FINAL

SUBJECT: Procedures for DDAGW Review and Comment on Sanitary and Residual Waste Landfill Facility Permit-to-Install Applications

Number: DDAGW-03-02-401
Issued: 08/05/91
Revised: 05/07/93

PURPOSE: To establish policy for standardizing the procedures to be used by Division of Drinking and Ground Waters (DDAGW) staff in reviewing sanitary or residual waste landfill facility permit-to-install (PTI) applications. This policy establishes timelines for DDAGW staff to perform a review of a sanitary or residual waste landfill facility (SRLF) PTI application, and standardizes the format for DDAGW staff to communicate any deficiencies found in SRLF PTIs to the Division of Solid and Infectious Waste Management (DSIWM). This policy promotes consistency in DDAGW comments to DSIWM on SRLF PTI applications.

POLICY: The DDAGW shall follow the procedures outlined in this policy for reviewing SRLF PTI applications.

PROCEDURE: In reviewing a SRLF PTI application, DDAGW staff shall: Complete' 'the checklist (Attachment A for sanitary landfill facilities regulated under OAC 3745-27 or Attachment B for residual waste landfills regulated under OAC 3745-30) for each SRLF PTI application reviewed. This checklist must be revised when a revised PTI application is reviewed by DDAGW staff. Only those items referenced in the checklist shall be reviewed by DDAGW staff. Staff also will follow the timelines for review contained in Attachment C. For sanitary landfill facilities that originally were permitted between 1968 and 1980, the timelines contained in Attachment C(1) shall be used. For all other SRLF PTIs, the timelines in Attachment C(2) shall be used.

In drafting comments on deficiencies contained within a SRLF PTI application, DDAGW staff will utilize:

The format contained in Attachment D for deficiency comments;

The format contained in Attachment E for fmal comments where the SRLF PTI is sufficiently incomplete that its compliance with OAC Rule 3745-27-07 cannot be determined;

The format contained in Attachment F for final comments where the SRLF PTI application does not meet the requirements of OAC Rule 3745-27-07 (B) (for sanitary landfill facilities) or OAC Rule 3745-30-06(B) (for residual waste landfill facilities).

The format contained in Attachment G for final comments where the SRLF PTI application for an existing SRLF indicates a release of leachate to the ground water has occurred, but that the SRLF will comply with the requirements of OAC Rule 3745-27-07(B) for sanitary landfill facilities or OAC Rule 3745-30-06(B) for residual waste landfill facilities; and

The format contained in Attachment F, for final comments where the SRLF PTI application does not meet the groundwater monitoring requirements contained in OAC Rule 3745-27-10, for sanitary landfill facilities or OAC Rule 3745-30-08 for residual waste landfill facilities but is in compliance with OAC Rule 3745-27-07 for sanitary landfill facilities or OAC 3745-30-06 for residual waste landfill facilities.

When drafting deficiency and final comments, DDAGW staff hydrogeologists shall not make determinations as to the approvabiity of the SRLF PTI applications nor of the ability of the applicant to generate the information necessary to gain an approval. This includes both deficiency and final comments. The responsibility for determinations of the approvabiity of a PTI and the applicant's ability to produce information needed resides solely with DSlWM utilizing its policies and procedures.

In addition, all IOCs pertaining to SRLF PTI applications shall be sent to DDAGW-Central Office (DDAGW-CO) for oversight review prior to being finalized. All final comment IOCs shall be addressed to DDAGW-CO. The DDAGW-CO shall forward the DDAGW final comments concerning the SRLF PTI application to the appropriate DSIWM staff person.

LT/dr
REV3PP03.401

ATTACHMENT A
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Information to be shown on plans and/or submitted with plans

GULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
27-06 PLAN DRAWINGS				
)(2)(g)	Public and private water supply wells and their status			
)(2)(h)	Faults that have had displacement in Holocene time			
)(2)(i)	Surface and underground mining			
)(3)(d)	Location of borings, test pits, etc.			
)(3)(e)	Potentiometric maps of the uppermost aquifer, etc.			
(3)(f)	Location of ground water control structures			
(4)(a)	Limits of excavation			
06 SS SECTIONS				
(5)(b)(i)	Geologic stratigraphy and zones of saturation			
(5)(b)(ii)	Uppermost aquifer system and saturated strata above aquifer system			
(5)(b)(iii)	Well logs of intercepted borings			
(5)(b)(iv)	Ground water flow patterns for uppermost aquifer, system, etc.			
(5)(b)(v)	Limits of excavation			
(5)(b)(vi)	Permanent ground water control structures			
AIL WINGS				
7)(f)	Ground water monitoring well construction			
ROGEOLOGIC SITE INVESTIGATION REPORT				
2)(a)(i)	Suitability of the site for solid waste disposal			

