

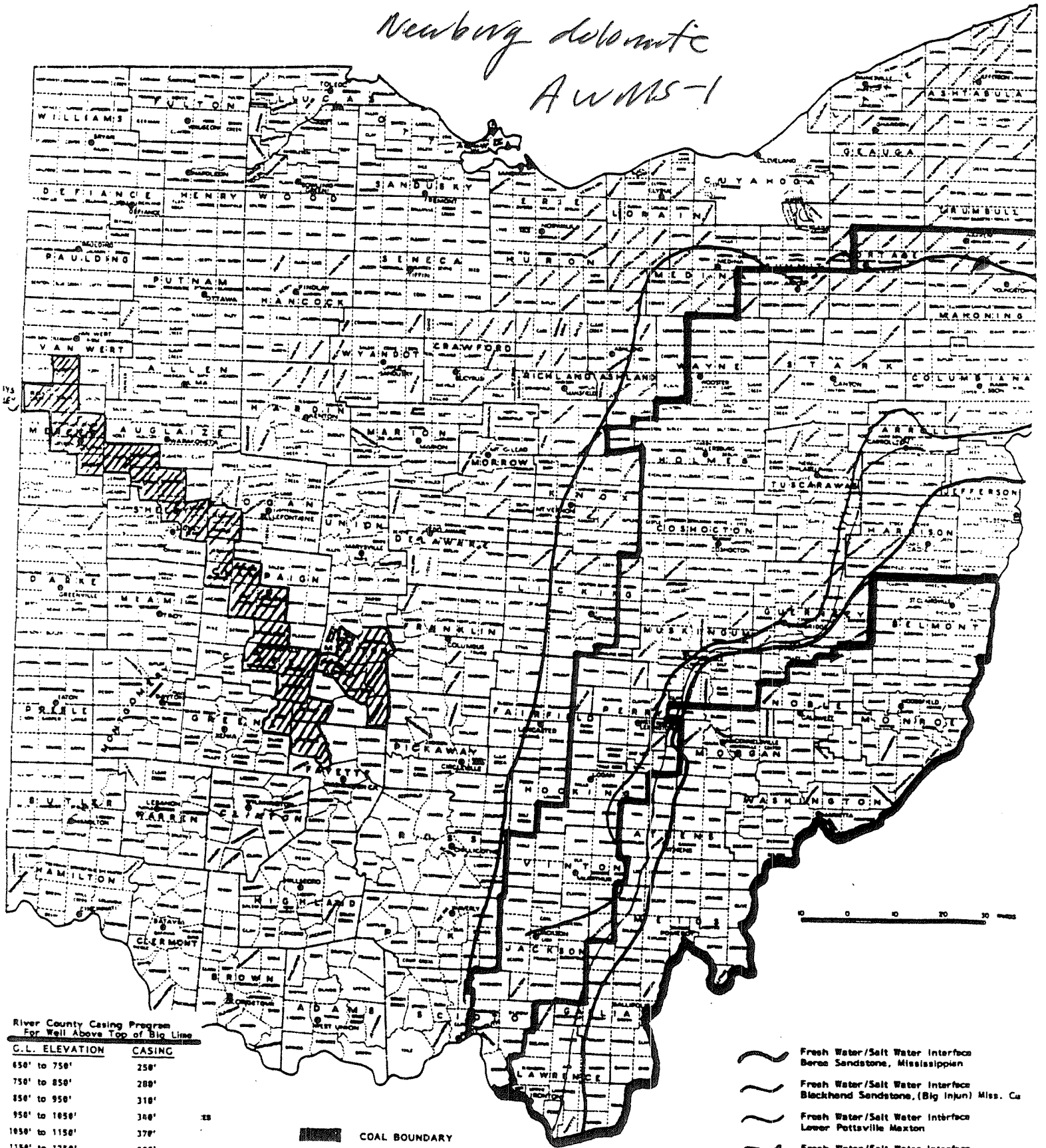
TRUMBULL COUNTY - SUMMER 21, Permit #
APPLICATION CHECKLIST
 New well, AWM15-1
 Netaburg

	Date	Initials
Enter on Agenda	12/27/11	<i>[Signature]</i>
Completeness Review	2/6/12	<i>[Signature]</i>
Date - Time Stamp	12/27/11	<i>[Signature]</i>
Area of Review	2-6-11	<i>[Signature]</i>
Site Evaluation	8-9-12	<i>[Signature]</i>
Permitting Section	12/27/11	<i>[Signature]</i>
Memo to Inspector	7/25/12	<i>[Signature]</i>
Public Notice	08-01-12	<i>[Signature]</i>
Letter	08-01-12	<i>[Signature]</i>
Date Run		
15 Days		
Review Public Notice		<i>[Signature]</i>
Affidavit of Notification	12/27/11	<i>[Signature]</i>
Objections Received		<i>[Signature]</i>
Yes _____ No _____		<i>[Signature]</i>
Public Hearing Date		<i>[Signature]</i>
Chief's Order, if Required		<i>[Signature]</i>
Schematic	7-30-12	<i>[Signature]</i>
Plot on Map	1/30/12	<i>[Signature]</i>
Review by Geologist		<i>[Signature]</i>
Permit Conditions (Same date as permit)		<i>[Signature]</i>
Enter on Computer (Same or later date than Chief's Order)		<i>[Signature]</i>
Enter on Master List	2/6/12	<i>[Signature]</i>
EPA Form	2/6/12	<i>[Signature]</i>
Mail Permit		<i>[Signature]</i>
Update Agenda		<i>[Signature]</i>
File		<i>[Signature]</i>

RECORD OF CONVERSATION

*Urban dully requirements

Trumbull Co. SWW #21, P#
 Newburg dolomite
 A WMS-1



Wentherspiel

APPLICATION NO. aPATT020308

TYPE: Drill New Well

CONAME AMERICAN WATER MGMT SE API

WELL NAME /NO. AWMS-1

1

COUNTY 155 TRUMBULL

INITIALS

DATE

DATE APPLICATION REC'D

pn

12/27/2011

PERMIT FEE AND CHECK NO.

\$1,000.00


1010

RUSH AMOUNT RUSH CHECK NO.

\$0.00

0

APPLICATION ENTERED



12/27/11

APPLICATIONS AND PLATS SENT FOR MINE APPROVAL

2n

12/27/14

COAL APPROVAL RECEIVED

OIL/GAS AFFIDAVIT REC'D

20

URBANIZED AREA NOTIFICATION SENT

**URBANIZED AREA NOTIFICATION
SENT TO INSPECTOR/REC'D BACK**

[Signature]

URBAN MAP REVIEW

[Signature]

SAMPLES: YES **/SPECIAL AREAS**



GEOLOGIST APPROVAL

2

DATA ENTRY /ISSUED

PERMIT: TAKEN _____ MAILED _____

Q

FAX TO:

FINAL MAP CHECK

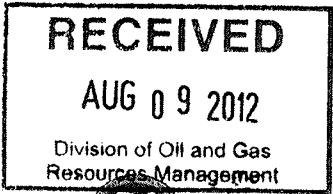
COMMENTS: Urban - Pop = 8,400

Proof Sheet

APPL NUMBER	aPATT020308	URBANIZED AREA ?	<input type="checkbox"/>
OWNER NUMBER	8905	NAME	
OWNER NAME	AMERICAN WATER MGMT SERV LLC		
EXISTING WELL	0		
API PERMIT NO		DISPOSAL PLAN 1	ND
APPL TYPE	NW	DISPOSAL PLAN 2	
TYPE OF WELL	SWD	DISPOSAL PLAN 3	
VARIANCE REQUEST		DISPOSAL PLAN 4	
WELL NAME	AWMS-1	DISPOSAL PLAN 5	
WELL NUMBER	1 (Switzer)	MP Check #	0
PREV/PROPOSED TD	4700		
DRILL UNIT ACRES	101		
TYPE OF TOOL	RTAF		
WELL CLASS	SWD	PROPOSED FORMATIONS	
FIRE PHONE	() - 911	NEWBURG ZONE/LOCKPORT	
MEDICAL PHONE	() - 911	FORMATION	
COUNTY CODE	155		
COUNTY NAME	TRUMBULL		
COAL (Y=-1/N=0)	-1		
CIVIL TOWNSHIP	WEATHERSFIELD	TARG CIVIL TWP	
SURF QUAD	WARREN	TARG QUAD	
Nad 27 SURF ORIG X	2479632	Nad 27 TARG ORIG X	
Nad 27 SURF ORIG Y	551632	Nad 27 TARG ORIG Y	
GROUND ELEVATION	909	TARG ELEV	0
SURF SEC	9	TARG SECTION	
SURF LOT		TARG LOT	
SURF QTR TWP		TARG QTR TWP	
SURF ALLOT		TARG ALLOT	
SURF TRACT		TARG TRACT	
SURF FRACTION		TARG FRACTION	



Ohio Department of Natural Resources
Division of Mineral Resources Management
2045 Morse Rd. Bldg. H-3 – Columbus OH 43229-6693



Urbanized Area Permit Conditions

Application Number	SWIW #21	Permit Number		Inspection Date	07/30/12	Modification Date (if applicable)	
Company		American Water Management Services, LLC.		Lease Name/Well #		AWMS #1	
County		Trumbull		Township		Weathersfield	
Section/Lot		Section 9		Urban Area		City of Niles	
Inspected By		Stephen Ochs					
Accompanied By							

Directions to Location	From North Road and Main Street in Niles; 0.4 mile west on N Main Street; south side of the street
------------------------	--

ITEM	LEASE ROAD, WELL SITE CONSTRUCTION	Comments:
1	Tree/Brush Removal/Disposition	Some brush
2	Topsoil Removal/Stockpiles/Placement	Soil will be stockpiled on location
3	Erosion/Sediment Control (Silt Fence, Berms)	Silt fence used as needed
4	Drainage Controls (Diversion Ditches, Culverts, Waterways, Crossings)	N/A
5	Signage	As required by HB278
6	Apron/Culverts/Road Material	Existing access road
7	Pull Off Area	Well site
8	Parking	Well site
9	GPS – Access Road	N 41.19663 W 80.77358
10	GPS – Well Stake	N/A
11	GPS – Tank Battery	N/A

ITEM	DRILLING CONSIDERATIONS	Comments:		
12	Noise Mitigation (Mufflers, Extra Frac Tanks, Tarps)	Appropriate muffler		
13	Rig Type	Fluid rotary		
14	Is a Blow-out Preventor required?	X	Yes	No
	If No, explain:			
15	Equipment Placement/ Orientation (Rig/ Frac Tanks/ etc.)	Recommend the rig be placed North/South		
16	Drilling Pits (Placement/Orientation)	Recommend the pits be placed West		
17	Fencing (Pits/Entire Location)	Existing fence around entire location		
18	Flood Plain	None		
19	Mine Voids	None		
20	Verify Water Wells Within 300'	None		
21	Verify Structures Within 500'	One business (industrial) on same property		
22	Verify Streams and Drainage	Mahoning River tributary approximately ½ mile to the West		

ITEM	RESTORATION	
23	Pit Closure – (Standard/ Solidification/ Off-Site Disposal – state time frame)	Once total depth has been reached, the drilling equipment will be removed and pits will be solidified within 14 days.
24	Site Specific Time Frame For Restoration	All restoration will be completed within three months after drilling is commenced.
25	Erosion/Sediment Control	Maintain until preliminary restoration is completed
26	Drainage Control	N/A

ITEM	PRODUCTION	Comments:		
27	Is the Access Road Gate required?	X	Yes	No
	If No, explain:			
28	Landscaping/Screening (Wellhead, Tank Battery) (Waiver Attached if applicable)	Existing screening acceptable		
29	Fencing (Wellhead, Tank Battery) (Waiver Attached if applicable)	Existing fence around entire location acceptable		

WAIVERS	Comments:		
Is the Company required to submit a waiver?	Yes	X	No
If yes, submit the following waiver requests:			

Is the Company required to submit revised drawings?	Yes	X	No
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THE FOLLOWING ITEMS HAVE BEEN CHANGED FROM THE ORIGINAL APPLICATION:



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Richard J. Simmers, Chief
Division of Oil and Gas Resources Management
2045 Morse Road, Bldg. F-2
Columbus, OH 43229-6693
Phone (614) 265-6922 Fax (614) 265-6910

August 1, 2012


Mr. Kenneth J. McMahon
American Water Management Services, LLC,
One American Way
Warren, OH 44484-5555

RE: Public Notification for SWIW application for Trumbull County, Weathersfield Twp., two new wells, American Water Management Services, LLC, AWMS-1 and AWMS-2 injection wells.

Dear **Mr. McMahon**:

As outlined in Rule 1501: 9-3-06 (H) (1) of the Ohio Administrative Code, please consider this letter as notification from the Division for you to proceed with the public notice. Enclosed, please find a copy of the notice you will need to have run in the newspaper of general circulation in the area of the proposed injection well. **The public notice must be run for no less than five consecutive days. After running this notice in the newspaper, please send me the original proof-of-publication from the newspaper as soon as possible.**

If you have any questions regarding this matter, please feel free to contact me at (614) 265-1032.

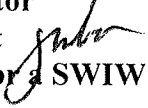
Sincerely,

Tom Tomastik, Geologist
UIC Section
Division of Oil and Gas Resources Management
2045 Morse Road, F-2
Columbus, Ohio 43229-6693

Cc: File

PUBLIC NOTICE

American Water Management Services, LLC, One American Way, Warren, Ohio (330) 856-8800 is applying to permit two wells for the injection of brine water produced in association with oil and natural gas. The location of the proposed injection wells are: AWMS-1 and AWMS-2 at Section 9, Weathersfield Township, Trumbull County, Ohio. The proposed AWMS-1 and AWMS-2 wells will inject into Newburg Zone/Lockport Formation and Knox Dolomite & Mt. Simon Sandstone at depths of 4450 to 4700 feet and 7300 to 9100 feet, respectively. The average injection is estimated to be 1000 barrels per day for AWMS-1 and 2200 barrels per day for AWMS-2 with estimated maximum injection pressure of 1625 psi and 1680 psi, respectively. Further information can be obtained by contacting American Water Management Services, LLC or the Division of Oil and Gas Resources Management. The address of the Division is: Ohio Department of Natural Resources, Division of Oil and Gas Resources Management, 2045 Morse Road, Building F-2, Columbus, Ohio 43229-6693, (614) 265-6633. For full consideration, all comments and objections must be received by the Division, in writing, within fifteen calendar days of the last date of this published legal notice.

INTER-OFFICE MEMO

TO: Stephen Ochs, Mineral Resources Inspector
FROM: Glenda M. Besana-Ostman, Geologist 
SUBJECT: Application and Site Evaluation for a SWIW permit
DATE: July 25, 2012

The Division of Oil and Gas Resources Management has received an application for the proposed saltwater injection well as described below:

OPERATOR: AMERICAN WATER MANAGEMENT SERVICES, LLC
WELL NAME & NUMBER: AWMS #1 – NILES INJECTION SITE
PERMIT NUMBER: NEW WELL, SWIW # 21
LOCATION:
AWMS #1: 562' SL & 2158' WL of SEC 9, Weathersfield Twp., Trumbull County
PROPOSED INJECTION ZONE: NEWBURG ZONE/LOCKPORT FORMATION
DATE RECEIVED: DECEMBER 27, 2011

Please inspect proposed site and evaluate for any potential water wells or surface bodies of water within close proximity that would require any additional permit conditions for the construction of the SWIW surface facilities. Please e-mail me a copy of the site inspection report with any recommendations.

