

**INSTRUCTIONS FOR
UNIFORM STATE OF ARIZONA SITE INVESTIGATION REPORT**



(A.A.C. R18-9-A310)

Instructions

The applicant for an onsite wastewater treatment facility pursuant to 18 A.A.C. 9, Article 3 shall ensure that a qualified investigator conducts the site investigation consisting of surface and subsurface characterizations, and submit the results with a Notice of Intent to Discharge pursuant to A.A.C. R18-9-A309(B). **THE RESULTS OF THE SITE INVESTIGATION SHALL BE SUBMITTED IN A FORMAT PRESCRIBED BY THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY. THIS FORM AND ATTACHMENTS IS THE FORMAT PRESCRIBED BY THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY.**

NOTE: BEFORE COMPLETING THIS FORM, THE INVESTIGATOR SHALL DOWNLOAD THE LATEST UPDATE OF THIS FORM FROM THE ADEQ WEBSITE AS NOTED AT THE BOTTOM OF THIS PAGE. THE FORM USED SHALL BE THE LATEST VERSION AS OF THE “DATE OF INVESTIGATION”.

An investigator that meets the qualifications of A.A.C. R18-9-A310(H) shall perform the site investigation in conformance with A.A.C. R18-9-A310. The site investigator shall utilize ADEQ GWS Form 423, and Attachments 1, 2, 3, and 4 as appropriate. Space is provided for an Arizona-Registered Professional Engineer, Geologist or Sanitarian to seal their work products.

Site Investigation Report, Item 1: The authorization for site investigation shall be completed by the appropriate person before the field investigation begins.

Site Investigation Report, Items 2 – 10: To be completed by the qualified investigator.

Site Investigation Report Attachments 1, 2, 3, and 4: The qualified investigator shall complete all necessary Attachments to report findings for the site investigation report which is to be submitted pursuant to R18-9-A309(B)(1). Attach only those with required information, as identified in Site Investigation Report Item 9. The investigator shall use the appropriate continuation page for any Attachment requiring more than 1 page. The investigator shall add the page number in the blank spaces at the bottom of each continuation page used. The investigator shall include the page totals in the Item 9 on page 3 of the report form. Please use page ii of these instructions for the soil codes for ASTM Method 5921 in Attachment 1.