ATTACHENT A (contined)
DIVISION OF DRINKING AND GROUND MATERS
SANITARY LANDFILL FACILITY PTIs
Infomation to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(2)(a)(ii)	Hydrogeology of the uppermost aquifer system, etc.			
(2)(a)(iii)	Characterization of the site geology			
cription of the regional hydrogeology and morphology				
(2)(b)(i)	Identification of the regional aquifer(s)			
(2)(b)(ii)	Well logs of water supply wells			
(2)(b)(iii)	Average yield of water supply wells			
(2)(b)(iv)	Direction of ground water flow in the regional aquifer			
(2)(b)(v)	Recharge and discharge areas of the regional aquifer			
(2)(b)(vi)	Public water supply wells			
(2)(b)(vii)	Regional stratigraphy			
(2)(b)(viii)	Local and regional structural geology			
2)(b)(ix)	Description of the regional geomorphology			
ription of the site hydrogeology and orphology				
2)(c)(i)(a)(i)	Textural classification of soil - USCS			
2)(c)(i)(a)(ii)	Atterberg limits			
2)(c)(i)(a)(iii)	Grain size distribution			
2)(c)(i)(a)(iv)	Hydraulic conductivity of unconsolidated formations			
2)(c)(i)(b)	Thickness of stratigraphic units			
2)(c)(i)(c)	Lateral extent of stratigraphic units			
2)(c)(ii)	Description of the site geomrphology			

ATTACHMENT A (continued)
DIVISION OF DRINKING AND GROUND WATERS
-SANITARY LANDFILL FACILITY PTIs
Infomtion to be shown on planand/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(2)(c)(iii)	Description of the site structural geology			
(C)(2)(c)(iv)	Depth to and extent of the zones of saturation			
(C)(2)(c)(iv)(a)	Temporal fluctuations in ground water levels, etc.			
(C)(2)(c)(iv)(b)	Interpretation of the ground water flow system			
(C)(2)(c)(iv)(c)	Recharge and discharge areas of the site			
(C)(2)(c)(iv)(d)	Vertical and horizontal hydraulic conductivity			
Description and quantification of the ground water quality				
(C)(2)(d)	Ground water quality, source of contamination, analysis			
Detailed description of methods and procedures				
(C)(2)(e)(i)	Drilling and soil sampling methods			
(C)(2)(e)(ii)	Procedures (etc.) used to characterize soil and rock			
(C)(2)(e)(iii)	Methodology (etc.) used to define the uppermost aquifer system			
(C)(2)(e)(iii)(a)	Well and piezometer construction specifications			
(C)(2)(e)(iii)(b)	Water level measurement procedures			
(C)(2)(e)(iv) (C)(2)(e)(iv)(a)	Methodology (etc.) used to determine ground water quality Detection of immiscible layers			
(C)(2)(e)(iv)(b)	Collection of ground water samples			

ATTACHMENT A (continued)
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(2)(e)(iv)(c)	Procedures for field analysis			
(C)(2)(e)(iv)(d)	Procedures for decontamination of equipment			
(C)(2)(e)(iv)(e)	Procedures applied to the analysis of ground water samples			
(C)(2)(e)(iv)(f)	Chain of custody used for samples			
(C)(2)(e)(iv)(g)	Field and laboratory QA/QC			
Data generated for the Hydrogeologic Site Investigation Report				
(C)(2)(f)	Boring logs, test pit logs and other data			
Detailed measures and operations to control and manage the following:				
(C)(3)(b)	Ground water infiltration			
Design calculations for the following:				
(C)(4)(b)	Liner thickness			
Plans				
(C)(7)(a)	Ground water monitoring program			
27-10 Determination of impact on ground water quality				
(A)	Ability to determine facilities impact on ground water quality			
Adequacy of monitoring system				
(B)(1)(a)	Ground water monitoring system (GWMS) with enough wells at appropriate location and depths to represent background			
(B)(1)(b)	GWMS with enough wells at appropriate locations and depths to represent ground water quality downgradient			