AWMS No. 1

Weathersfield Township

Trumbull County

Location: N 561654.7460/ E 2443201.3127

Elevation: Approximately 910' MSL

EXHIBIT 1

SUPPLEMENT TO APPLICATION

PERMIT FOR SALTWATER INJECTION WELL (Form 210)

31) Proposed Injection Zone

Geologic Formation: Newburg Zone/Lockport Formation

Injection Interval: 4,450' to 4,700'

Geologic Description: Dolomite

RECEIVED

DEC 27 2011

32) Well Construction and Operation

Casing and Cement Program: See the attached Well Detail. Casing sizes, types, set depth, cement quantities, and cement tops are described.

Proposed method for testing casing: The 8-5/8" casing will be pressure tested to 1,000 psi at the conclusion of the cementing process. Additionally, there will be a BOP test on the casing to 750 psi prior to drilling off the casing shoe into the open borehole. The 8-5/8" casing will be tested to 1,600 psi as a part of a mechanical integrity test. The test will be witnessed by an ODNR Inspector. The annular space between the 4-1/2" tubing and the 8-5/8" casing will be pressurized up to a minimum of 1,600 psi and monitored for a minimum of 30 minutes. A pressure chart and injectivity data will be submitted to the ODNR. The 4.5" injection string will also be equipped to receive a set mechanical plug to allow testing without disturbing the packer. The 4.5" injection string will also be pressurized up to a minimum of 1,600 psi and monitored for a minimum of 30 minutes. This pressure data will be included with the ODNR submittal. The pressure on the annular space will be continually monitored electronically once injection begins to assure the mechanical integrity of this annular space.

Description of the proposed method for completion and operation of the injection well: The well will be equipped with 8-5/8" casing set and cemented above the injection horizon. Approximately 250' of 7-7/8" open hole will exist below the 8-5/8" casing. This open hole interval will be acidified with a 15% HCL solution to enhance the porosity and permeability of the injection horizon. Injection into this horizon will be accomplished by pumping filtered and treated water down the 4-1/2" injection tubing into the disposal horizon. This tubing is isolated from the 8-5/8" casing by means of a mechanical packer set. The attached Well Detail illustrates the well configuration.

Description of proposed unloading, surface storage, and spill containment facilities: See figures for diagrams and descriptions.

33) Proposed Injection Volumes

Indicate the estimated amount of saltwater to be injected into the proposed injection well per day.

Average: 1,000 bbl/day

Maximum: 2,000 bbl/day

Indicate the method to be used to measure the actual amount of saltwater injected into the well: Electronic measurement instrumentation will be installed at the discharge of the injection pump. This volume along with the injection pressure at the pump, wellhead, and the annular pressure will be continually monitored and electronically recorded. Remote access to the data will be available. Fluids hauled into the facility will also be measured and monitored for comparison and reporting.

34) Proposed Injection Pressures

Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:

Average: 400 psi

Maximum: 1,025 psi

Indicate the method to be used to measure the actual daily injection pressure: Pressure transducers and transmitters will be installed at the wellhead on the injection tubing and the tubing casing annulus. They will be continuously monitored and electronically recorded. Controls will be installed on the pump to automatically shutdown the pump if an over pressure or under pressure condition exists.

35) Proposed Corrective Actions

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review: There are currently 16 production wells within the area of review. They are all producing from the Clinton Sandstone. In the event injection activities impact one of these production wells, corrective actions will be initiated. The proposed corrective actions may include the following:

- Mobilize a workover rig onto the impacted well,
- Remove the production tubing,
- Set a bridge plug below the Newburg Injection Horizon,
- Perforate the production casing below the Newburg Injection Horizon,
- Circulate cement to surface,
- Drill out cement in production casing,
- Pressure test the production casing,
- Drill out bridge plug if the pressure test is successful,
- Re-install production tubing back in production casing,
- Swab well, and

- Turn well back in line.

Other option may include the purchase the effected well and plugging out the impacted well.

36) Map

See attached figures.

37) Schematic Drawing of Subsurface Construction

See attached Well detail.

AWMS No. 1

Weathersfield Township

Trumbull County

Location: N 561654.7460/E 2443201.3127

Elevation: Approximately 910' MSL

$$124 \times 84 \times 0.0148$$

EXHIBIT 2

$$= 154.15 \text{ bbls} \times 48$$

SUPPLEMENT TO APPLICATION

$$= 7399.5 \text{ bbls.}$$

PERMIT FOR SALTWATER INJECTION WELL (Form 210)

of capacity

Description of the proposed unloading, surface storage, and spill containment facilities:

Water to be injected by this facility will be initially off-loaded into a lined and diked surface impoundment or alternatively directly into a storage tank. The water stored in the impoundment will then be transferred into a series of tanks within a diked and lined containment area. Figure 2 presents the general layout of the facility.

The storage impoundment will be 200' by 50' by 7.5' deep and have a capacity of approximately 8,900 bbl. The impoundment will be constructed with a double composite liner (compacted clay and two 40-mil geomembranes) impoundment with a geocomposite (double sided GSE Fabric Net with 200 mil net, or equivalent) as a drainage/monitoring layer. The liner system will include 12 inches of compacted low permeability clay. The geocomposite will serve as the leak detection layer and will outlet into a sump at the south end of the pond. The sump will drain via a 4" pipe into a manhole outside the impoundment for observation. Figure 3 presents details for the impoundment. The impoundment will be constructed in conformance with the Quality Assurance/Quality Control Plan presented in Attachment A.

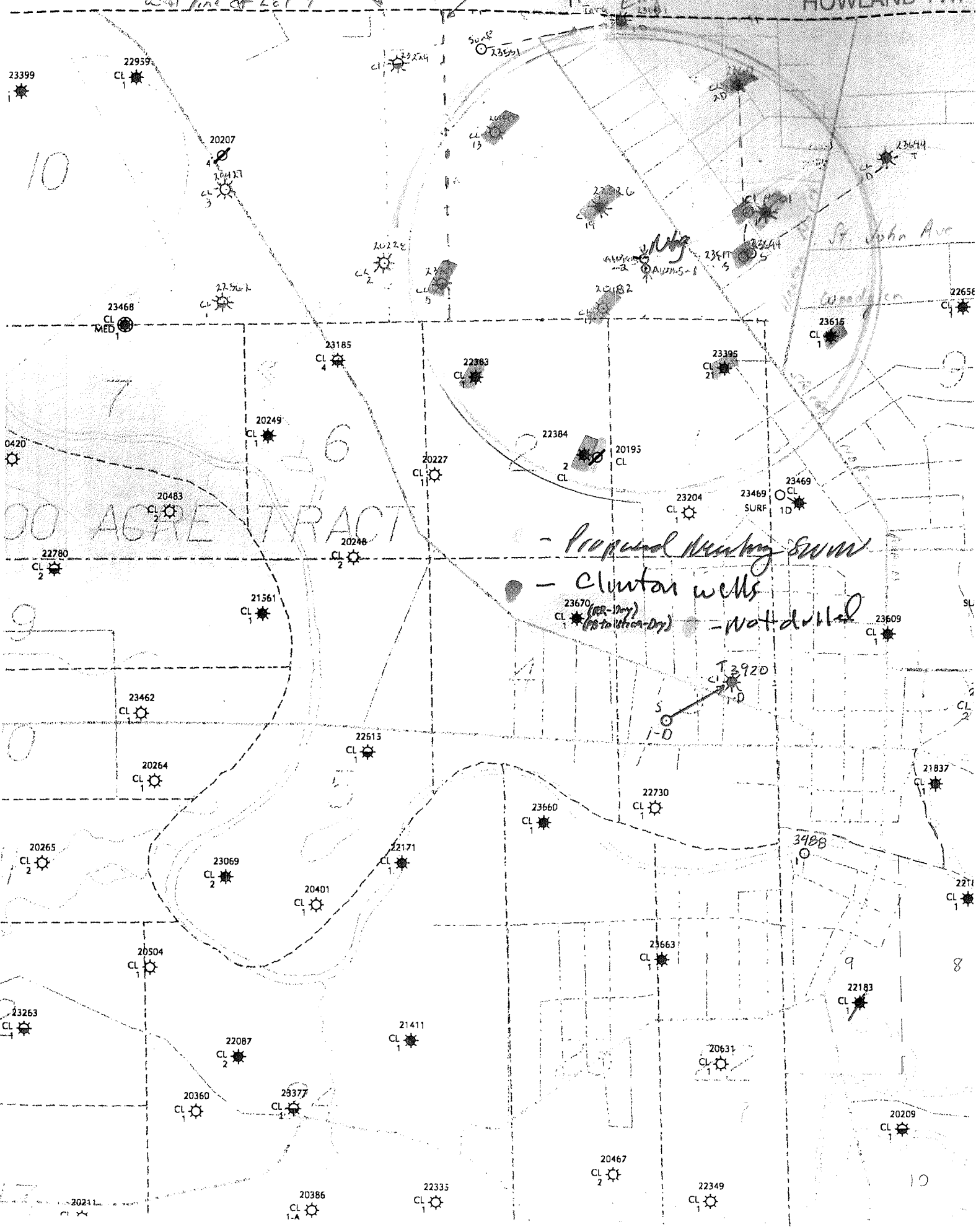
Tankage associated with the facility will total approximately 5000 bbl. The tankage will include a 200 bbl steel condensate tank, a 4,000 bbl (approximate) steel/glass lined primary storage tank, and two 400 bbl steel polished brine tanks. The tankage will be contained within a 124' by 84' by 4' deep diked containment area. Empty, this diked area has a capacity of approximately 5,800 bbl. Allowing for the displacement of the tanks within the diked area of 800 bbl, the diked capacity will equal 5,000 which equal the total facility tankage. The containment area will be constructed with a single liner (40-mil geomembrane) over 12 inches of low permeability compacted clay. Twelve inches of protective cover will be placed over the liner system. The cover material in the base of the diked area will consist of sand and gravel with topsoil to be used on the side slopes. A sump will be installed inside the diked area to remove precipitation that may enter this area. This water will be removed from the containment area via a sump pump and uploaded into the 400 bbl polished brine tanks. Figure 4 presents details for the unloading and containment area. The containment area will be constructed in conformance with the Quality Assurance/Quality Control Plan presented in Attachment A.

A concrete unloading pad, presented on Figure 4, will be constructed adjacent to the diked containment area. The pad will be built to allow trucks to pull in to an off-load valve that will be controlled by magnetic locks that require a swipe magnetic key to unlock (or similar secure

system). Brine from the trucks will initially be directed through an oil/water separator. The oil will be directed to the condensate tank and the raw brine directed to the impoundment or storage tank depending on suspended solids content and operational requirements. The pad will be sloped to a horizontal trench drain which will direct the spillage to a collection sump. The fluid collected in the sump will again be directed into the aforementioned oil/water separator and either directed to the condensate tank or the raw brine impoundment. Visual and audible alarms will be installed to notify the driver and operator of any pressure issues associated with the oil/water separator, and if the tank or impoundment are nearing capacities. Pressure and level controls will be wired to the offload valves. If an alarm condition occurs, the valves will automatically shut off.

The entire operation will be monitored round the clock both by operators at the facility and electronic monitoring. Video surveillance is also expected to be installed to provide additional monitoring.

HOWLAND TWP



OPERATOR American Water Management Services, LLC

COUNTY TRUMBULL

TOWNSHIP WEATHERSFIELD

P & A	PM	Permit Number	Casing Program / Comment	Well Log and/or Method of Plug
<input type="checkbox"/>	<u>Mhg</u>	<u>New well</u>	20" - 100' - cemented to surface	
			1 3/8" - 600' - cement to surface	
			8 5/8" - 4450' - cement to surface	
<input type="checkbox"/>	<u>CL</u>	<u>355'</u>	8 5/8" - 365 feet and cemented to surface	
			4 1/2" - 5325' - 500 sks, cement = Calculated fill-up = 2590' - (TDC = 2735')	
<input type="checkbox"/>	<u>CL</u>	<u>3647</u>	8 5/8" - 328' - cemented 200 sks.	
			4 1/2" - 5210' - cement w/ 390 sks. Calculated fill-up = 2020' - (TDC = 3190')	
<input type="checkbox"/>	<u>CL</u>	<u>2526</u>	8 5/8" - 419' - cemented w/ 150 sks.	
			4 1/2" - 4777' - cemented w/ 175 sks. Calculated fill-up = 906' - (TDC = 3871')	
<input type="checkbox"/>	<u>CL</u>	<u>180</u>	8 5/8" - 380' - cemented w/ 150 sks.	
			5 1/2" - 4764' - cemented w/ 150 sks. Calculated fill-up = 1021' (TDC = 3743')	
<input type="checkbox"/>	<u>CL</u>	<u>3301</u>	8 5/8" - 351' - cemented to surface	
			4 1/2" - 4766' - cemented w/ 150 sks. Calculated fill-up = 777' (TDC = 3989')	
<input type="checkbox"/>	<u>CL</u>	<u>2383</u>	8 5/8" - 338' - cemented to surface	
			4 1/2" - 4798' - cemented w/ 150 sks. 50 ft POZ	
			Calculated fill-up = 790' (TDC = 4000')	
<input type="checkbox"/>	<u>CL</u>	<u>2384</u>	8 5/8" - 341' - cemented to surface	
			4 1/2" - 4802' - 150 sks. 102 ft POZ	
			Calculated fill-up = 790' (TDC = 4012')	

NOTE: Proposed injection well should be circumscribed with appropriate radius and all wells clearly labeled and identified. A legend depicting color code is required.

Tomastik, Tom

From: Baker, Mike [Mike.Baker@epa.state.oh.us]
Sent: Friday, March 09, 2012 2:02 PM
To: Tugend, Thomas
Cc: Tomastik, Tom; Eggert, Michael; Lowe, Chuck
Subject: Class II Permiot Reviews


Attachments: ODNR Permit Review Summary 2.docx

Ohio EPA Division of Drinking and Ground Waters has completed its review of nine (9) Class II underground injection well permits.

Our review of the Class II permits focused on well construction relative to the protection of underground sources of drinking water (USDW) and the location of the surface facilities relative to public water system source water protection areas and other sensitive hydrogeologic settings.

None of the reviewed Class II permits are within 2,000 feet of a public water system well or within a source water protection area. However, we do have a couple overarching comments concerning the surface casing of the well construction. More specifically, our review assessed the placement of surface casing and cement relative to the lowest most USDW. Ohio EPA would recommend that a class A cement with appropriate additives be specified as well as the use of centralizers to assure an adequate bond.

Attachment A is a summary of our comments concerning each permit application. Please contact Chuck Lowe of my staff at 614-644-2752 if you have questions on the specific comments.

This message was secured by Zix  (R).

