVISIONS		

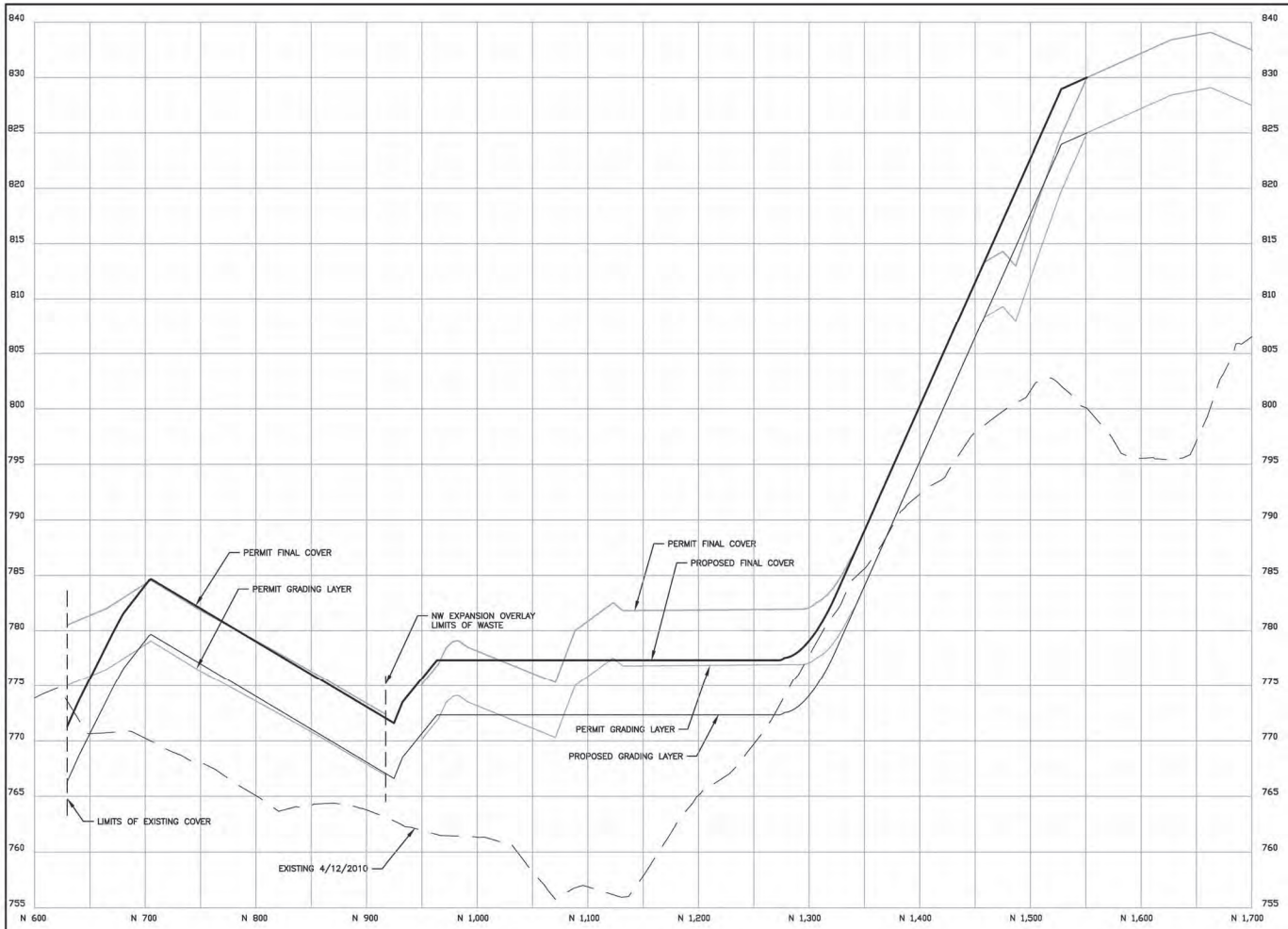
REPUBLIC SERVICES

CQM, INC.
Engineering-Surveying-Material Testing
2679 Continental Drive
Green Bay, WI 54311