ATTACHMENT A (continued)
DIVISION OF DRINKING AND GROUND WATERS
-SANITARY LANDFILL FACILITY PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(B)(2)	Uppermost aquifer system (UAS) exists more than 150 feet below liner. GWMS monitors Significant Zones of Saturation (SZS)			
Well Construction				
(B)(3)(a)	Monitoring well casing			
(B)(3)(b)	Seal of annular space			
(B)(3)(c)	Screening casing			
(B)(3)(d)	Documentation of design installation, development, and abandonment			
(B)(3)(e)	Operation and maintenance of monitoring wells			
Siting of Monitoring Wells				
(B)(4)(a)	Number, spacing, depth based on site specific information			
(B)(4)(b)	Number, spacing, depth of wells to ensure they are capable of detecting a release			
Ground Water Elevation	Determination			
(B)(5)	Annual evaluation of ground water surface elevation data to determine if monitor System satisfies(B)(1-4)			

ATTACHMENT A(continued)
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Information to he shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
Sampling and Analysis Plan (SAP)				
(C)(1)	Document SAP in a written plan available on site for inspection			
(C)(1)(a)	Measurement of ground water elevations			
(C)(1)(b)	Detection of immiscible layers			
(C)(1)(c)(i)	Well excavation			
(C)(1)(c)(ii)	Sample withdrawal			
(C)(1)(c)(iii)	Sample containers and handling			
(C)(1)(c)(iv)	Sample preservation			
(C)(1)(d)(i)	Procedures and forms for recording raw data conditions of sample collection			
(C)(1)(d)(ii)	Calibration of field equipment			
(C)(1)(e)	Decontamination of equipment			
(C)(1)(f)	Analysis of groundwater samples			
(C)(1)(g)(i)	Chain of custody field tracking forms			
(C)(1)(g)(ii)	Chain of custody sample labels			
(C)(1)(h)(i)	Quality assurance quality control (QA/QC) replicate samples			
(C)(1)(h)(ii)	QA/QC field blanks			
(C)(1)(h)(iii)	Potential interferences			
(C)(2)	Ground water elevations measured in each well prior to purging for determination of ground water flow in USA and all SZS			
(C)(3)	Background ground water quality from upgradient wells			
(C)(4)	Background ground water quality from non-upgradient wells			
Statistical Methods				
(C)(5)(a)	Parametric ANOVA			
(C)(5)(b)	Nonparametric ANOVA			
(C)(5)(c)	Tolerance or Prediction Interval			

ATTACHMENT A(continued)
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Information to-be-shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(5)(d)	Control Chart			
(C)(5)(e)	Another statistical method			
(C)(6)(a)	Statistical test appropriate to data distribution			
(C)(6)(b)	Individual well comparison type I error level at least 0.01			
(C)(6)(c)	Type of control chart and associated parameter. values			
(C)(6)(d)	Tolerance or Prediction intervals percentage of population, levels of confidence			
(C)(6)(e)	Data below detection limits.			
(C)(6)(f)	Seasonal and spatial variability procedures			
(C)(7)	Determination of a statistically significant change in downgradient ground water quality			
(C)(8)	Assessment outline			
Sampling Schedule				
(D)(1)	Parameter List			
(D)(2)	Alternative parameter list for monofills			
(D)(3)	Initial year of ground water monitoring. Sampling quarterly for all parameters. Sampling must be appropriate for statistical method			
(D)(4)	Semi-annual monitoring for pH, specific conductance, total organic carbon, total dissolved solids and VOCs			
D)(5)	Annual sampling for all other parameters			

ATTACHMENT A(continued)
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Infomtion to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(D)(6)	Field analysis of ground water samples for temperature, pH, and specific conductance			
(D)(7)	Submittal of data within 60 days after sampling or 15 days after receiving the analysis results			
(D)(8)(a)	Notification of the Director of a statistically significant change in downgradient values within 15 days			
(D)(8)(b)	Resampling within 15 days to confirm			
(D)(8)(c)	Confirm or reject first determination within 60 days			
Assessment				
(E)	Applicant must state he will comply with 27-10(E)			
Corrective Measures				
(F)	Applicant must state he will comply with 27-10(F)			
27-06 Closure				
(C)(7)(g)	Final closure/post closure plan			