3/9/2012

Attachment A: ODNR Permit Review Summary

9 permits reviewed, including:

- 6 new drills; and,
- 3 conversions of existing wells.

None of the Class II SWDWs reviewed are within 2,000 feet of a PWS well or within a protection area.

New Wells

1. Muskingum Co., Jackson Twp. OOGC #1 Black Run Disposal Well
 - Surface casing depth and amount of cement appear adequate. The type of cement, and number and location of centralizers used on the surface casing should to be specified. Lack of this information limits our review.
 - The injection zone is the Knox through the Mt. Simon; however, completion schematic shows only the Mt. Simon as perforated. The injection zone perforations should be corrected to reflect the revised injection zone.
 - Well surface construction appears sufficient.
2. Mahoning Co., Springfield Twp. D&L #7 Mohawk Printup
 - Surface casing depth and amount of cement appear adequate. The permit to drill specifies 350 sacks of superlite cement – Ohio EPA recommends that Class A be used instead. The number of centralizers and their location should be specified. The lack of this information limits our review.
 - The well is located outside of the Youngstown area of concern.
 - Well surface construction appears sufficient.
3. Mahoning Co., Youngstown Twp. D&L #8 Mohawk Meenchan
 - Well construction comments are the same as for the #7 Mohawk Printup well.
 - The #8 Mohawk Meechan well is within the AOR that has experienced seismic activity. This should be evaluated in siting, construction and injection requirements.
4. Muskingum Co., Union Twp. 1960 Well Services #1 C. Goff
 - Surface casing and amount of cement appears adequate. The type of cement, and number and location of centralizers used on the surface casing should to be specified. Lack of this information limits our review.
 - The plat map shows two small wetland areas that are adjacent to the well and offloading pad. The permittee should be made aware of associated regulatory requirements.
 - Well surface construction appears sufficient.
5. Trumbull Co., Weathersfield Twp. American Water Mgt. #1 AWM
 - Both surface and injection casing depths and cement appear adequate. The type of cement, and number and location of centralizers used on the surface casing should to be specified. Lack of this information limits our review.
 - Open hole disposal into the “Newburg”. There are sixteen existing “Clinton” wells within the AOR that are likely un-cemented above the “Clinton” cement top and the base of the surface casing. These well bores could act as a conduit for fluid migration (i.e. either brine or brine displacing formation waters).

6. Trumbull Co., Weathersfield Twp. American Water Mgt. #2 AWM
 - Surface casing depth appears adequate and cemented to surface. The type of cement, and number and location of centralizers used on the surface casing should to be specified. Lack of this information limits our review.
 - The injection casing cement top is shown to surface on the diagram, but states the cement top is at 4000 feet. This should be clarified because the plat map show 112 feet between the two disposal wells (same concerns as outlined in #5).

Converted Wells

1. Athens Co., Rome Twp., D.T. Atha #1 M. Frost
 - Surface casing depth appears adequate; however, no inspectors report to verify cement to surface (315 sacks used on completion report). The surface cement should be verified.
 - Operator proposes to squeeze off the existing perfs in the Berea and Ohio Shale, but doesn't show the proposed injection zone perfs.
 - Injection casing and tubing construction depths don't agree with the well schematic diagram. This should be resolved.
2. Knox Co., Morgan Twp., Knox Energy #2 Harstine Trust
 - Surface casing and cement job appear adequate.
3. Morgan Co., Marion Twp., Broad Street Energy #102 Cook
 - Surface casing and cement volume (90 sacks) appear adequate.
 - Well surface construction appears adequate.

#1010
\$1000.00

APPLICATION FOR A PERMIT (Form 1)
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
2045 Morse Road, Building H-3
COLUMBUS, OHIO 42229-6693
(614) 265-6633

SEE INSTRUCTIONS ON PAGE 2 (BACK)

AP4020308

1. I, We (applicant) <u>American Water Management Services LLC</u> (address) <u>One American Way, Warren, Ohio, 44484</u> Hereby apply this date <u>December 23</u> , 2011, for a permit to: <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> Reissue (check appropriate blank) <input checked="" type="checkbox"/> Drill New Well <input type="checkbox"/> Drill Directionally <input type="checkbox"/> Drill Horizontally</div><div><input type="checkbox"/> Revised Location <input type="checkbox"/> Plug Back <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Orphan Well Program</div><div><input type="checkbox"/> Convert <input type="checkbox"/> Deepen <input type="checkbox"/> Reopen <input type="checkbox"/> Temporary Inactive</div></div>		2. Owner #: <u>8905</u> Phone #: <u>330-856-8800</u>
3. TYPE OF WELL: <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> Oil & Gas <input type="checkbox"/> Stratigraphic test <input type="checkbox"/> Solution Mining * <input type="checkbox"/> Input/Injection</div><div><input type="checkbox"/> Annular Disposal <input type="checkbox"/> Gas Storage <input type="checkbox"/> Enhanced Recovery * <input type="checkbox"/> Water Supply</div><div><input checked="" type="checkbox"/> Saltwater Injection <input type="checkbox"/> Other (explain): _____ <small>* if check, select appropriate box below:</small> <input type="checkbox"/> Observation <input type="checkbox"/> Production/Extraction</div></div>		
4. MAIL PERMIT TO:	20. TYPE OF TOOLS: <div style="display: flex; justify-content: space-between;"><div><input type="checkbox"/> Cable <input type="checkbox"/> Cable/Air Rotary <input type="checkbox"/> Cable/ Fluid Rotary <input type="checkbox"/> Cable/Air/Fluid Rotary</div><div><input type="checkbox"/> Air Rotary <input checked="" type="checkbox"/> Air/Fluid Rotary <input type="checkbox"/> Fluid Rotary <input type="checkbox"/> Service Rig</div></div>	
5. COUNTY: <u>Trumbull</u> 6. CIVIL TOWNSHIP: <u>Weathersfield</u> 7. SECTION: <u>9</u> 8. LOT: _____ 9. FRACTION: _____ 10. QTR TWP: _____ 11. TRACT/ALLOT: _____ 12. WELL #: <u>1</u> 13. LEASE NAME: <u>AWMS-1</u> 14. PROPOSED TOTAL DEPTH: <u>4,700'</u>	21. PROPOSED CASING PROGRAM: 20" Conductor minimum of 60' (if air); 13-3/8" surface casing minimum of 600' (cement circulated to surface); 8-5/8" production casing minimum of 4,450' (cement circulated to surface); 4-1/2" tubing set at 4,400'.	
15. PROPOSED GEOLOGIC FORMATION: <u>Newburg Zone/Lockport Formation</u>	22. FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS (closest to well site): Fire: <u>911</u> Medical: <u>911</u>	
16. DRILLING UNIT IN ACRES (must be same as acres indicated on plat): <u>101 Acres</u>	23. MEANS OF INGRESS & EGRESS: Township Road: <u>N Main Street</u> County Road: _____ Municipal Road: _____ State Highway: <u>169</u>	
17. IF PERMITTED PREVIOUSLY: API #: _____ OWNER: _____ WELL #: _____ LEASE NAME: _____ TOTAL DEPTH: _____ GEOLOGICAL FORMATION: _____	24. IS THE WELL LOCATION OR THE PRODUCTION FACILITIES WITHIN AN URBANIZED AREA AS DEFINED BY 1509.01(Y)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
18. IF SURFACE RIGHTS ARE OWNED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES Division Name: _____ Division Phone: _____		
19. LANDOWNER ROYALTY INTEREST: Is There An Attached List? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Name: <u>Gearmar Properties, Inc.</u> Address: <u>PO Box 209, Portersville, PA 16051</u> Name: _____ Address: _____ Name: _____ Address: _____		

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and compete, to the best of my knowledge.

I, the undersigned, further depose and state that i am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I, the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC). I, the undersigned, further depose and state that all notices required by 1509.06 (A) (9) ORC for this application have been duly provided by me. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required by Section 1509.13, ORC, have been given.

That I hereby agree to conform with all provisions of Chapter 1509., ORC, and chapter 1501., ORC, and all orders and conditions issued by the chief, division of Oil and Gas Resources management.

Signature of Owner/ Authorized Agent Kenneth J. McMahon
Name (Type or Print) Kenneth J. McMahon Title President

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this the 23rd day of December, 20 11
Angela K. Marimpietri
(Notary Public)

DNR 5619 (Rev. 10/2011)



ANGELA K. MARIMPIETRI
Notary Public - State of Ohio
My Commission Expires 9/26/2015

9/26/2015
(Date Commission Expires)

SUPPLEMENT TO APPLICATION
PERMIT FOR A SALTWATER INJECTION WELL (Form 210)

Ohio Department of Natural Resources, Division of Oil and Gas Resources Management
2045 Morse Road, Bldg H3
Columbus, OH 43229-6693

AREA OF REVIEW. An application for a saltwater injection well (SWIW) will be evaluated on the basis of an "area of review" surrounding the proposed well. The area of review for wells in which injection of greater than two hundred barrels per day is proposed shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-half mile. The area of review for wells in which a maximum injection of two hundred barrels per day or less is proposed shall be the area circumscribed by a circle with the center point at the location of the injection well and a radius of one-quarter mile.

31. PROPOSED INJECTION ZONE

Geologic Formation: Newburg Zone/Lockport Formation
Injection Interval: From: 4,450 feet to 4,700 feet
Geologic description of injection zone: Dolomite

32. WELL CONSTRUCTION AND OPERATION

- A. Description of the proposed casing and cement program for new wells, or of the casing, cementing or sealing with prepared clay for existing wells to be converted.
Casing and Cement Program: See Attached Well Detail for AWMS No. 1. Casing sizes, types, set depths, cement quantities and cement tops are described.
- B. Proposed method for testing the casing:
See attached "Exhibit 1" Supplement to Application.
- C. Description of the proposed method for completion and operation of the injection well:
See attached "Exhibit 1" Supplement to Application.
- D. Description of the proposed unloading, surface storage, and spill containment facilities:
See "Exhibit 2" for diagrams and descriptions.

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33. PROPOSED INJECTION VOLUMES

- A. Indicate the estimated amount of saltwater to be injected into the proposed injection well per day:
AVERAGE: 1,000 bbl/day MAXIMUM: 2,000 bbl/day
- B. Indicate the method to be used to measure the actual amount of saltwater injected into the well:
Electronic monitoring will be installed at the discharge of the injection pump. This volume along with the injection pressure at the pump, wellhead, and annular pressure will be monitored (see attached "Exhibit 1").

34. PROPOSED INJECTION PRESSURES

- A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:
AVERAGE: 400 psi MAXIMUM: 1,025 psi
- B. Indicate the method to be used to measure the actual daily injection pressure:
Pressure transducers and transmitters will be installed at the wellhead on the tubing and the tubing casing annulus. They will be continuously monitored and data stored electronically (see attached "Exhibit 1").

35. PROPOSED CORRECTIVE ACTION

Explain any corrective action proposed for wells penetrating the proposed injection formation or zone within the area of review:
There are currently 16 production wells within the area of review. They are all producing from the Clinton Sandstone. In the event injection activities impact one of these production wells, corrective actions will be initiated. The proposed corrective actions are presented in attached "Exhibit 1".

36. **MAP.** Each application for a permit shall be accompanied by a map or maps showing and containing the following information:
- The subject tract of land on which the proposed injection well is to be located.
 - The location of the proposed injection well on the subject tract established by an Ohio registered surveyor showing the distances in feet from the proposed well site to the boundary lines on the subject tract;
 - The geographic location of all wells, penetrating the formation proposed for injection regardless of status, within the area of review;
 - All holders of the land owner's royalty interest of record, or holders of the severed oil and gas mineral estates of record in the subject tract,.
 - All owners or operators of wells producing from or injecting into the same formation proposed as the injection formation.
37. **SCHEMATIC DRAWING OF SUBSURFACE CONSTRUCTION.** Label the schematic drawing below indicating size and setting depth of surface casing, intermediate (if any) and production casings; amount of cement used, measured or calculated tops of cement; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval. If the proposed input well design is substantially different from the schematic below, attach on a separate sheet a schematic of your proposal labeled with the above information.

SCHEMATIC OF SUBSURFACE CONSTRUCTION

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38. Public notice of an application for an enhanced recovery project is required by law. In addition, the applicant must submit, on an attached sheet, a list of the names and address of those persons required to receive personal notice in accordance with Rule 1501:9-5-05(E)(1), of the Ohio Administrative Code.

After submitting the application, and after a determination by the Division that it is complete as required by the rules of the Division, a legal notice must be published by the applicant in a newspaper of general circulation in the area of review. The legal notice must contain the information described in Rule 1501:9-5-05(E)(1) of the Ohio Administrative Code. A copy of the notice must be delivered to all owners or operators of wells within the area of review producing from or injecting into the same formation proposed as the injection formation. Proof of publication, publication date, and an oath as to the delivery to those entitled to receive personal notice under this method must be filed with the Division within thirty days after the Division determines that the application is complete.

In addition, notice of all applications for enhanced recovery projects will be published in the Division's Weekly Circular.

The undersigned hereby agrees to comply with all provisions for an enhanced recovery project as required by Chapter 1501:9-5 of the Ohio Administrative Code. In addition, the undersigned deposed and says that he shall conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all orders and rules issued by the Chief, Division of Mineral Resources Management.