TEXTURE		STRUCTURE				
Loamy Sand – (LS)	GRADE					
Sandy Loam – (SL)	Structureless	(0)	No aggregation			
Silt Loam – (SiL)	Weak	(1)	Barely observable			
Loam – (L)	Moderate	(2)	Distinct peds			
Sandy Clay Loam – (SCL)	Strong	(3)	Durable peds	Angular.		
Silty Clay Loam – (SiCL)				Subangular.		
Clay Loam – (CL)	SIZE		Granular, Platy	Blocky	Prismatic, Columnar	
Sandy Clay – (SC)	Very Fine	(VF)	<1 mm	<5 mm	<10 mm	
Silty Clay – (SiC)	Fine	(F)	1-2	5-10	10-20	
Clay – (C)	Medium	(M)	2-5	10-20	20-50	
	Coarse	(C)	5-10	20-50	50-100	
	Very Coarse	(VC)	>10	>50	>100	
SAND SIZES	SHAPE					
Coarse – (Co)	Platy	(PL)	Flat, plate-like			
Medium – (M)	Prismatic	(PR)	Taller than wide			
Fine – (F)	--Columnar	(CPR)	Rounded tops			
Very Fine – (VF)	Blocky	(BK)	Cubical			
	--Angular	(ABK)	Sharp edges			
	-- Subangular	(SBK)	Rounded edges			
	Granular	(GR)	Spherical			
	No Structure					
	--Single Grain	(SG)	Sandy texture			
	-- Massive	(M)	Finer textures			
ROCK FRAGMENTS		MOTTLES	BOUNDARY	CONSISTENCY		SAR (gpd/ft ²)
				DRY	MOIST	
ROUNDED, SUBROUNDED ANGULAR, IRREGULAR Gravel – (GR) 2-75 mm Fine – (FGR) 2-5 mm Medium – (MGR) 5-20 mm Coarse – (CGR) 20-75 mm Pebbles – (PB) 2-75 mm Fine – (FPB) 2-5 mm Medium – (MPB) 5-20 mm Coarse – (CPB) 20-75 mm Cobbles – (CB) 75-250 mm Stones – (S) 250-600 mm Boulders – (B) ≥600 mm FLAT Channers – (CH) 2-150 mm Flagstones – (FL) 150-380 mm Stones – (ST) 380-600 mm Boulders – (BO) ≥600 mm	TYPE OF ROCK Basalt – (BAS) Cinders – (CIND) Sandstone – (SST) Limestone – (LST) TERMS OF SOIL/ROCK Cemented – (CEM) Ice or Frozen – (ICE) Weathered – (WEA) Unweathered – (UNWEA) Fractured – (FRA) Decomposed – (DEC) Stratified – (ST)	QUANTITY Few (F) - <2% Common (C) - 2-20% Many (M) - >20% SIZE Fine (1) - <5 mm Medium (2) - 5 - 15 mm Coarse (3) - >15 mm CONTRAST Faint – (F) Distinct – (D) Prominent – (P) NOTE: Report Soil Color in “Comments” when Mottles are Common or Many.	DISTINCTNESS Abrupt (A) – Less than 2 cm Clear (C) – 2 to 5 cm Gradual (G) – 5 to 15 cm Diffuse (D) – More than 15 cm TOPOGRAPHY Smooth (S) – A plane with few or no irregularities Wavy (W) – Waves wider than deep Irregular (I) – Waves deeper than wide Broken (B) – discontinuous and interrupted	L = Loose S = Soft SH = Slightly Hard MH = Moderately Hard VH = Very Hard H = Hard R = Rigid VR = Very Rigid	L = Loose VFR = Very Friable FR = Friable FI = Firm VFI = Very Firm EFI = Extremely Firm SR = Slightly Rigid R = Rigid VR = Very Rigid	See Arizona Administrative Code(A.A.C.) R18-9-A312(D) for SAR value.

1 Authorization For Site Investigation

I certify that I am (check one) the Owner, the Authorized Representative or an Other Person and have authority to grant the investigator access to the property for this site investigation and authorize the work certified in this site assessment.

Name & Address
(Printed) _____

Signature _____

2 Project Identification

Property Owner or Project Name _____

3 Site Information [A.A.C. R18-9-A309(B)(2)(a)]

Address _____ City _____

Parcel Number _____ Lot Number _____

Township _____ Range _____ Section _____

Latitude _____ ° _____ ' _____ " N _____ Longitude _____ ° _____ ' _____ " W

4 Investigator Information [A.A.C. R18-9-A310(H)]

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ State _____

Zip _____ E-Mail _____

5 Surface Characterization [A.A.C. R18-9-A310(C)]

Identify the presence or absence of all of the following possible limiting conditions in the intended location of the treatment works and the primary and reserve areas of the on-site wastewater treatment facility:

A) The surface slope is greater than 15 % at the intended location of the on-site wastewater facility YES No

B) Setback distances do NOT meet all the minimum values specified in R18-9-A312(C) YES No

NOTE: Check YES if the location or size of the dwelling or other improvements, or the bedroom count or the fixture unit count is UNKNOWN to the site investigator.

C) Surface drainage characteristics could adversely affect the ability of the facility to function properly
 YES No **NOTE: If YES, please describe in Attachment 4.**

D) A 100-year flood hazard zone, as indicated on the applicable flood insurance rate map, is located within the property on which the on-site wastewater treatment facility will be installed YES No **NOTE: If YES, please specify the FEMA Flood Insurance Map Number or Other Source _____**

E) An outcropping of rock that cannot be excavated is present and could impair the function of soil receiving the discharge
 YES No

F) Fill material deposits are present YES No

If the answer is YES to any of the above potential surface limiting conditions, please show location and note the condition type on Site Investigation Map (Item 7).