ATTACHMENT A(continued)
DIVISION OF DRINKING AND GROUND WATERS
SANITARY LANDFILL FACILITY PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	APPLICABLE (Y/N)	COMMENT
27-07 CRITERIA FOR APPROVAL			
(A)(1)	6111 Violation		
SITING CRITERIA			
(B)(1)	Located in a sand or gravel pit		
(B)(2)	Located in a limestone quarry		
(B)(4)	Located within the five year time of travel area to a public water supply well		
(B)(5)	Located above a designated sole source aquifer		
(B)(7)	Located within 200 feet of a fault with Holocene displacement		
(B)(8)	Located in an area of potential subsidence due to an underground mine		
(B)(9)	Located above an unconsolidated aquifer capable of sustaining a yield of 100 gpm for 24 hours		
(B)(11)	Located within 500 feet downgradient or 1000 feet upgradient of a water supply well		
(B)(15)	Isolation distance between bottom of recompacted soil liner and the uppermost aquifer system is not less than fifteen (15) feet		

ATTACHMENT B
DIVISION OF DRINKING AND GROUND WATERS
RESIOUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
30-05 PLAN DRAWINGS				
(B)(2)(G)	Public and private water supply wells and their status			
(B)(2)(h)	Faults that have had displacement in Holocene time			
(B)(2)(i)	Surface and underqround mininq			
(B)(3)(d)	Location of borings, test pits, etc.			
(B)(3)(e)	Potentiometric maps of the uppermost aquifer, etc.			
(B)(3)(f)	Location of ground water control structures			
(B)(4)(a)	Limits of excavation			
30-05 CROSS SECTIONS				
(B)(5)(b)(i)	Geologic stratigraphy and zones of saturation			
(B)(5)(b)(ii)	Uppermost aquifer system and saturated strata above aquifer system			
(B)(5)(b)(iii)	Well loqs of intercepted borinqs			
(B)(5)(b)(iv)	Ground water flow patterns for uppermost aquifer, system, etc.			
(B)(5)(b)(v)	Limits of excavation			
(B)(5)(b)(vi)	Permanent ground water control structures			
DETAIL DRAWINGS				
(B)(7)(f)	Ground water monitoring well construction			
HYDROGEOLOGIC SITE INVESTIGATION REPORT				
(C)(3)(a)(i)	Suitability of the site for solid waste disposal			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUNDWATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(3)(a)(ii)	Hydrogeology of the uppermost aquifer system, etc.			
(C)(3)(a)(iii)	Characterization of the site geology			
Description of the regional hydrogeology and geomorphology				
(C)(3)(b)(i)	Identification of the regional aquifer(s)			
(C)(3)(b)(ii)	Well logs of water supply wells			
(C)(3)(b)(iii)	Average yield of water supply wells			
(C)(3)(b)(iv)	Direction of ground water flow in the regional aquifer			
(C)(3)(b)(v)	Recharge and discharge areas of the regional aquifer			
(C)(3)(b)(vi)	Public water supply wells			
(C)(3)(b)(vii)	Regional stratigraphy			
(C)(3)(b)(viii)	Local and regional structural geology			
(C)(3)(b)(ix)	Description of the regional geomorphology			
Description of the site hydrogeology and geomorphology				
(C)(3)(c)(i)(a)(i)	Textural classification of soil - USCS			
(C)(3)(c)(i)(a)(ii)	Atterberg limits			
(C)(3)(c)(i)(a)(iii)	Grain size distribution			
(C)(3)(c)(i)(a)(iv)	Hydraulic conductivity of unconsolidated formations			
(C)(3)(c)(i)(b)	Thickness of stratigraphic units			
(C)(3)(c)(i)(c)	Lateral extent of stratigraphic units			
(C)(3)(c)(ii)	Description of the site geomorphology			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND WATERS
RESIDUAL WASTE LANDFILL PTIs
Infant&ion to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(3)(c)(iii)	Description of the site structural geology			
(C)(3)(c)(iv)	Depth to and extent of the zones of saturation			
(C)(3)(c)(iv)(a)	Temporal fluctuations in ground water levels, etc.			
(C)(3)(c)(iv)(b)	Interpretation of the ground water flow system			
(C)(3)(c)(iv)(c)	Recharge and discharge areas of the site			
(C)(3)(c)(iv)(d)	Vertical and horizontal hydraulic conductivity			
Description and quantification of the ground water quality				
(C)(3)(d)	Ground water quality, source of contamination, analysis			
Detailed description of methods and procedures				
(C)(3)(e)(i)	Drilling and soil sampling methods			
(C)(3)(e)(ii)	Procedures (etc.) used to characterize soil and rock			
(C)(3)(e)(iii)	Methodology (etc.) used to define the uppermost aquifer system			
(C)(3)(e)(iii)(a)	Well and piezometer construction specifications			
(C)(3)(e)(iii)(b)	Water level measurement procedures			
(C)(3)(e)(iv)	Methodology (etc.) used to determine ground water quality			
(C)(3)(e)(iv)(a)	Collection of ground water samples			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND HATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(3)(e)(iv)(b)	Procedures for field analysis			