Owner/ Authorized Agent (Type or Print) American Water Management Services, LLC; Kenneth J. McMahon

Signature of Owner/Authorized Agent Kenneth J. McMahon Title President

Permanent Address of Home Office One American Way, Warren, Ohio 44484

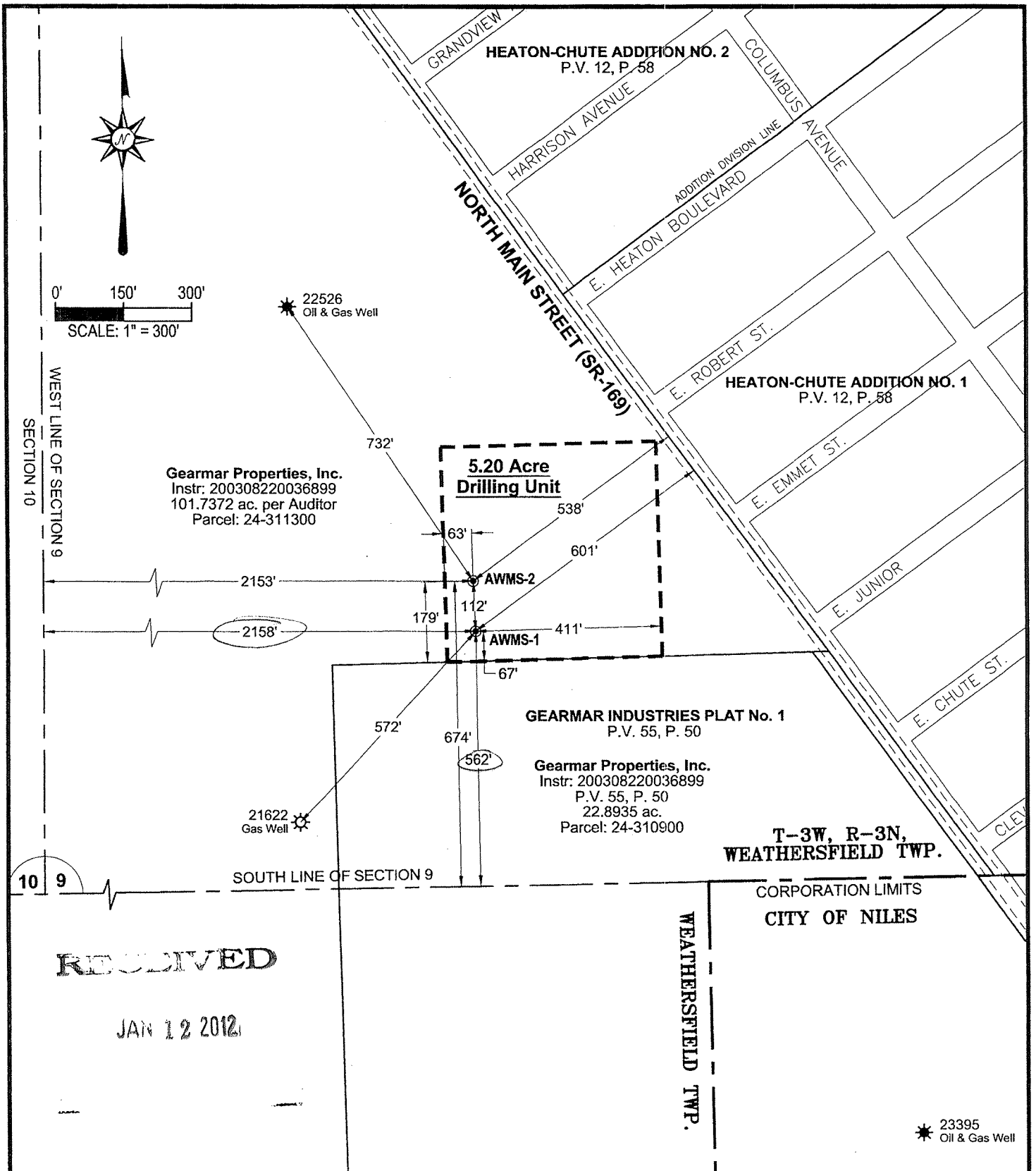
If signed by Authorized Agent, a certificate of appointment of agent must be on file with the Division.

Sworn to and subscribed before me this the 23rd day of December, 20 11



ANGELA K. MARIMPIETRI
Notary Public - State of Ohio
My Commission Expires 9/26/2015

Angela K. Marimpietri
(Notary Public)
9/26/2015
(Date Commission Expires)



AWMS-1

STATE PLANE	GEOGRAPHIC
NAD 83 - OH (N)	NAD 83
X: 2443198	Lat: 41.1954141°
Y: 561654	Lon: -80.7749721°
Elev: 909 (NAVD 88)	

- ☒ Injection Well
☒ New Location

AWMS-2

STATE PLANE	GEOGRAPHIC
NAD 83 - OH (N)	NAD 83
X: 2443193	Lat: 41.1957206°
Y: 561766	Lon: -80.7749819°
Elev: 909 (NAVD 88)	

- ☒ Injection Well
☒ New Location

AWMS-1 NAD 27 NORTH
X: 2,474,657
Y: 561,622

562' SL & 2158' WL OF SECT 9 5.2 AC NB6/LCKP - SW1W - RT

BAIR, GOODIE AND ASSOCIATES, INC.

153 NORTH BROADWAY, NEW PHILADELPHIA, OHIO
TELEPHONE: (330) 343-3499, FAX: (330) 343-9505

Company: American Water Management Services LLC
Address: One American Way, Warren, Ohio 44484
Lease Name: Niles Injection Site **Drilling Unit:** 5.20 acres
Well(s): AWMS-1 & AWMS-2

Quad: Warren **Subdivision:** Connecticut Western Reserve
Location: Section 9, T-3N, R-3W
Twp: Weathersfield **County:** Trumbull
Surveyor: FEB **Draftsman:** KT **Date:** 01.10.2011

MAP

Showing Proposed New
Location or Abandoned Well
State of Ohio
Dept. of Natural Resources
Division of Oil & Gas
Fountain Square,
Columbus, Ohio 43224

CERTIFICATE OF SURVEYOR

I, the undersigned, hereby certify that this map is true and correct as required by the
General Code of Ohio and that there are no production wells within 570 feet and no
roads, streams, or dwellings within 500 feet of this location, except as shown.

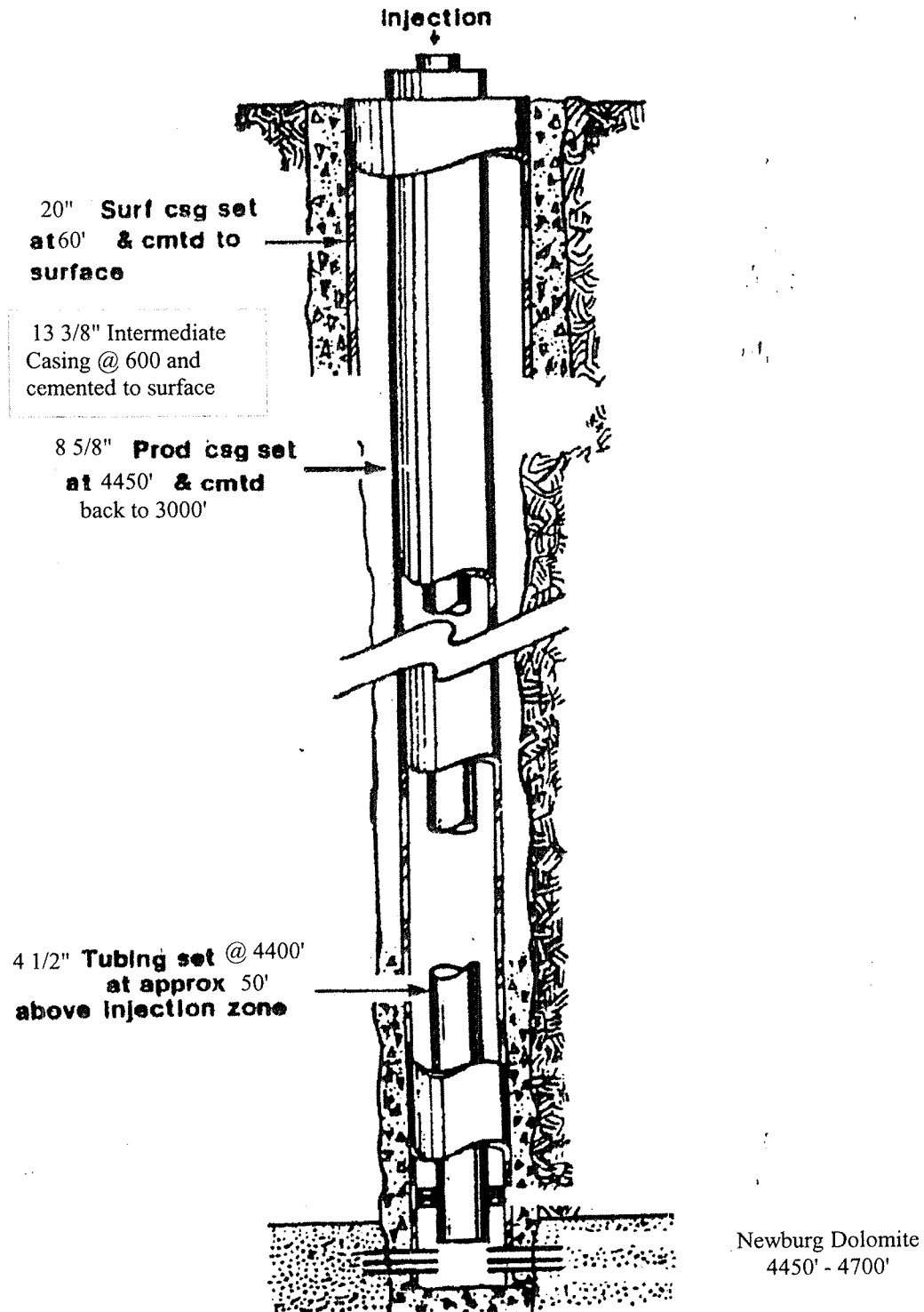
FRANK E. BAIR, P.S. NO. 5918

1/10/12
DATE

Trumbull County, Weathersfield Twp.,
SWIW #21 AWMS #1

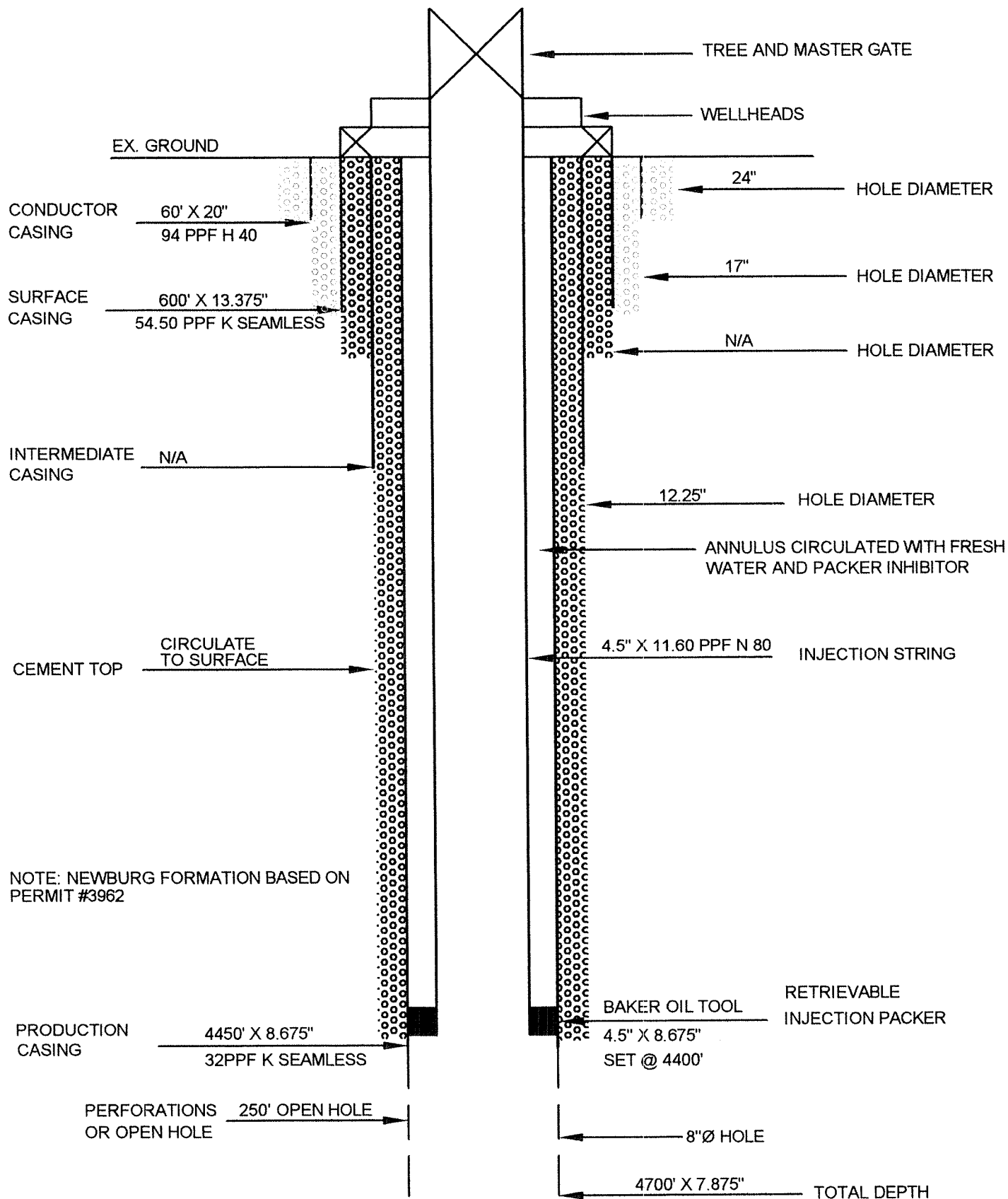
**Subsurface Construction
For Injection Well**

Maximum Injection Pressure: 1025 psi



Total Depth: 4700'

J:\Projects\KUR003-INJECTION WELL\dwg\KUR003-FIG 1_NEWBURG_122111.dwg - Dec 22, 2011 - 3:39pm - dbrookshire



AMERICAN WATER MANAGEMENT SERVICES, LLC

INJECTION WELL NO. AWMS-1 DETAIL
PROPOSED NILES INJECTION SITE

SCALE: NOT TO SCALE

DATE: 12-21-11

DWG: KUR003-FIG 1



**NORTH POINT
ENGINEERING**

6657 Frank Ave. N.W.
Suite 200
North Canton, Ohio 44720
330 - 494 - 8888
Fax 330 - 494 - 8889

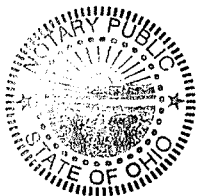
SALTWATER INJECTION WELL – AFFIDAVIT

Ohio Department of Natural Resources
Division of Oil and Gas Resources Management
2045 Morse Road, Columbus, Ohio 43229-6693

State of Ohio, Trumbull County, ss
Mr. Kenneth J. McMahon, President, being
first duly sworn says that as principal, or authorized agent, for American Water Management Services,
LLC, One American Way, Warren, Ohio 44484, he or
she has made application for a saltwater injection well in the State of Ohio Trumbull,
County, Weathersfield Township, section/lot number 9; and
further certifies that notice of application has been delivered to each individual entitled to personal
notification in accordance with paragraph (E) of Rule 1501:9-3-.06 of the Ohio Administrative Code.
And further affiant saith not.

Kenneth J. McMahon
Affiant Signature

Sworn to before me and subscribed in my presence this 23rd day of December,
20 11.