6 Subsurface Characterization Method [A.A.C. R18-9-A310(D)]

Check method used to perform subsurface characterization per A.A.C. R18-9-A310(D)(1) and (3)

A) ASTM D5921 used? Yes No **(if Yes, please enclose Attachment 1)**

B) Percolation test method used? Yes No **(if Yes, please enclose Attachment 2)**

C) Seepage performance test method used? Yes No **(if Yes, please enclose Attachment 3)**

D) Other ADEQ approved method? Yes No **(if Yes, please provide in Attachment 4 the method and data)**

7 Site Investigation Map Showing the Location of Limiting Conditions and Setbacks from Features and Improvements [A.A.C. R18-9-A309(B)(2)(a)]

A. CHECK below the features shown on the Site Investigation Map. **WRITE N/A** if item is **NOT PRESENT**. **RECORD** below the separation (feet) that will be maintained between the system and the checked feature.

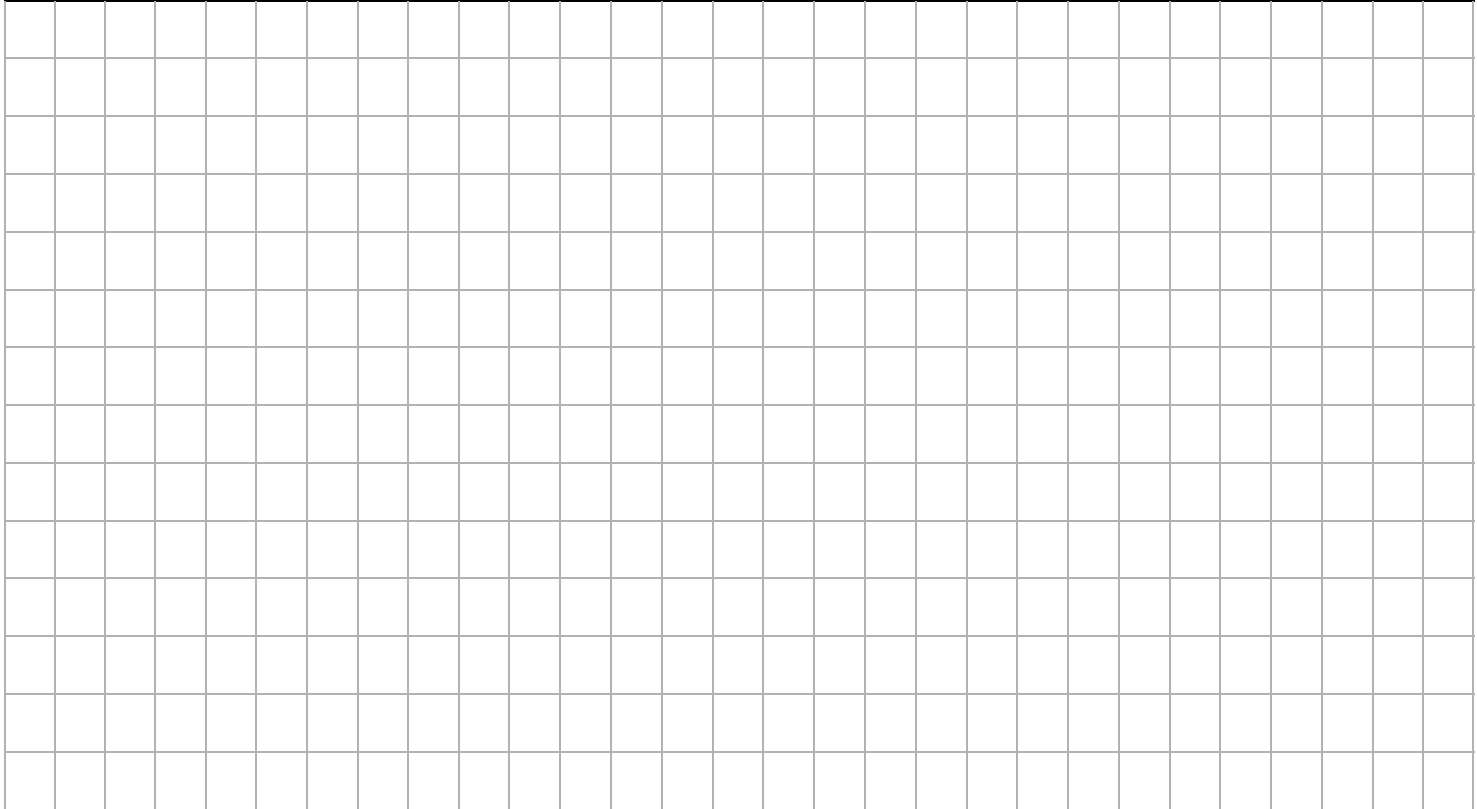
<p>___ Water supply well ___ (ft)</p> <p>___ Water main or branch water line ___ (ft)</p> <p>___ Domestic service water line ___ (ft)</p> <p>___ Drinking water intake from a surface water source ___ (ft)</p> <p>___ Perennial or intermittent stream ___ (ft)</p> <p>___ Lake, reservoir, or canal ___ (ft)</p> <p>___ Pond or other water feature ___ (ft)</p> <p>___ Swimming pool ___ (ft)</p> <p>___ Planned building ___ (ft)</p> <p>___ Existing building ___ (ft)</p>	<p>___ Boundary of 100-year flood hazard zone ___ (ft)</p> <p>___ Drainage easement or wash with drainage area more than twenty acres ___ (ft)</p> <p>___ Other Easement ___ (ft)</p> <p>___ Downslope cut banks and culvert or roadway ditches ___ (ft)</p> <p>___ Planned cut bank over 2 feet deep ___ (ft)</p> <p>___ Wall or planned wall over 2 feet high ___ (ft)</p> <p>___ Driveway or parking area ___ (ft)</p> <p>___ Storage Area ___ (ft) ___ Earth fissure ___ (ft)</p> <p>___ Other ___ (ft) Describe: _____</p>
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B. Minimum setback distances are within the limits specified in R18-9-A312(C); Yes UNKNOWN No
Check UNKNOWN if the dwelling location or size (including building footprint, bedroom count & fixture unit count), or the location of other improvements is not known to the person performing the site investigation.