(C)(3)(e)(iv)(c)	Procedures for decontamination of equipment			
(C)(3)(e)(iv)(d)	Procedures applied to the analysis of ground water samples			
(C)(3)(e)(iv)(e)	Chain of custody used for samples			
(C)(3)(e)(iv)(f)	Field and laboratory QA/QC			
Data generated for the Hydrogeologic Site Investigation Report				
(C)(3)(f)	Boring logs,test pit logs and other data			
Detailed measures and operations to control and manage the following:				
(C)(4)(b)	Ground water infiltration			
Design calculations for the following:				
(C)(5)(b)	Liner thickness calculations			
Plans				
(C)(8)(a)	Ground water monitoring program (except for qualifying Class IV landfills)			
30-08 Determination of impact on ground water quality				
(A)	Ability to determine facility's impact on ground water quality			
Adequacy of monitoring system				
(B)(1)(a)	Ground water monitoring system (GWMS) with enough wells at appropriate location and depths to represent background			
(B)(1)(b)	GWMS with enough wells at appropriate locations and depths to represent ground water quality downgradient			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND WATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
Sampling and Analysis Plan (SAP)				
(C)(1)	Document SAP in a written plan available on site for inspection			
(C)(1)(a)	Measurement of ground water elevations			
(C)(1)(b)	Detection of immiscible layers			
(C)(1)(c)(i)	Well excavation			
(C)(1)(c)(ii)	Sample withdrawal			
(C)(1)(c)(iii)	Sample containers and handling			
(C)(1)(c)(iv)	Sample preservation			
(C)(1)(d)(i)	Procedures and forms for recording raw data conditions of sample collection			
(C)(1)(d)(ii)	Calibration of field equipment			
(C)(1)(e)	Decontamination of equipment			
(C)(1)(f)	Analysis of groundwater samples			
(C)(1)(g)(i)	Chain of custody field tracking forms			
(C)(1)(g)(ii)	Chain of custody sample labels			
(C)(1)(h)(i)	Quality assurance quality control (QA/QC) replicate samples			
(C)(1)(h)(ii)	QA/QC field blanks			
(C)(1)(h)(iii)	Potential interferences			
(C)(2)	Ground water elevations measured in each well prior to purging for determination of ground water flow in UAS and all SZS			
(C)(3)	Background ground water quality from upgradient wells			
(C)(4)	Background ground water quality from non-upgradient wells			
Statistical Method Specified Within 90 Days of Taking Final Sample of Initial Year of Monitoring				
(C)(5)(a)	Parametric ANOVA			
(C)(5)(b)	Nonparametric ANOVA			
(C)(5)(c)	Tolerance or Prediction Interval			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND WATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(B)(2)	Uppermost aquifer system (UAS) exists more than 150 feet below liner. GWMS monitors Significant Zones of Saturation (SZS)			
Well Construction				
(B)(3)(a)	Monitoring well casing			
(B)(3)(b)	Seal of annular space			
(B)(3)(c)	Screening casing			
(B)(3)(d)	Documentation of design installation, development, and abandonment			
(B)(3)(e)	Operation and maintenance of monitorin wells			
Siting of Monitoring Wells				
(B)(4)(a)	Number, spacing, depth based on site specific information			
(B)(4)(b)	Number, spacing, depth of wells to ensure they are capable of detecting a release			
Ground Water Elevation Determination				
(B)(5)	Annual evaluation of ground water surface elevation data to determine if monitor system satisfies (B)(1-4)			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND WATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(D)(6)	Field analysis of ground water samples for temperature, pH, and specific conductance			
(D)(7)(a)	Minimum frequency will include a sequence of 4 samples at appropriate interval to insure an independent sample			
(0)(7)(b)	An alternate sampling procedure			
(D)(8)	Notification of the Director of a statistically significant change in downgradient values within 15 days of second consecutive semi-annual period of statistically significant change			
(D)(9)(a)(i)	Sample leachate collection system (if exists) within 15 days of notifying director for Appendix II then sample affected wells within 75 days for leachate			
(D)(9)(a)(ii)	If leachate quality is known then sample affected wells for leachate/leachate derived parameters within 15 days of notifying director			
(D)(10)	Sample background wells within 90 days of sampling affected wells			
(D)(11)	Sample all wells not sampled in D(9)&(10) for parameters found to be above background			
(D)(12)	Request resume detection monitoring			