ANGELA K. MARIMPIETRI
Notary Public - State of Ohio
My Commission Expires 9/26/2015

Angela K. Marimpietri
Notary Public

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RESTORATION PLAN (Form 4)

Ohio Department of Natural Resources

Division of Oil and Gas Resources Management, 2045 Morse Road, Bldg. H-3, Columbus OH 43229-6693

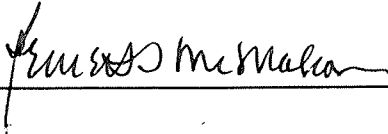
1. DATE OF APPLICATION: 23-Dec-11		3. API #:	
2. OWNER NAME, ADDRESS, & TELEPHONE NO.: American Water Management Services LLC, One American Way, Warren, Ohio 44484, (330) 856-8800		4. WELL #: 1	
		5. LEASE NAME: AWMS-1	
		6. PROPERTY OWNER: Gearmar Properties, Inc.	
		7. COUNTY: Trumbull	
		8. CIVIL TOWNSHIP: Weathersfield	
9. SECTION: 9		10. LOT:	
11. CURRENT LAND USE: <div><input type="checkbox"/> Cropland <input type="checkbox"/> Commercial <input type="checkbox"/> Pasture <input type="checkbox"/> Idle Land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input type="checkbox"/> Residential <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike</div>		17. TYPE OF WELL: <div><input type="checkbox"/> Oil <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other</div>	
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <div><input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other: (explain)</div>		18. STEEPEST SLOPE GRADIENT CROSSING SITE: <div><input checked="" type="checkbox"/> 0 to 2% <input type="checkbox"/> 2.1 to 8% <input type="checkbox"/> 8.1 to 10% <input type="checkbox"/> 10.1 to 24% <input type="checkbox"/> 10.1 to 24% <input type="checkbox"/> greater than 24%</div>	
13. TYPE OF FALL VEGETAL COVER: <div><input checked="" type="checkbox"/> Little or no vegetal cover <input type="checkbox"/> Short grasses <input type="checkbox"/> Tall weeds or short brush (1 to 2 ft.) <input type="checkbox"/> Brush or bushes (2 to 6 ft.) <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush</div>		19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <div><input type="checkbox"/> 1 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> 201 to 400 ft. <input checked="" type="checkbox"/> greater than 400 ft.</div>	
14. SOIL & RESOILING MATERIAL AT WELLSITE: <div><input type="checkbox"/> Stockpile and protect topsoil to be used when preparing seedbed <input type="checkbox"/> Use of soil additives (e.g., lime, fertilizer) <input checked="" type="checkbox"/> No resoiling planned <input type="checkbox"/> Proposed alternative</div>		20. RESTORATION OF DRILLING PITS: ** <div><input checked="" type="checkbox"/> Haul drilling fluids and fill pits <input type="checkbox"/> Use steel circulating tanks <input type="checkbox"/> Proposed alternative</div>	
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <div><input type="checkbox"/> No trees disturbed <input type="checkbox"/> Haul to landfill <input type="checkbox"/> Cut into firewood <input type="checkbox"/> Sell to lumber company <input checked="" type="checkbox"/> Bury with landowner's approval <input type="checkbox"/> Mulch small trees and branches, erosion control <input type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative</div>		21. BACKFILLING AND GRADING AT SITE: <div><input type="checkbox"/> Construct diversions channeled to naturally established drainage systems <input type="checkbox"/> Construct terraces across slopes <input checked="" type="checkbox"/> Grade to approximate original contour <input type="checkbox"/> Grade to minimize erosion & control offsite runoff <input type="checkbox"/> Proposed alternative</div>	
16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES: <div><input checked="" type="checkbox"/> No existing drainage facilities for removal of surface and/or subsurface water <input type="checkbox"/> Tile drainage system underlying land to be disturbed <input type="checkbox"/> Drain pipe(s) underlying land to be disturbed <input type="checkbox"/> Surface drainage facilities on land to be disturbed</div>		22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <div><input type="checkbox"/> Seeding plan <input type="checkbox"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <input checked="" type="checkbox"/> Proposed alternative <u>restore to original cover</u></div>	
17. ADDITIONAL HOLES: <div><input checked="" type="checkbox"/> Rat/Mouse, if used, will be plugged</div>		23. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD: <div><input type="checkbox"/> 100 ft. or less <input type="checkbox"/> 101 to 500 ft. <input checked="" type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> greater than 1500 ft.</div>	
18. CURRENT LAND USE OF PATH OF ACCESS ROAD: <div><input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Commercial <input type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike</div>			

**PITS MUST BE FILLED WITHIN TWO MONTHS AFTER COMMENCEMENT OF THE WELL AND WITHIN FOURTEEN DAYS AFTER COMMENCEMENT OF THE WELL IN AN URBANIZED AREA.

REQUIRED BY SECTION 1509.06 (A)(10), OHIO REVISED CODE -- FAILED TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN \$100.00 NOR MORE THAN \$2,000.00 OR CIVIL PENALTIES NOT LESS THAN \$4,000.00.

26. SURFACING MATERIAL FOR ACCESS ROAD: <div><input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Slag <input type="checkbox"/> No surfacing material to be used <input type="checkbox"/> Proposed alternative</div> <div><input type="checkbox"/> Brick and/or tile waste <input type="checkbox"/> Crushed stone</div>	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: <div><input checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%</div>
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <div><input type="checkbox"/> Landowner <input checked="" type="checkbox"/> Existing access road</div> <div><input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Operator</div>	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <div><input type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 201 to 400 ft.</div> <div><input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> greater than 400 ft.</div>
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <div><input checked="" type="checkbox"/> Diversions <input type="checkbox"/> Drains <input type="checkbox"/> Open top culverts <input checked="" type="checkbox"/> Outsloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative</div> <div><input type="checkbox"/> Filter strips <input type="checkbox"/> Riprap <input type="checkbox"/> Water breaks</div>	31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? <div><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div>

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Owner/Authorized Agent 

Name (Typed or Printed) Kenneth J. McMahon, President Date 12-23-11

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

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RESTORATION PLAN (Form 4)

Ohio Department of Natural Resources

Division of Oil and Gas Resources Management, 2045 Morse Road, Bldg. H-3, Columbus OH 43229-6693

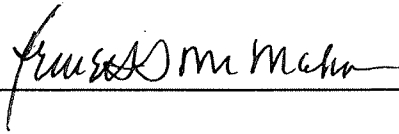
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16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES: <input checked="" type="checkbox"/> No existing drainage facilities for removal of surface and/or subsurface water <input type="checkbox"/> Tile drainage system underlying land to be disturbed <input type="checkbox"/> Drain pipe(s) underlying land to be disturbed <input type="checkbox"/> Surface drainage facilities on land to be disturbed		22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <input type="checkbox"/> Seeding plan <input type="checkbox"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <input checked="" type="checkbox"/> Proposed alternative <u>restore to original cover</u>	
		23. ADDITIONAL HOLES: <input checked="" type="checkbox"/> Rat/Mouse, if used, will be plugged	
		24. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD: <input type="checkbox"/> 100 ft. or less <input type="checkbox"/> 101 to 500 ft. <input checked="" type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> greater than 1500 ft.	
25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input type="checkbox"/> Pasture <input type="checkbox"/> Commercial <input type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: <input type="checkbox"/> Broadleaf <input type="checkbox"/> Needlelike			

**PITS MUST BE FILLED WITHIN TWO MONTHS AFTER COMMENCEMENT OF THE WELL AND WITHIN FOURTEEN DAYS AFTER COMMENCEMENT OF THE WELL IN AN URBANIZED AREA.

REQUIRED BY SECTION 1509.06 (A)(10), OHIO REVISED CODE -- FAILED TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN \$100.00 NOR MORE THAN \$2,000.00 OR CIVIL PENALTIES NOT LESS THAN \$4,000.00.

26. SURFACING MATERIAL FOR ACCESS ROAD: <div><input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Slag <input type="checkbox"/> No surfacing material to be used <input type="checkbox"/> Proposed alternative</div> <div><input type="checkbox"/> Brick and/or tile waste <input type="checkbox"/> Crushed stone</div>	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: <div><input checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%</div>
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <div><input type="checkbox"/> Landowner <input checked="" type="checkbox"/> Existing access road</div> <div><input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Operator</div>	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <div><input type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 201 to 400 ft.</div> <div><input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> greater than 400 ft.</div>
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <div><input checked="" type="checkbox"/> Diversions <input type="checkbox"/> Drains <input type="checkbox"/> Open top culverts <input checked="" type="checkbox"/> Outsloping of road <input type="checkbox"/> Pipe culverts <input type="checkbox"/> Proposed alternative</div> <div><input type="checkbox"/> Filter strips <input type="checkbox"/> Riprap <input type="checkbox"/> Water breaks</div>	31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? <div><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</div>