C. Show all soil test locations. Show any condition or feature observed during the site investigation which may affect on-site system design & is located within the **SITE INVESTIGATION AREA (defined as the planned excavation boundaries for the treatment works, primary disposal area and reserve disposal area plus the surrounding area out to 100 feet)** including :

(1) Show land surface contours at appropriate intervals when the elevations across the Site Investigation Area differ by more than 5 feet, and

(2) Any other factor is observed that may affect system design **regardless of property ownership (please include the Site Investigation Map with Attachment 4 if the information cannot be depicted on the below Grid).**



8 Subsurface Limiting Conditions [A.A.C. R18-9-A310(D)(2)]

Identify the presence or absence of all of the following possible limiting conditions in the intended location of the primary and reserve disposal areas of the on-site wastewater treatment facility to a depth of at least 12 feet below land surface or to an impervious soil or rock layer if encountered at a shallower depth:

- A) The soil absorption rate determined under A.A.C. R18-9-A312(D)(2) is:
 - 1. More than 1.20 gallons per day per square foot? Yes No
 - 2. Less than 0.20 gallons per day per square foot? Yes No
 - 3. A **site-specific soil absorption rate (SAR)** is required per A.A.C. R18-9-A312 (D)(2)(b)? Yes No
- B) The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation specified in A.A.C. R18-9-A312(E)(1)? Yes No
- C) Does seasonal saturation occur within surface soils that could affect the performance of the on-site wastewater treatment facility? Yes No If Yes, describe evidence: _____
- D) Do any of the following subsurface limiting conditions that may cause or contribute to surfacing of wastewater occur within 12 feet of the land surface:
 - 1. An impervious soil or rock layer? Yes No
 - 2. A zone of saturation that substantially limits downward percolation from the disposal works? Yes No
 - 3. Soil with more than 50 percent rock fragments? Yes No
- E) Do any of the following subsurface limiting conditions that may promote accelerated downward movement of insufficiently treated wastewater occur within 12 feet of the land surface:
 - 1. Fractures or joints in rock that are open, continuous, or interconnected? Yes No
 - 2. Karst voids or channels? Yes No
 - 3. Highly permeable materials such as deposits of cobbles or boulders? Yes No
- F) Does subsurface conditions exist that may convey wastewater to a Water of the State and cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4? Yes No
- G) Depth to groundwater below land surface _____ feet as determined by Trench or boring, Subdivision report, Published groundwater data or Relevant well data.

If the answer is Yes to any of the above subsurface limiting conditions, please show location and note the associated limiting condition type on Site Investigation Map (Item 7).

9 Site Investigation Attachments

#	Attachment Description	Attached?
		<input type="checkbox"/> Yes, total of _____ pages.
		<input type="checkbox"/> Yes, total of _____ pages.
		<input type="checkbox"/> Yes, total of _____ pages.

10 Investigator Certification

- A) Arizona-registered Professional engineer Certification Number: _____ Expiration Date: _____
- B) Arizona-registered Professional geologist Certification Number: _____ Expiration Date: _____
- C) Arizona-registered Sanitarian Registration Number: _____ Expiration Date: _____
- D) A certificate of training from a course recognized by ADEQ

Course Name: _____ Completion Date: _____

- E) Qualifies under another category designated in writing by ADEQ. **Please use Attachment 4 to provide approved Qualification Category & Date Approved.**

Professional Seal

By signing this section, I certify that I am qualified to conduct this investigation as specified in R18-9-A310(H) and have inspected the property identified in Item 3 for purposes of performing a site investigation. I have performed this site investigation in accordance with R18-9-A310 and have completed this investigation to the best of my knowledge.

Printed Investigator Name/

Date of Investigation: _____

Investigator Signature/ _____

Date Signed _____

ATTACHMENT 1 – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION

Facility Address: _____

Parcel Number: _____


Tested by: _____

Depth to Groundwater: **PLEASE REPORT IN ITEM 8.G**

Date Test Completed: _____

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR

Comments:



 Test ____ Test ____ Test ____ Test ____

Professional Seal

ATTACHMENT 1, CONTINUED – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION

Facility Address: _____

Parcel Number: _____

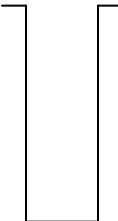
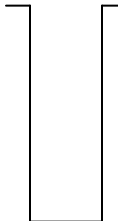
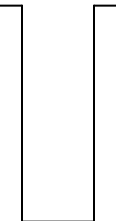
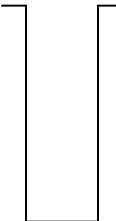
Tested by: _____

Depth to Groundwater: PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

Date Test Completed: _____

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR

Comments:

Test ____ Test ____ Test ____ Test ____

Professional Seal

ATTACHMENT 2 – PERCOLATION TEST DATASHEET

Facility Address: _____	Parcel Number: _____
Test Hole Number/Location: _____	Depth of Test Hole Bottom Below Land Surface (inches): _____
Date Test Complete: _____	Test Hole Cross-section: Please check a box and indicate size <input type="checkbox"/> Diameter _____ inches <input type="checkbox"/> Square _____ inches

Describe the land surface at the top of the Test Hole is (please check one):
 Undisturbed Native Soil Cut Surface Fill Surface Other (describe) _____

SOIL DATA FROM TEST HOLE:

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

TEST HOLE PRESOAKING:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

TEST HOLE PERCOLATION TEST:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T _i (min)	Measured Water Drop (inches)	Percolation Rate, P _i (min/in.)	(T _i + T _{i+1})/2 ΔT(min)	P _{i+1} - P _i ΔP	ΔP/ ΔT
						N/A	N/A	N/A

Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

Stabilized Percolation Rate (from Graph) _____ minutes per inch

PERSON WHO PERFORMED THE TEST:

Name: _____
 Company: _____
 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Professional Seal

ATTACHMENT 2, CONTINUED – PERCOLATION TEST DATASHEET

Facility Address: _____	Parcel Number: _____
Test Hole Number/Location: _____	Depth of Test Hole Bottom Below Land Surface (inches): _____
Date Test Complete: _____	Test Hole Cross-section: Please check a box and indicate size <input type="checkbox"/> Diameter _____ inches <input type="checkbox"/> Square _____ inches

Describe the land surface at the top of the Test Hole is (please check one):
 Undisturbed Native Soil Cut Surface Fill Surface Other (describe) _____

SOIL DATA FROM TEST HOLE:

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

TEST HOLE PRESOAKING:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

TEST HOLE PERCOLATION TEST:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T _i (min)	Measured Water Drop (inches)	Percolation Rate, P _i (min/in.)	(T _i + T _{i+1})/2 ΔT(min)	P _{i+1} - P _i ΔP	ΔP/ ΔT
						N/A	N/A	N/A

Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

Stabilized Percolation Rate (from Graph) _____ minutes per inch

PERSON WHO PERFORMED THE TEST:

Name: _____
 Company: _____
 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Professional Seal

ATTACHMENT 3 – SEEPAGE PIT TEST DATASHEET

Facility Address: _____ Parcel Number: _____
 Test Hole Number _____ Depth of Hole Bottom _____
 /Location: _____ Below Land Surface (feet): _____
 Date Test Complete: _____ Test Hole Diameter (inches): _____

Depth to Groundwater below Pit Terminus (feet): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

SOIL DATA FROM TEST HOLE:

Depth (feet)	Soil Lithology

PRESOAKING:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Water Surface Depth Below Ground Surface (inches)

Total gallons of water added to the Test Hole for presoak _____ gallons.

SEEPAGE PIT TEST:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T _i (min)	Measured Water Drop (inches)	Percolation Rate, P _i (min/in.)	(P _{i+1} - P _i)/P _i * 100%

Stabilized Percolation Rate (from Graph): _____ minutes per inches

PERSON WHO PERFORMED THE TEST:

Name: _____
 Company: _____
 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Professional Seal

ATTACHMENT 3, CONTINUED – SEEPAGE PIT TEST DATASHEET

Facility Address: _____ Parcel Number: _____
 Test Hole Number _____ Depth of Hole Bottom _____
 /Location: _____ Below Land Surface (feet): _____
 Date Test Complete: _____ Test Hole Diameter (inches): _____

Depth to Groundwater below Pit Terminus (feet): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM

SOIL DATA FROM TEST HOLE:

Depth (feet)	Soil Lithology

PRESOAKING:

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Water Surface Depth Below Ground Surface (inches)

Total gallons of water added to the Test Hole for presoak _____ gallons.

SEEPAGE PIT TEST:

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T _i (min)	Measured Water Drop (inches)	Percolation Rate, P _i (min/in.)	(P _{i+1} - P _i)/P _i * 100%

Stabilized Percolation Rate (from Graph): _____ minutes per inches

PERSON WHO PERFORMED THE TEST:

Name: _____
 Company: _____
 Address: _____
 Phone: _____ Fax: _____
 Email: _____

Professional Seal

ATTACHMENT 4 – OTHER INFORMATION

Facility Address: _____	Parcel Number: _____
Date Test Completed: _____	

Other Information pertinent to this Site Investigation Report: Please specify the Report Item related to all Attachments or Other Information provided.

Continued on pages _____ through _____

Prepared by (Please Print): _____

Date Report Completed: _____

ATTACHMENT 4 – OTHER INFORMATION

Facility Address: _____	Parcel Number: _____
Date Test Completed: _____	

Other Information Continued.