ATTACHMENT B (continued)
DIVISION OF DRINK NG AND GROUND HATERS
RESIDUAL WAS E LANDFILL PTIs
Information to be shown on p ans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(C)(5)(d)	Control Chart			
(C)(5)(e)	Another statistical method			
(C)(6)(a)	Statistical test appropriate to data distribution			
(C)(6)(b)	Individual well comparison type I error level at least 0.01			
(C)(6)(c)	Type of control chart and associated parameter values			
(C)(6)(d)	Tolerance or Prediction intervals percentage of population, levels of confidence			
(C)(6)(e)	Data below detection limits			
(C)(6)(f)	Seasonal and spatial variability procedures			
(C)(7)	Determination of a statistically significant change in downgradient ground water quality			
(C)(8)	All data & analysis submitted within 75 days of sampling well			
Sampling Schedule				
D)(1)	Parameter List (Appendix III)			
D)(2)	Alternative parameter list			
D)(3)	Initial year of ground water monitoring. Sampling quarterly for all parameters except for those parameters specified in Appendix III (pg. 32). Sampling freq. must be appropriate for statistical method			
D)(4)	Semi-annual monitoring for indicator parameters in Appendix III or alternate parameter list			
D)(5)	Annual sampling for-water quality parameters in Appendix III			

ATTACHMENT t? (continued)
DIVISION OF DRINKING AND GROUND WATERS
RESIDUAL WASTE LANDFILL PTIs
Information to be shown on plans and/or submitted with plans

REGULATION	CONTENT	PRESENT Y/N	ADEQUATE Y/N	COMMENT
(D)(13)	Director may consider information submitted by the permittee when evaluating request made under (D)(12), (E)(5), (E)(7			
Assessment				
(E)	App licant must state he will comply with30-08(E)			
CorrectiveMeasures				
(F)	Applicant must state he will comply with 30-08(F)			
30-05 Closure				
(C)(8)(g)	Final closure/post closure plan			

ATTACHMENT B (continued)
DIVISION OF DRINKING AND GROUND HATERS
RESIDUAL WASTE PTIs
Infonmtion to be shown on plans and/or submitted with plans

REGULATION	CONTENT	APPLICABLE (Y/N)	COMMENT
30-06 CRITERIA FOR APPROVAL			
(A)(l)	6111 Violation		
SITING CRITERIA			
(B)(1)	Located in a sand or gravel pit		
(B)(2)	Located in a limestone quarry		
(B)(4)	Located within the five year time of travel area to a public water supply well		
(B)(5)	Located above a designated sole source aquifer		
(B)(7)	Located within 200 feet of a fault with Holocene displacement		
(B)(8)	Located in an area of potential subsidence due to an underground mine		
(B)(9)	Located above an unconsolidated aquifer capable of sustaining a yield of 100 gpm for 24 hours		
(B)(11)	Located within 500 feet upgradient or 1000 feet downgradient of a water supply well		
(B)(15)	Isolation distance between bottom of recompacted soil liner and the uppermost aquifer system is not less than: 5 feet for Class III, 10 feet for Class II, 15 feet for Class I		

ATTACHMENT C(1)

PTI Received by DDAGW

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Information Adequate

No

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Within 25 days of receiving PTI, transmit (Fax or E-Mail) draft IOC to DDAGW-CO for **oversight review**