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Owner/Authorized Agent 

Name (Typed or Printed) Kenneth J. McMahon, President Date 12-23-11

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

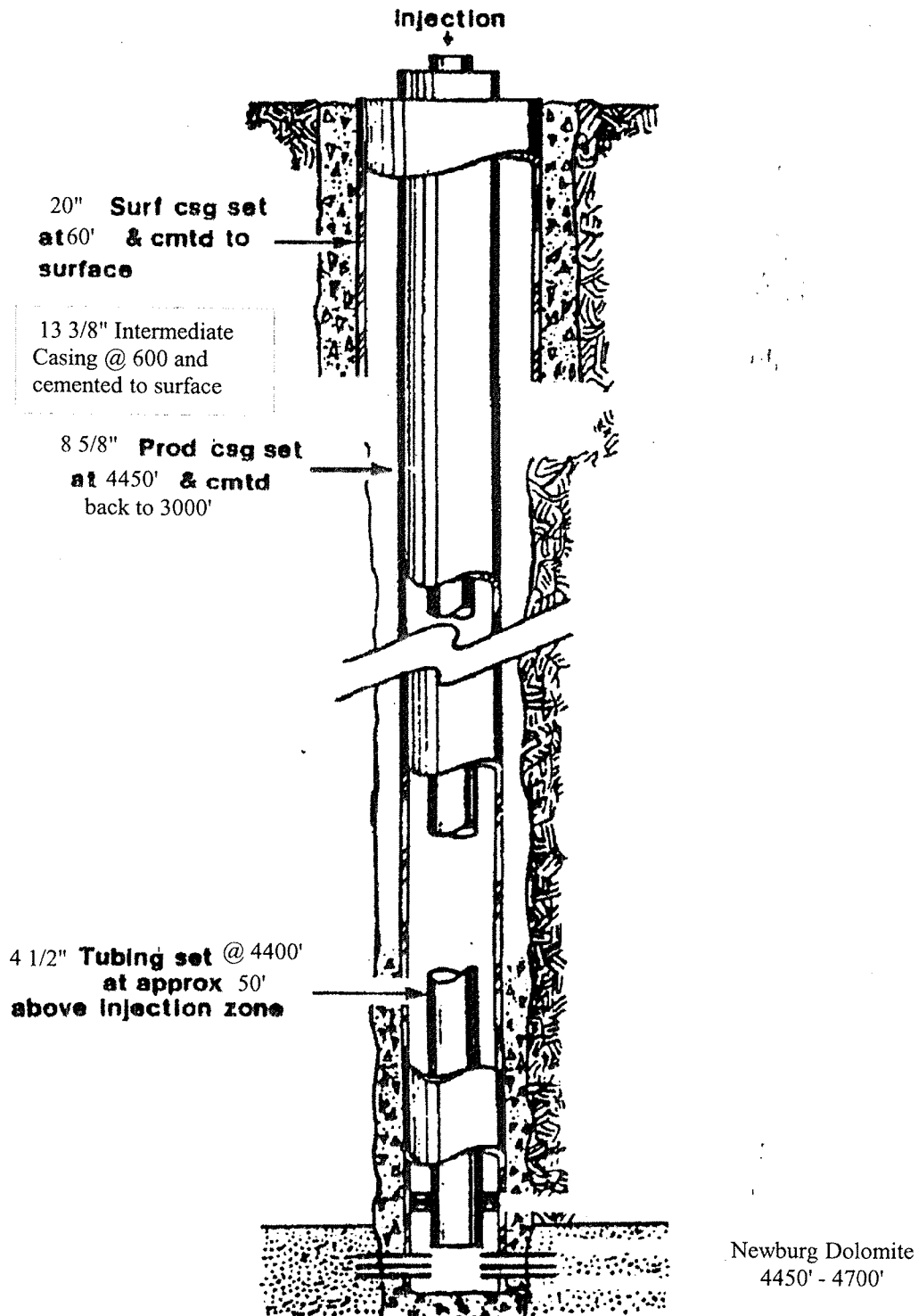
RECEIVED

DEC 27 2011

Trumbull County, Weathersfield Twp.,
SWIW #21 AWMS #1

Subsurface Construction
For Injection Well

Maximum Injection Pressure: 1025 psi

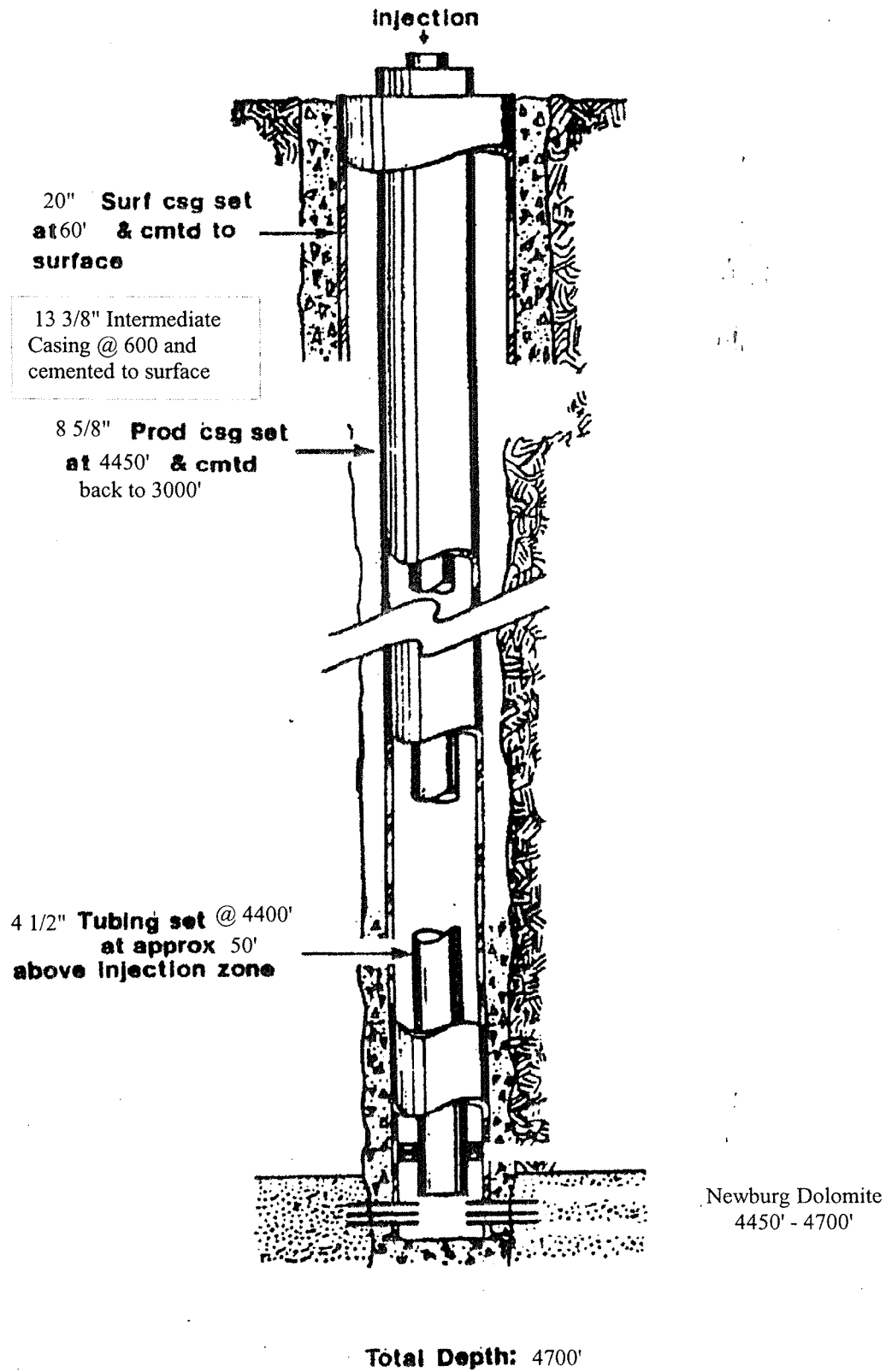


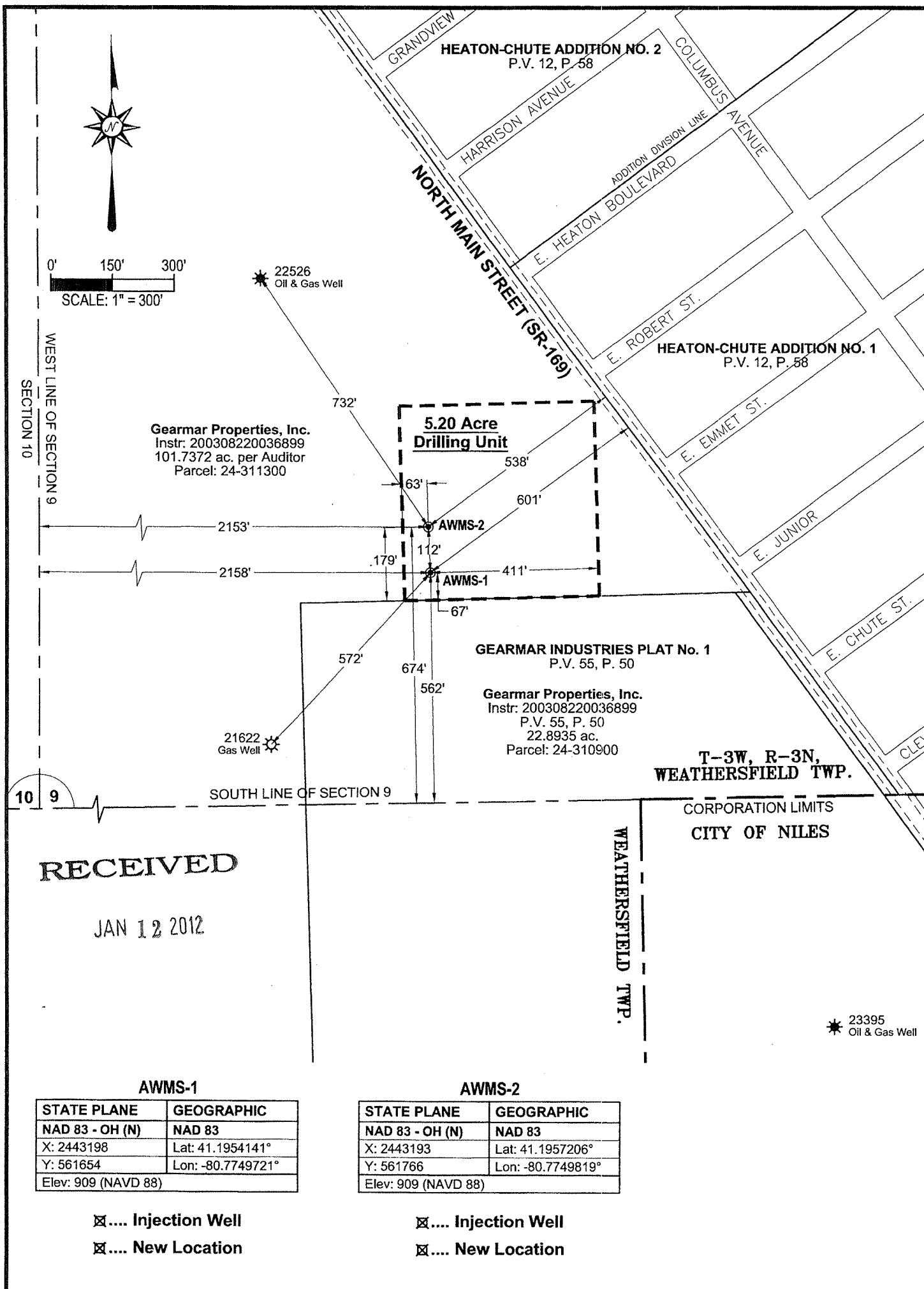
Total Depth: 4700'

Trumbull County, Weathersfield Twp.,
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153 NORTH BROADWAY, NEW PHILADELPHIA, OHIO
TELEPHONE: (330) 343-3499, FAX: (330) 343-9505

Company: American Water Management Services LLC
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Quad: Warren **Subdivision:** Connecticut Western Reserve
Location: Section 9, T-3N, R-3W
Twp: Weathersfield **County:** Trumbull
Surveyor: FEB **Draftsman:** KT **Date:** 01.10.2011

MAP

Showing Proposed New
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State of Ohio
Dept. of Natural Resources
Division of Oil & Gas
Fountain Square,
Columbus, Ohio 43224

CERTIFICATE OF SURVEYOR

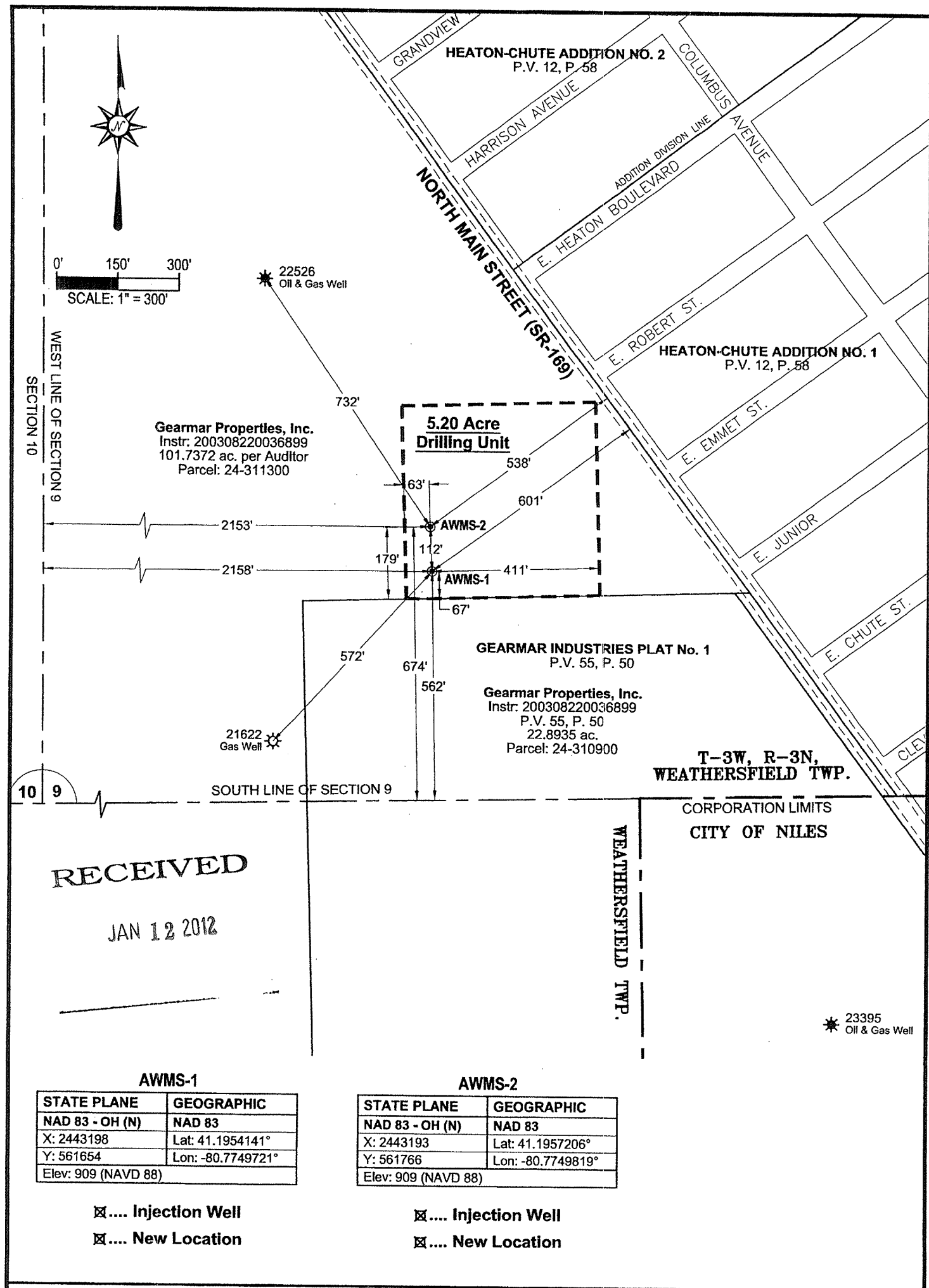
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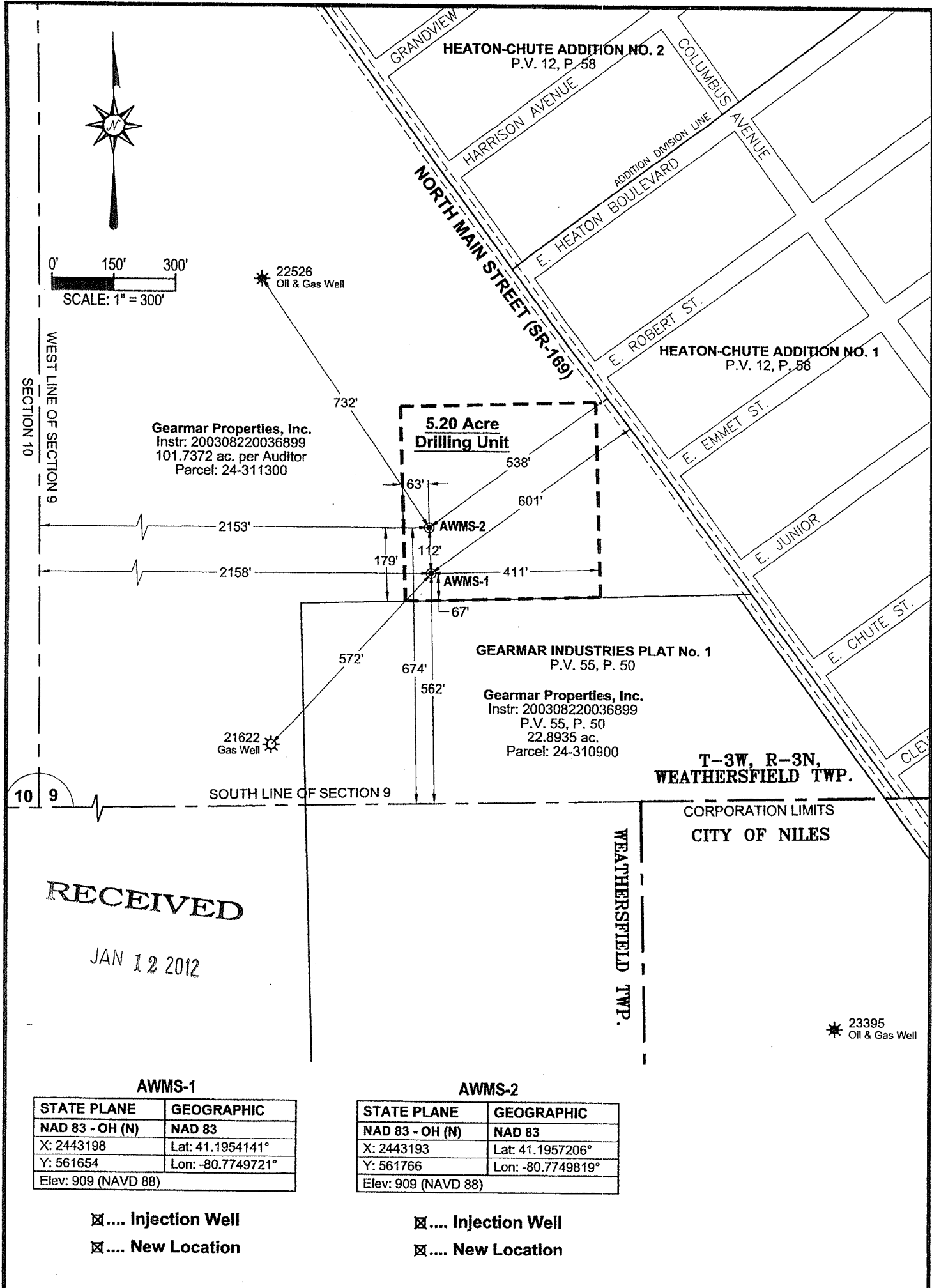
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JAN 12 2012

AWMS-1

STATE PLANE	GEOGRAPHIC
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Y: 561654	Lon: -80.7749721°
Elev: 909 (NAVD 88)	

AWMS-2

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☒ New Location

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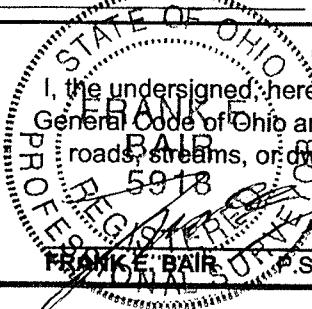
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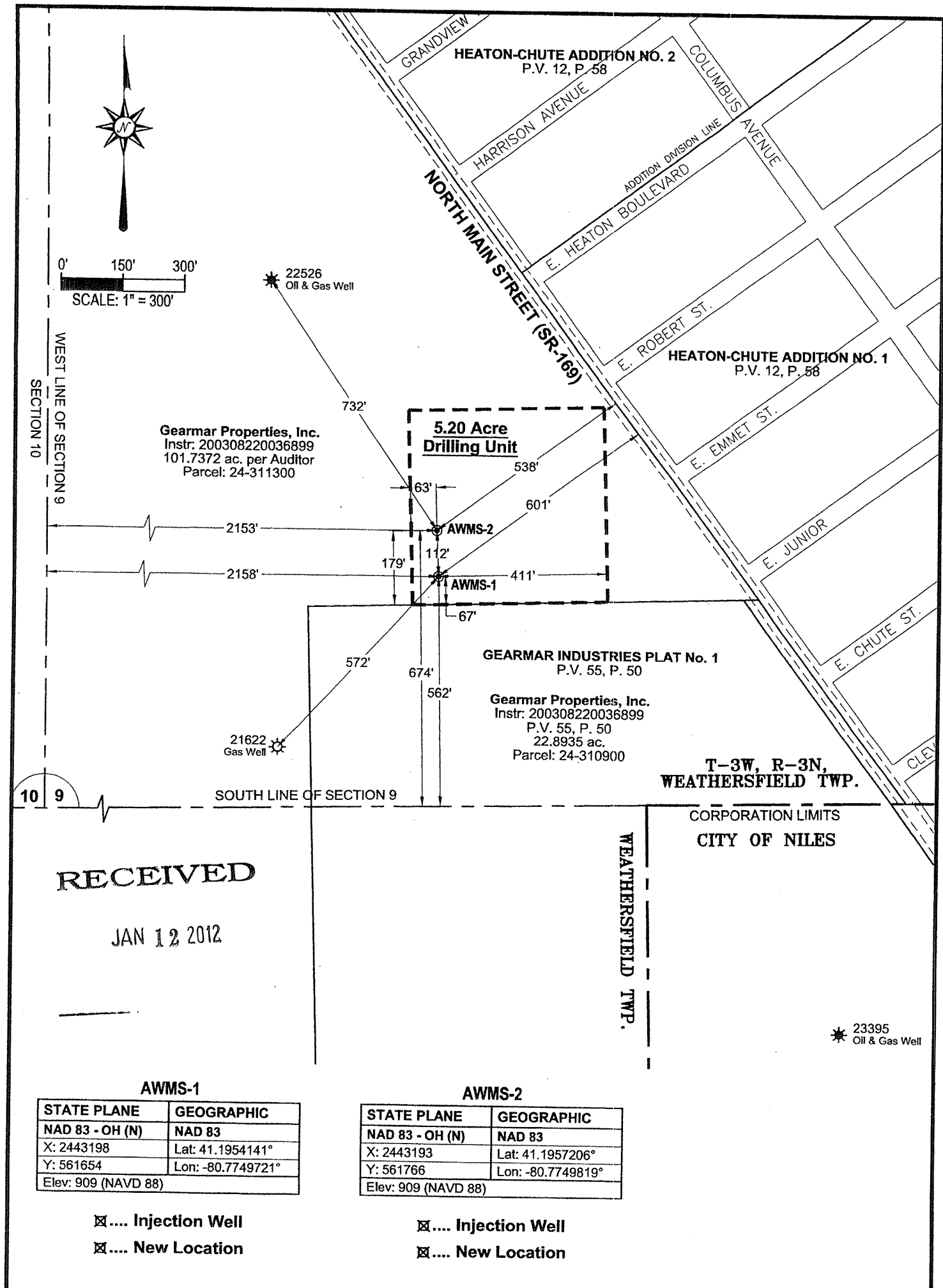