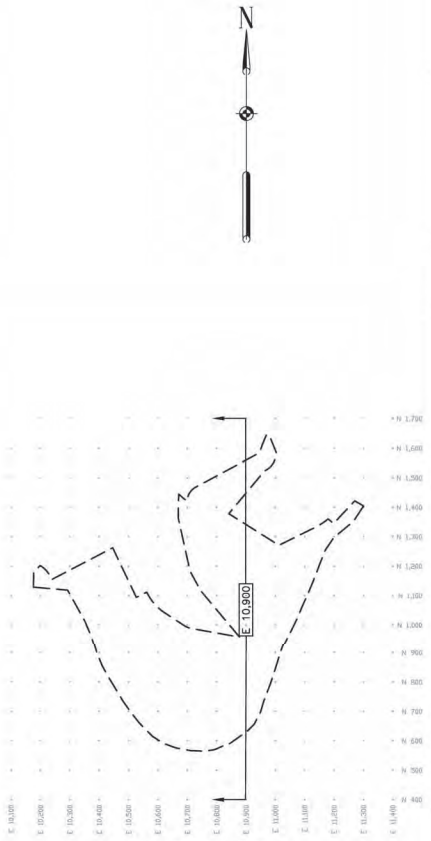
Details

Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

DRAWN BY: NGG
DATE: July 2011
SCALE: As Shown
DRAWING NO.
5



ENGINEERING CROSS SECTION E 10,900



SITE LOCATION MAP

RELEASE	DATE:	BY:
Project Review		
6		
4		
3		
2		
1		

NO.	DATE:	BY:
DESCRIPTION		

REVISIONS

REPUBLIC SERVICES

CQM, INC.
Engineering–Surveying–Material Testing
2679 Continental Drive
Green Bay, WI 54311