↓

Within 30 days of receiving PTI, 'DDAGW-CO verbally informs DDAGW-DO of comments on draft IOC

↓

Within 35 days of receiving PTI, DDAGW-DO transmits adequacy IOC to DSIWM-DO

Yes

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Within 25 days of receiving PTI, DDAGW-DO transmits draft final comment IQC to DDAGW-CO for **oversight review**

↓

Within 30 days of receiving PTI, DDAGW-CO transmits verbal comments on DO draft final comment IOC to DDAGW-DO

↓

Within 35 days of receiving PTI, DDAGW-DO transmits final comment IOC to DDAGW-CO

↓

Within 40 days of receiving PTI, DDAGW-CO submits final comments from DDAGW to DSJWM-DO

Revised PTI received by DDAGW-DO

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Within 20 days of receiving revised PTI, DDAGW-DO transmits draft final comment IOC (E-Mail or Fax:) to DDAGW-CO for oversight review

↓

Within 22 days of receiving revised PTI, DDAGW-CO verbally transmits comments on draft final comment IOC to DDAGW-DO

↓

Within 27 days of receiving revised PTI, DDAGW-DO transmits (E-Mail or Fax) final comment IOC to DDAGW-CO

↓

Within 30 days of receiving revised PTI, DDAGW-CO submits final comments from DDAGW to DSIWM-DO

Division of Drinking and Ground Waters Sanitary Landfill Facility Permit Application Process for Pre-19868-1980 facilities

ATTACHMENT C(2)

PTI Received by DDAGW-DO

information Adequate

No

Within 25 days of receiving PTI, transmit (Fax or E-Mail) draft deficiency IOC to DDAGW-CO for oversight review

Within 30 days receiving PTI, DDAGW-CO verbally informs DDAGW-DO of comments on draft IOC

Within 35 days of receiving PTI, DDAGW-DO transmits deficiency IOC to DSlWM

Yes

Within 25 days of receiving PTI, DDAGW-DO transmits draft final comment IOC to DDAGW-CO for oversight review

Within 30 days of receiving PTI, DDAGW-CO transmits verbal comments on draft final comment IOC to DDAGW-DO

Within 35 days of receiving PTI, DDAGW-DO transmits final comment IOC to DDAGW-CO

Within 40 days of receiving PTI, DDAGW-CO submits final comments from DDAGW to DSIWM-DO

Revised PTI **Received by** DDAGW-DO

1st or 2nd Revision

1st Revision

Information **Adequate**

No

Within 25 days of receiving revised deficiency PTI, transmit (Fax or E-Mail) draft IOC to DDAGW-CO for oversight review

Within 30 days of receiving revised deficiency PTI, DDAGW-CO verbally informs DDAGW-DO of comments on draft IOC

Within 35 days of receiving revised deficiency PTI, DDAGW-DO transmits adequacy IOC to DSIWM-DO

Yes

2nd Revision

Within 20 days of receiving revised PTI DDAGW-DO transmits draft final comment IOC (E-Mail or Fax) to DDAGW-CO for oversite review

Within 25 days of receiving revised PTI, DDAGW-CO verbally transmits comments on draft final comments to DDAGW-DO

Within 30 days of receiving revised PTI, DDAGW-DO transmits (E-Mail or Fax) final comments IOC to DDAGW-CO final comments

Within 35 days of receiving revised PTI, DDAGW-CO submits final comments from DDAGW to DSlWM-DO

Division of Drinking and Ground **Waters Sanitary Landfill and Residual Waste Landfill Permit Application Process for** Post-1980 Facilities

ATTACHMENT D

Format for Deficiency IOCs for Sanitary Landfill or Residual Waste Landfill Facility PTIs

1. Introduction: This paragraph should list:

   a. **Name** of the **facility;** and

   b. County location of the facility; and

   c. Permit number

2 Hydrogeology Under the Facility: This paragraph should list:

   a. The stratigraphy under the site; and

   b. The hydrogeology under the site including;

      i. The uppermost aquifer system; and

      ii. The significant saturated zones above the uppermost aquifer system; and

      iii. The direction of ground water flow.

3. A brief paragraph stating major siting deficiencies with the PTI application with a reference to the Attachment for a detailed listing of all deficiencies.