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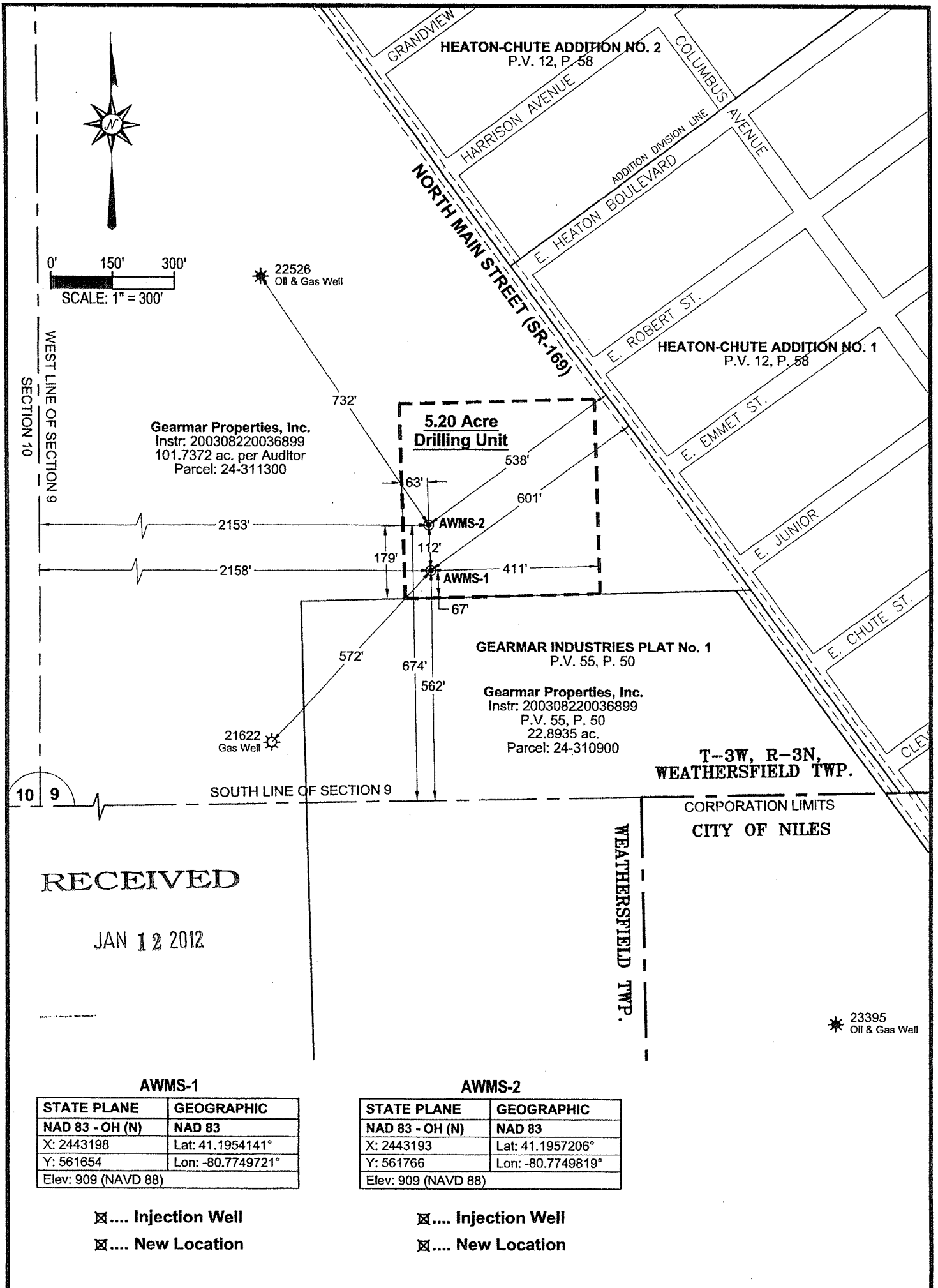
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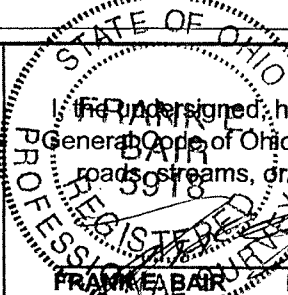
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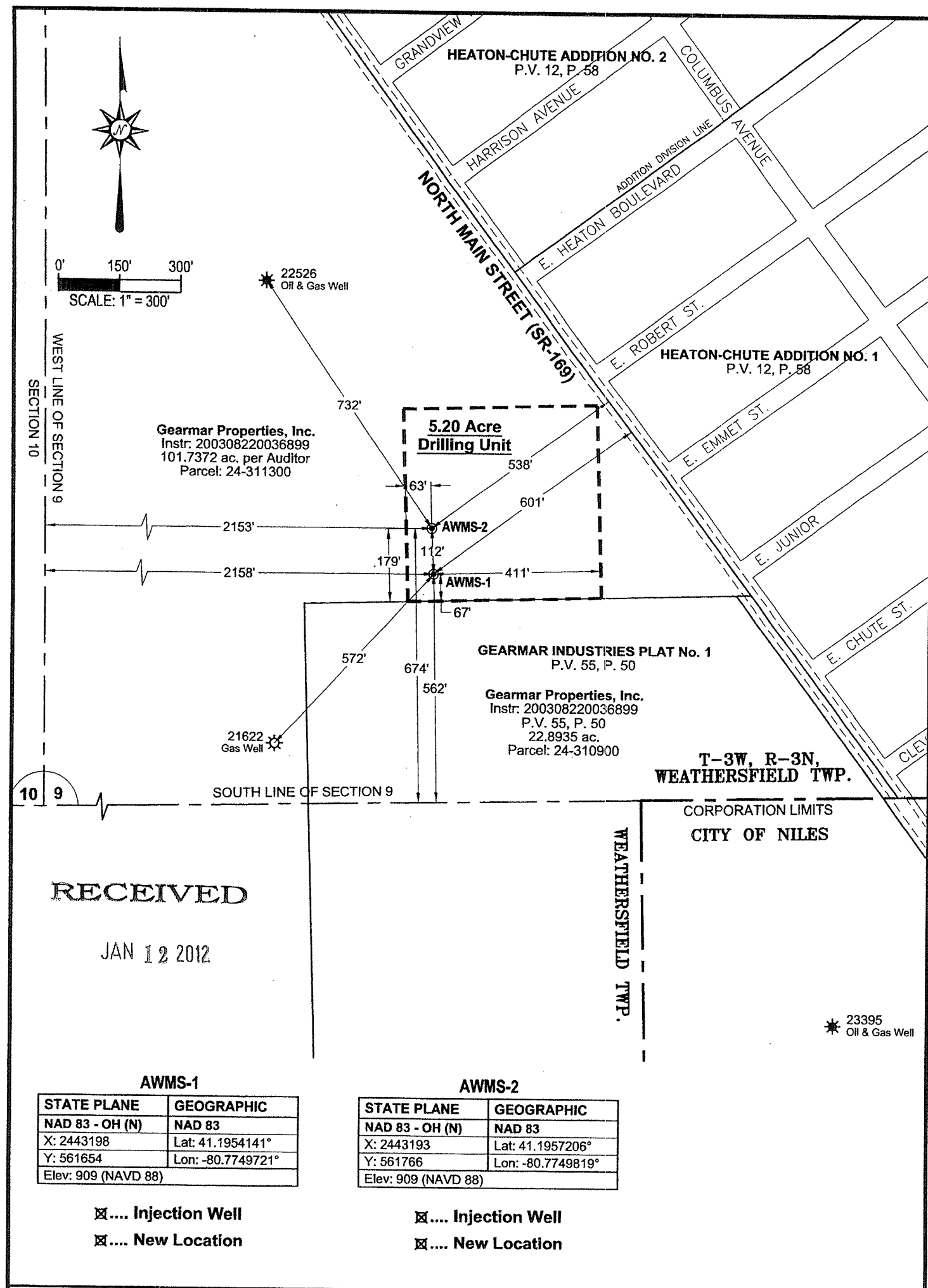
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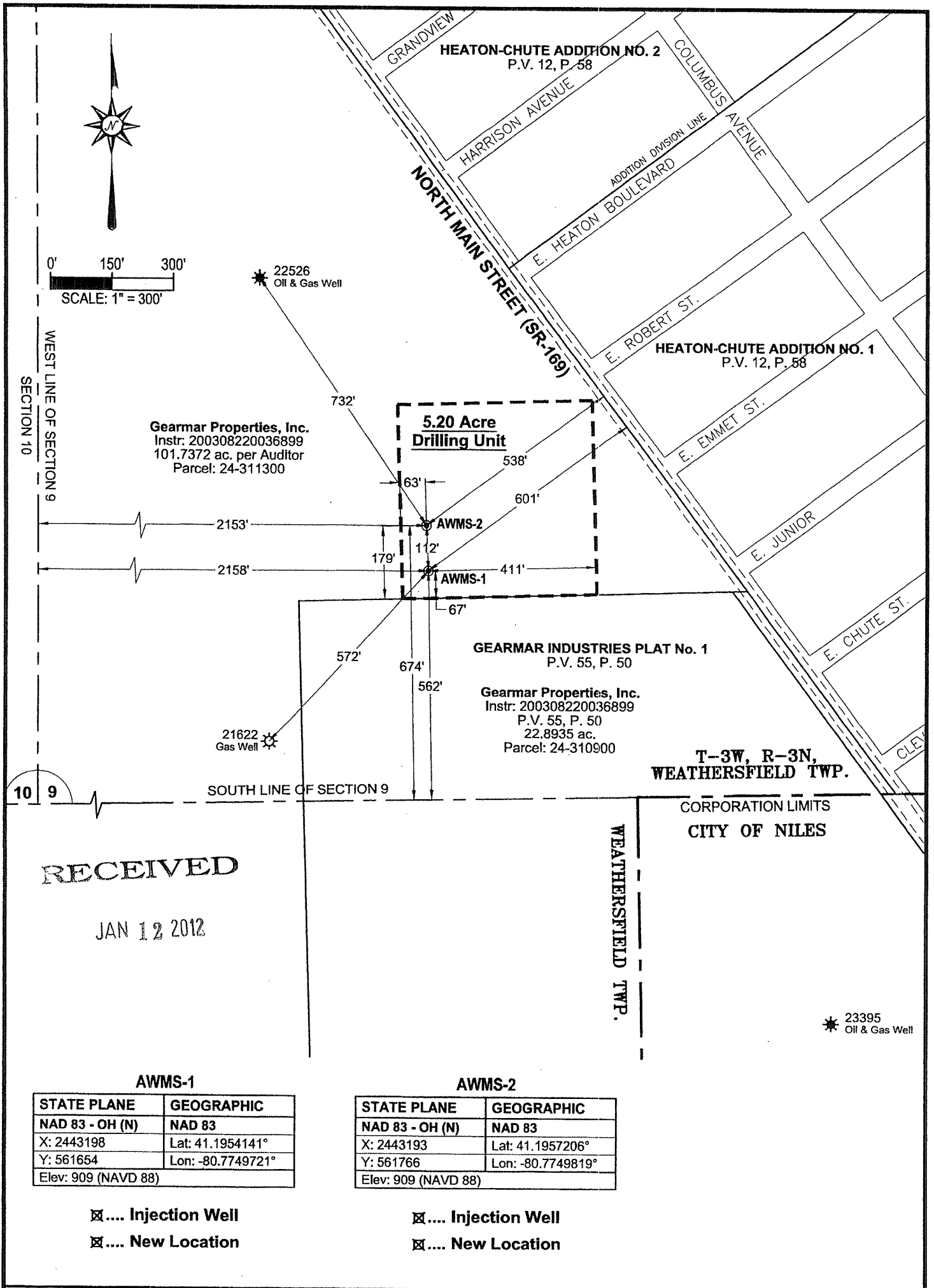
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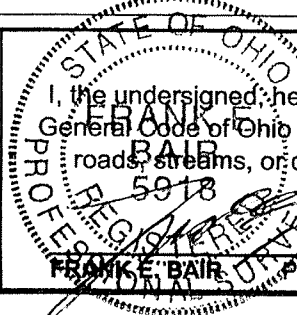
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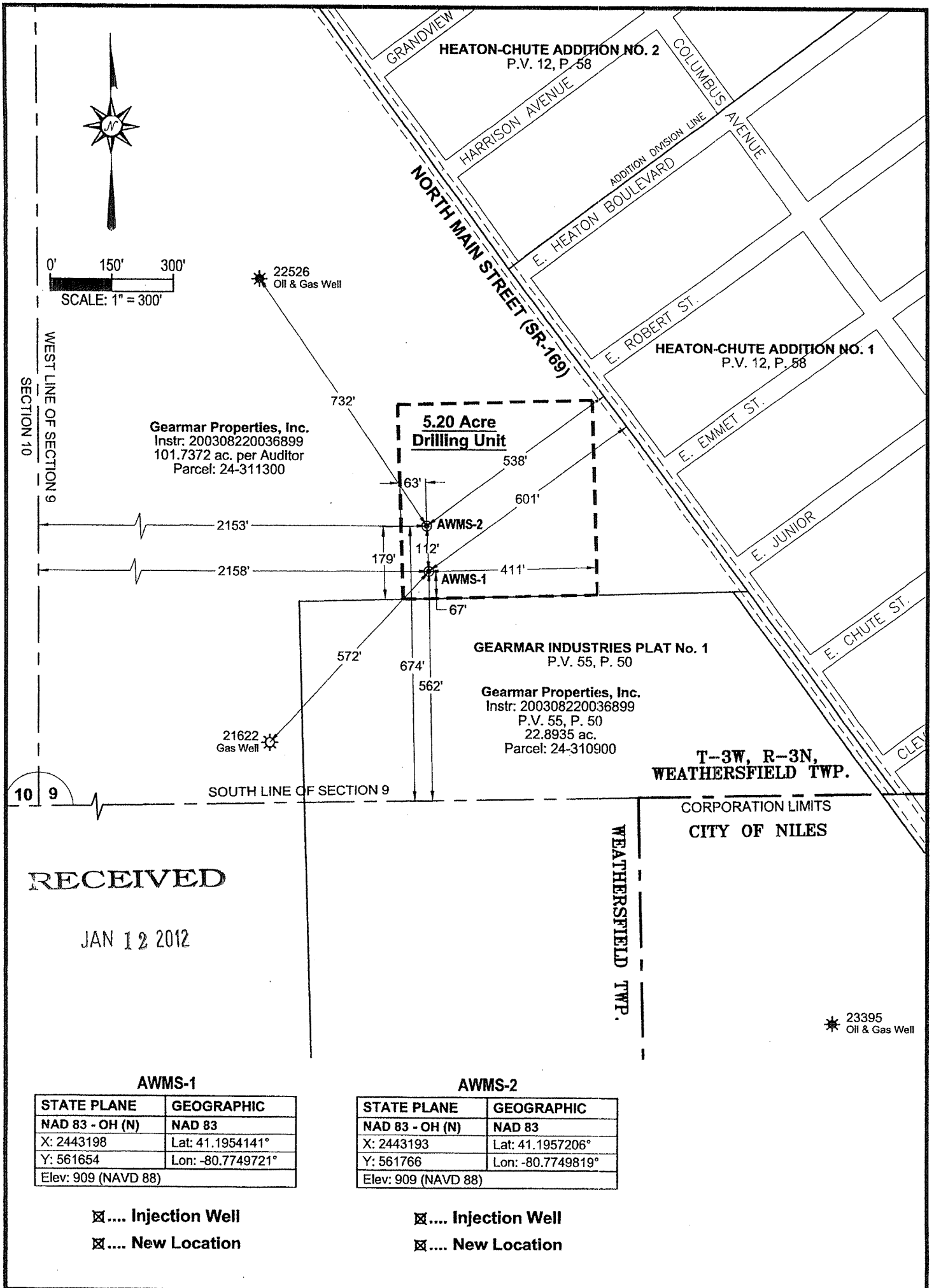