Cross Sections

Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

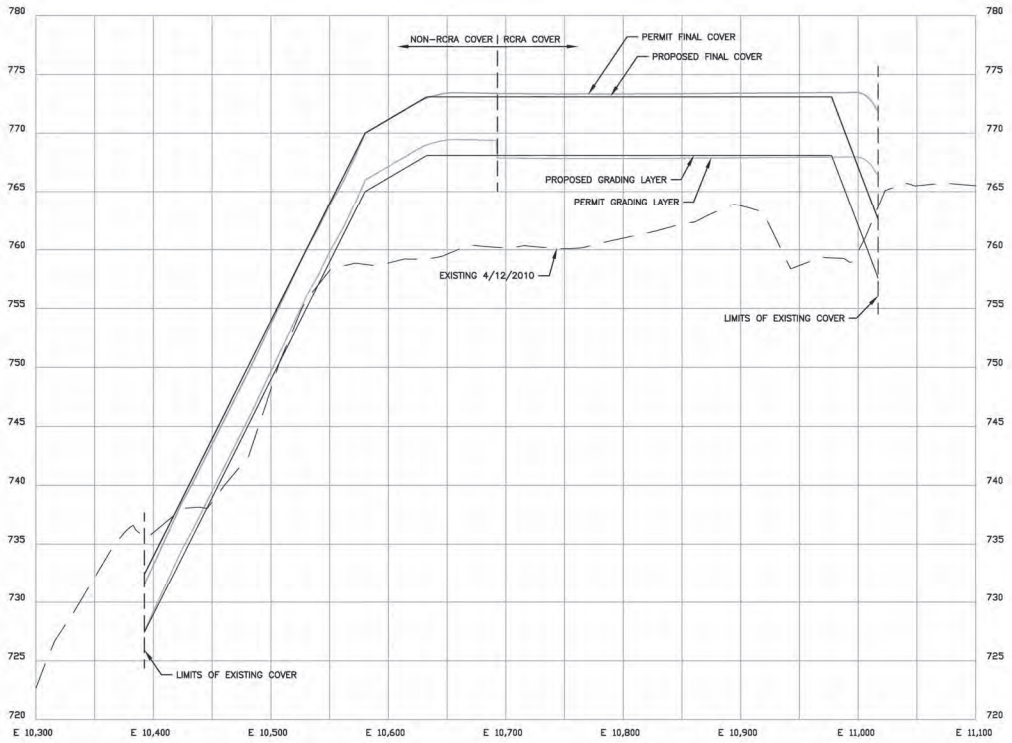
DRAWN BY: NGG

DATE: June 2011

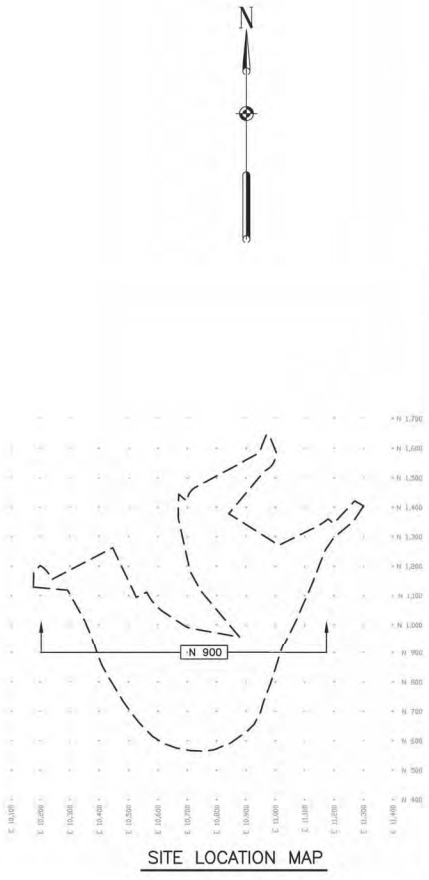
SCALE: As Shown

DRAWING NO.

6



ENGINEERING CROSS SECTION N 900



SITE LOCATION MAP

RELEASE	DATE:	BY:
Project Review		
6		
4		
3		
2		
1		
NO.	DATE:	BY:
DESCRIPTION		

REVISIONS

REPUBLIC SERVICES

CQM, INC.
Engineering-Surveying-Material Testing
2679 Continental Drive
Green Bay, WI 54311

Cross Sections

Old Site Area Final Cover
Plan Modification
Kestrel Hawk RDF
Racine, Wisconsin

DRAWN BY: NGG

DATE: June 2011

SCALE: As Shown

DRAWING NO.

7

Appendix C: Closure Cost Estimate

Engineering Opinion of Probable Cost - 2024
Site Closure (Final Grades)
Kestrel Hawk - Northwest Expansion & Old Site Landfill (License #252076990)
Racine County, Wisconsin

Cost Item	2024 Unit Price[1]		Quantity	Cost
Final Cover System:				
Mobilization (earthwork, geosynthetics, and gas system contractors)	$16,100.00	EA	1	$16,100
Grading layer (6 inch thick)	$4.44	CY	31,218	$138,700
Soil barrier layer/clay (24 inch thick)	$9.53	CY	124,872	$1,190,100
Geosynthetic clay liner (GCL)	$0.72	SF	1,685,775	$1,213,800
40-mil LLDPE geomembrane	$0.60	SF	1,685,775	$1,011,500
Geocomposite drainage layer	$0.54	SF	1,685,775	$910,400
Root zone soils (30 inch thick)	$9.53	CY	156,090	$1,487,600
Diversion berms	$13.50	LF	6,445	$87,100
Topsoil (6 inch thick)	$10.32	CY	31,944	$329,700
Seed, fertilizer, and mulch	$2,381.00	ACRE	40.0	$95,300
Downslope flumes/Energy dissipator	$20,634.00	LS	1	$20,700
4 inch HDPE perimeter toe drain pipe	$22.22	LF	3,560	$79,200
Gas extraction wells and appurtenances[2]	$81.79	VF	308	$25,200
6" Gas collection pipe	$17.58	LF	4,840	$85,100
8" Gas collection pipe	$23.58	LF	1,325	$31,300
12" Gas collection pipe	$35.58	LF	3,335	$118,700
Engineering Fees:				
Engineering Drawings and Specifications	$29,815.00	EA	1	$29,800
Construction Observation	$11,904.00	ACRE	38.7	$460,700
Surveying	$2,698.00	ACRE	38.7	$104,400
			Subtotal[3]:	$7,435,400
			Contingency (10%)[3]:	$743,500
			Total Cost[3]:	$8,178,900

Notes:

1. Unit prices are based on 2021 closure estimate submitted with the 2021 Hazardous Waste Report. The unit prices were inflated by a factor of 1.1926 approved 2006 closure estimate increased by the published inflation .
2. Assumed replacement of 4 gas extraction wells at an average depth of 77 feet per well.
3. Costs are rounded to the nearest hundred.