4. Conclusion paragraph

5. Attachment which shall contain a detailed listing of all deficiencies including:

   a. Siting Criteria Issues [OAC 3745-27-07(B) or OAC 3745-30-06(B)]. This should include:

      i The citation of the rule number for each pertinent (geologic/hydrogeologic related) siting criteria as set forth in OAC Rule 3745-27-07(B) or OAC Rule 3745-30-06(B); and

      ii. A brief description of how the proposed site does not comply with the cited rule; and

      iii A brief explanation of what information the DDAGW needs (if any) to further evaluate the PTI application with respect to the cited regulation.

   b. Ground Water Contamination Issues. Deficiencies should be discussed under this part only when there are indications of contamination from an active sanitary landfill facility which is requesting a vertical or lateral expansion continuous with the area of the sanitary landfill facility that is suspected of being the source of the release. All other comments on ground water quality should be documented under OAC Rule 3745-27-06(C)(2)(d) or OAC Rule 3745-30-05(C)(3)(d). Comments under section should include:

      i Nature of contamination

      ii. Locations (i.e. which monitoring wells exhibit contamination)

      iii. Potential Sources

iv. **Number** of sampling rounds where ground water contamination has been identified.

v. Recommendations for further sampling or clarification of data where applicable.

c. Deficiencies which relate to OAC 3745-27-06(C)(2) or OAC 3745-30-05(C)(3) [Hydrogeologic Report]. These should include:

i A citation of the rule number of the pertinent regulation; and

ii. A brief description of how the PTI application does not comply with the cited regulation; and

iii. A brief explanation of what information the DDAGW needs (if any) to further evaluate the PTI application with respect to the cited regulation.

d. Deficiencies which relate to OAC 3745-27-06(C)(7)(a) or OAC 3745-30-05(C)(8)(a) [Ground Water Monitoring Program Plan]. This should include:

i. A citation of the pertinent regulation in OAC Rule 3745-27-10 or OAC 3745-30-08.

ii. A brief description of how the PTI application does not comply with the cited regulation; and

iii. A brief explanation of what information the DDAGW needs (if any) to further evaluate the PTI application with respect to the cited regulation.

ATTACHMENT E

Format for Final Comments Concerning SRLF PTI Applications Where the Application is Incomplete and/or Does Not Meet OAC Rule 3745-27-07 or OAC Rule 3745-30-06.

L Introduction: This paragraph should list:

a. Name of SRLF; and

b. County SRLF is located within; and

c. Permit number.

2 General Information: A brief paragraph describing pertinent general information about the site.

3. Specific Comments: Each comment should be formatted in the following manner.

a. The first paragraph/sentence shall quote the pertinent regulation.

b. The second paragraph/sentence shall briefly describe the technical details showing that the SRLF PTI is deficient when compared to the cited regulation.

4. Conclusion Paragraph: A brief iteration of the deficiencies listed.

ATTACHMENT F

Format For **Final Comments Where All Siting Criteria** Are Satisfied hut **Leachate Has** Been **Released to the Ground** Water.

1. Introduction: **This** paragraph should list:

   a. Name of SRLF;

   b. County SRLF is located within; and

   c. Permit number.

2. General Information: A brief discussion of:

   a. The hydrogeology; and

   b. How the SRLF complies with OAC Rule 3745-27-07(B) or OAC Rule 3745-30-06(B).

3, Leachate Release: **A** brief description of the leachate release including:

   a Nature of contamination;

   b. Locations (i.e. monitoring wells and zones of saturations involved); and

   c. Number of sampling rounds where ground water contamination has been identified; and

4. Conclusion Paragraph: **A** brief iteration of the deficiencies Listed.

ATTACHMENT G

Format For Final Comments Where SRLF PTI Application Is In Compliance With OAC Rule 3745-27-07 or OAC Rule 3745-30-06, but Deficient With Respect to OAC Rule: 3745-27-10 or OAC 3745-30-M.

1. Introduction: This paragraph should list:

   a. The name of the SRLF; and

   b. The county the SRLF is located within; and

   c. The permit number.

2. General Information: A brief description of:

   a. The hydrogeology; and

   b. How the SRLF complies with OAC Rule 3745-27-07 or OAC Rule 3745-30-M.

3. Deficiencies involving OAC Rule 3745-27-10: Each Deficiency should be numbered and written in the form of a permit condition (The permittee shall...).

4. Conclusion Paragraph