Created By: S. Edwards, 8.24.2021, B. Kahnk 2/9/2024
Checked By: J. Hotstream, 8.24.2021

Appendix E: Hazardous Waste Summary

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MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
17801	01/16/01	Phillips Plating Corp	Hazardous waste sludge N.O.S.	ORM-E	NA9188	EW	24210	
						GW	57090	
						F006	32800	
17802	02/10/01	Phillips Plating Corp	Hazardous waste sludge N.O.S.	ORM-E	NA9188	EW	24420	
						GW	57690	
						F006	33270	
01497	01/09/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000		
01493	12/29/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
39321	02/12/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
29635	10/07/01	Ladish Company	Hazardous Waste Solid NOS	ORM-E	NA9189	D000	6400	
49801	02/19/01	Ladish Company	Waste oil, forge Lubricant scale mixture	ORM-E	NA9189	D000	1500	1
39320	02/10/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39319	02/09/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39318	02/09/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39317	02/06/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39316	02/15/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39314	02/05/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
93915	02/04/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39313	02/04/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39312	02/02/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	

MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
39311	01/29/01	Ladish Company	Waste Oil, Forge Lubricants Scale Mixture	ORM-E	NA9189	D000	1500	
39310	01/27/01	Ladish Company	Waste Oil, Forge Lubricants Scale Mixture	ORM-E	NA9189	D000	1500	
39309	01/27/01	Ladish Company	Waste Oil, Forge Lubricants Scale Mixture	ORM-E	NA9189	D000	1500	
39308	01/22/01	Ladish Company	Waste Oil, Forge Lubricants Scale Mixture	ORM-E	NA9189	D000	1500	
39307	01/20/01	Ladish Company	Waste Oil, Forge Lubricants Scale Mixture	ORM-E	NA9189	D000	1500	
39306	01/16/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000		
39305	01/16/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000		
39304	01/15/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39303	01/14/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39302	01/13/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39301	01/12/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000		
01498	01/12/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000		
01496	01/07/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
01495	01/06/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
01494	01/05/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
39323	02/13/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39324	02/16/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39325	02/10/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
39322	01/12/01	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189	D000	1500	
50012	03/27/01	Ladish Company	Hazardous Waste, Liquid or Solid NOS	NOM-E	NA9189	D000	4000	

MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
49803	04/02/01	Ladish Company	Hazardous Waste, Liquid or Solid NOS	ORM-E	NA9189	D008	2500	
49804	04/29/01	Ladish Company	Hazardous Waste, Liquid or Solid NOS	ORM-E	NA9189	K063	22000	
20959	09/09/01	Ladish Co/Tri-Clover	Waste Flammable Liquid NOS	Flammable Liq	UN1993	D001,F001 F002,F005	3200	
20956		Ladish Co/Tri-Clover	Waste Flammable Liquid NOS	Flammable Liq	UN1993	D001,F001 F002,F005	12455	
20957	04/21/01	Ladish Co/Tri-Clover	Waste Flammable Liquid NOS	Flammable Liq	UN1993	D001,F001 F002,F005	5397	
01402	12/08/00	Ladish Company	Waste Oil, Forge Lubricant, Scale Mixture	ORM-E	NA9189		2500	
01407	12/16/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
01406	12/15/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
01404	12/11/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
01499	12/09/00	Ladish Company	Waste Oil, Forge Lubricant, Scale Mixture	ORM-E	NA9189			
01500	11/25/00	Ladish Company	Waste Oil, Forge Lubricant, Scale Mixture	ORM-E	NA9189		11000	
01403	12/9/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189		2500	
01405	12/15/00	Ladish Company	Waste Oil, Forge Lubricant Scale Mixture	ORM-E	NA9189			
49306	10/09/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
49305	10/09/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04846	10/09/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04844	10/09/01	Genzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04845	10/09/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04840	10/09/01	Gentzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04934	10/08/01	Gentzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189			

MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
04043	10/01/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04039	10/08/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04036	10-08/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04038	10/08/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04035	10/08/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04032	10/08/01	Getzen Company	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189			
04028	05/10/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006	6300	
04031	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006		
23035	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
23033	10-08-01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
23034	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000	55540	
23031	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
23030	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04033	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189			
49308	10/09/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189			
49307	10/91/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-001		
23032	10/08/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-000		
04041	10/09/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-001		
04042	10/09/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189			
04047	10/09/01	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006,D-001		

MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
49315	12/20/02	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006		
04049	04/14/02	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006		
04040	01/15/02	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006		
49314	09/21/02	Getzen Company, Inc.	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006	4020	
20932	09/03/01	Eaton Corporation	Hazardous Waste	ORM-E	NA9189	F017	1670	
20940	09/24/02	Eaton Corporation	Hazardous Waste	ORM-E	NA9189	F017	5120	
127303	12/14/02	Eaton Corporation	Hazardous Waste	ORM-E	NA9189	F017	466	
20943	06/22/02	Eaton Corporation	Hazardous Waste	ORM-E	NA9189	F017	640	
20939	03/24/02	Eaton Corporation	Hazardous Waste	ORM-E	NA9189	F017	1665	
20946	06/29/02	Eaton Corporation	Hazardous Waste-S	ORM-E	NA9189	D008	237	
			Hazardous Waste-L	ORM-E	NA9189	F002	1540	
			Hazardous Waste-L	ORM-E	NA9189	D001	53	
20945	06/29/02	EAton Corporation	Hazardous Waste-S	ORM-E	NA9189	D007	200	
			Hazardous Waste-L	ORM-E	NA9189	D007	2068	
127301	12/12/02	Eaton Corporation	Hazardous Waste-L	ORM-E	NA9189	D007	370	
			Hazardous Waste-L	ORM-E	NA9189	F002	735	
			Non-Hazardous Special	N/A	N/A	N/A	1831	
36002	06/29/02	Frank Holton & Co	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006	10000	
36003	07/08/02	FRank Holton & Co	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006	10000	
36004	09/30/02	Frank Holton & Co	Wastewater treatment sludge from electroplating operations	ORM-E	NA9189	F-006	10000	

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
36005	10/15/02	Frank Holton & Co	Wastewater treatment sludge from electroplating operation	ORM-E	NA9189	F-006	10000	
36006	11/24/02	Frank Holton & Co	Wastewater treatment sludge from electroplating operation	ORM-E	NA9189	F-006	10000	
13955	02/26/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	29370	
13961	07/31/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	28210	
13962	09/15/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	27000	
13969	07/27/02	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	36780	
13965	12/17/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	34040	
13957	04/15/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	28000	
13953	02/03/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9188	F-006	30480	
13952	01/14/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	28430	
13954	02/05/01	Phillips Plastics Corp	Hazardous waste-S	ORM-E	NA9189	F-006	31690	
101005	11/08/02	Square D Company	Hazardous waste NOS	ORM-C	NA9189	NONE	1680	
			Scrap Magnet waste-NOS	ORM-E	NONE	U013	715	
101001	08/09/02	Square D Company	Hazardous waste-NOS	ORM-C	NA9189	NONE	1870	
			Scrap Magnet waste-NOS	ORM-E	NONE	U013	1170	
20597	04/28/02	Square D Company	Hazardous waste-NOS	ORM-C	NA9189	NONE	3020	
			Scrap Magnet Waste-NOS	ORM-E	NONE	U013	1860	
20593	02/03/02	Square D Company	Hazardous waste-NOS	ORM-C	NA9189	NONE	940	
			Scrap magnet waste-NOS	ORM-E	NONE	U013	2705	
20576	05/05/01	Square D Company	Hazardous Waste-S-NOS	ORM-E	NA9189	D000	5460	

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
20576(CONT)	05/05/01	Square D Company	Not Listed	Not Listed	N/L	N/L	11932	
			Combustible Liquid-N	OS Combustible	NA9189 Liquid	N/A	910	
20503	07/29/01	Square D Company	Hazardous Waste-S NO	ORM-E	NA9189	D000	370	
			Not Listed	Not Listed	N/L	N/L	5460	
			Scrap Magnet Waste	ORM-C	N/A	0011	830	
20500	05/20/01	Square D Company	Scrap Magnet Waste	ORM-C	N/A	U011	6000	
20592	10/20/01	Square D Company	Scrap Magnet Waste	ORM-C	N/A	U011	2695	
			Hazardous Waste-S NO	ORM-E	NA2189	N/A	1010	
101000	12/29/02	Square D Company	Scrap Magnet Waste H	OS ORM-E	NONE	U011	600	
			Hazardous Waste NOS	ORM-C	NA9189	NONE	315	
22327	10/01/01	Professional Plating	Sludge from Chloride Zinc Bath with Chromate	ORM-E	UN2331	F006,F008	6250	
			Profile No. K066-K008 Drum Control 2173	NONE	NONE	NONE	7916	
23604	01/02/01	Racine Steel Casting	Waste Furnace Dust	ORM-E	NA9189	D006,D008	20000	
23606	01/20/01	Racine Steel Casting	Waste Furnace Dust	ORM-E	NA9189	D006,D008	20000	
23608	12/01/01	Racine Steel Casting	Pep set I-1600 & Pep	set II-2600 ORM-E	NA9189	D001	2000	
136715	06/17/02	Huffy Corporation	Hazardous Waste NOS	ORM-E	NA9189	D008		
21019	06/22/02	Huffy Corporation	Hazardous Waste NOS	ORM-E	NA9189	0008	2000	
37725	08/19/01	Plastics Engineering	Waste phenol contaminated dirt	ORM-E	NA9189	U188	46300	
22444	08/06/01	Jacobsen-TEXTRON	Hazardous Waste NOS	ORM-E	NA9189	D008		
22443	07/23/01	Jacobsen-TEXTRON	Hazardous Waste NOS	ORM-E	NA9189	D008		

MANIFEST LOG

MANIFEST NUMBER	DATE ACCEPTED	COMPANY NAME	WASTE NAME	US DOT HAZARD CLASS	US DOT ID #	US EPA WASTE CODE	SHIP WT	PROFILE NUMBER
22442	07/14/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
22438	07/09/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
22439	07/07/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
22436	06/09/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
22437	06/09/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
22435	06/09/01	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
52001	04/12/02	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
52009	10/05/02	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
52012	10/20/02	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
52000	02/03/02	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
52004	05/13/02	Jacobsen-TEXTRON	Hazardous waste-NOS	ORM-E	NA9189	D000		
36620	03/31/02	Quality Carriers, Inc	Haz waste NOS	ORM-E	NA9189	D001	15660	
36621	04/01/02	Quality Carriers, Inc	Haz waste NOS	ORM-E	NA9189	D001	15000	
36623	05/01/02	Quality Carriers, Inc	Haz waste NOS	ORM-E	NA9189	D001	10020	
11664	07/30/02	Quality Carriers, Inc	Haz waste NOS	ORM-E	NA9189	D001	6540	
40201	04/16/02	Shurpac Inc.	Paint Sludge	11274	11274	F017	7126	
22401	09/20/02	Shurpac Inc.	Paint Sludge	11274	11274	F017	2545	
22402	12/27/02	Shurpac Inc.	Paint Sludge	11274	11274	F017	1527	
40200	06/30/02	Shurpac Inc.	Paint Sludge	11274	11274	F017	2545	

Appendix F: Corrective Action Information

- F.1 – Excerpt from Foth Groundwater Remediation System Construction Observation Report – Sheet 1
- F.2 – Excerpt from 2024 Annual Report – Figure D-1: Vinyl Chloride Plume
- F.3 – Excerpt from 2024 Annual Report – Vinyl Chloride Trends
- F.4 – Excerpt from 2024 Annual Report – Figure D-2: 141U Area Instrumentation Diagram
- F.5 – Excerpt from Corrective Measures Study – List of Documents about 141U Area
- F.6 – Excerpt from Corrective Measures Study – Vinyl Chloride Historic Data

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Appendix F.1
Excerpt from Foth Groundwater Remediation System Construction Observation Report – Sheet 1

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