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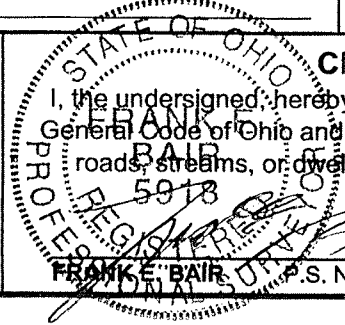
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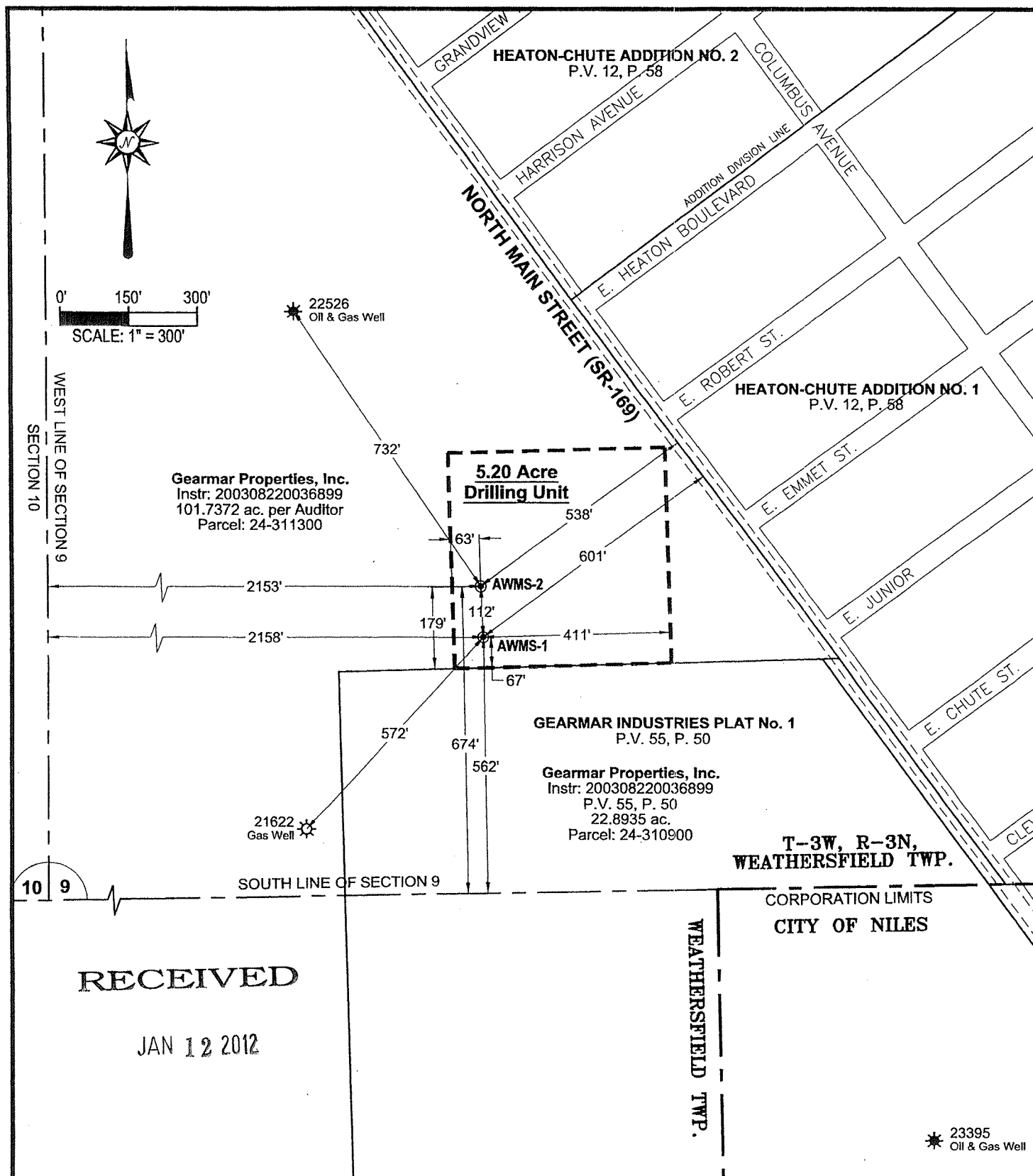


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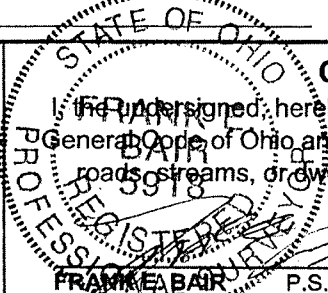
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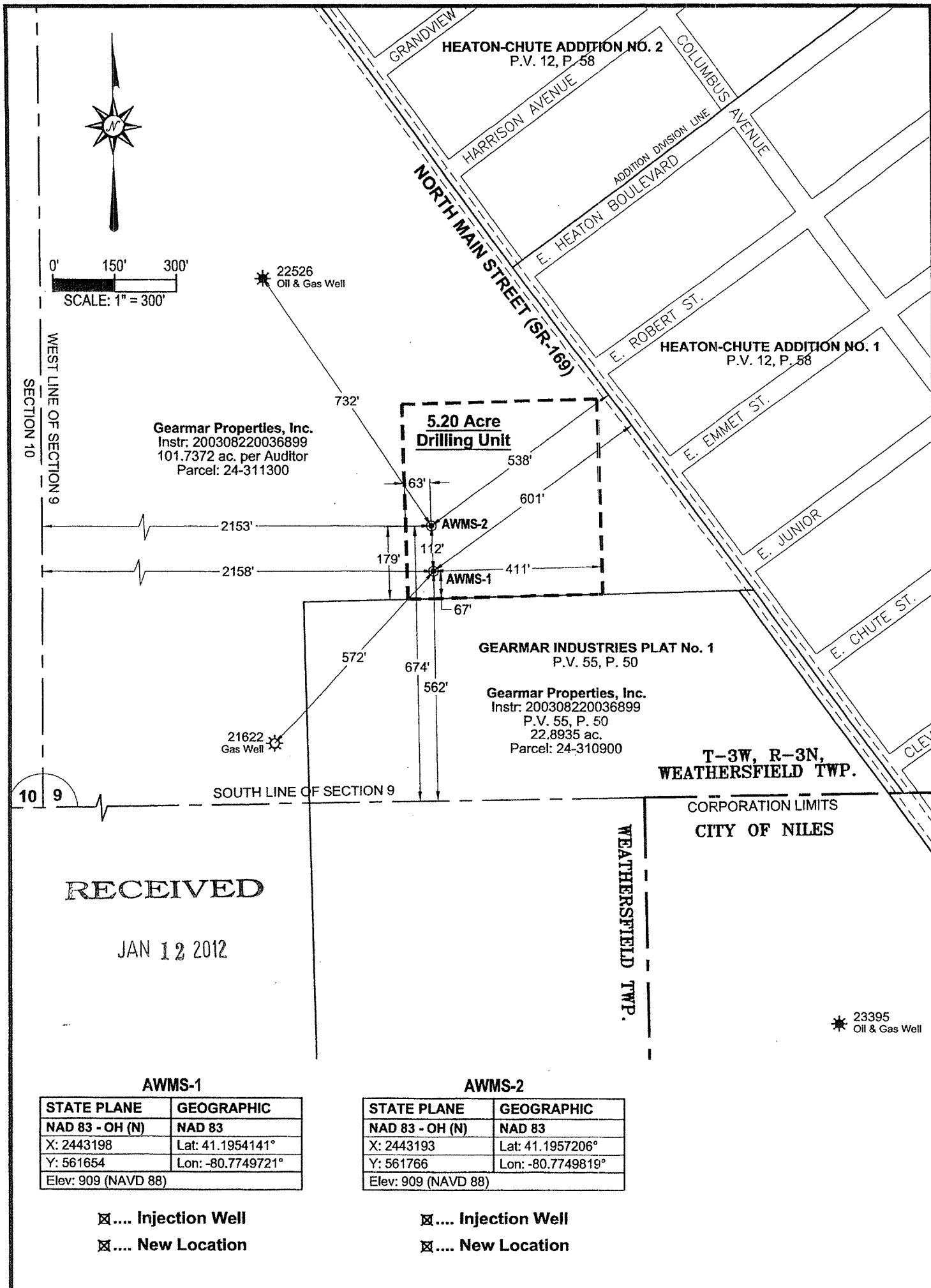
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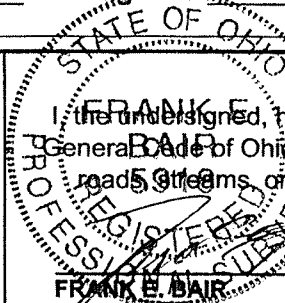
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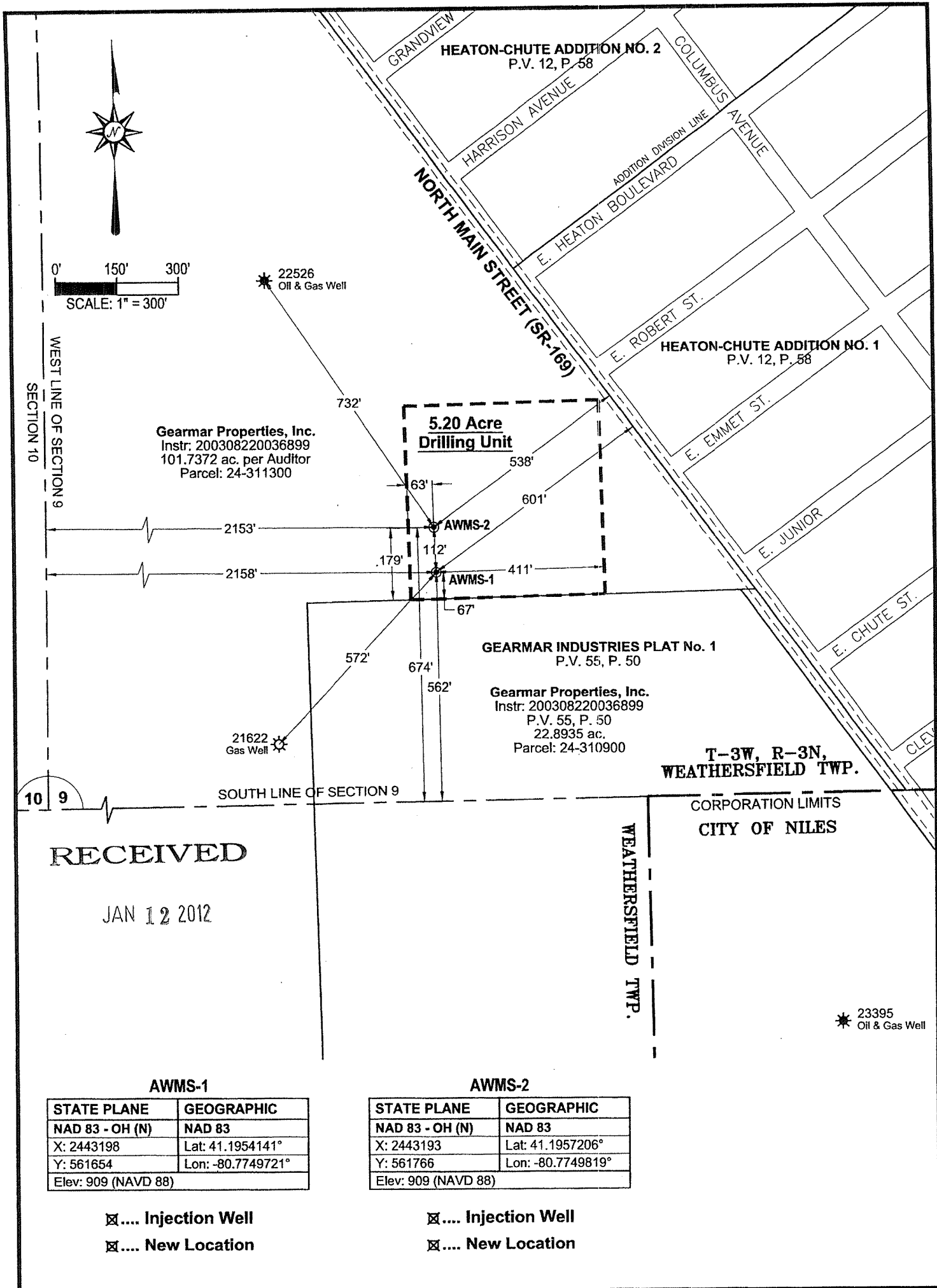


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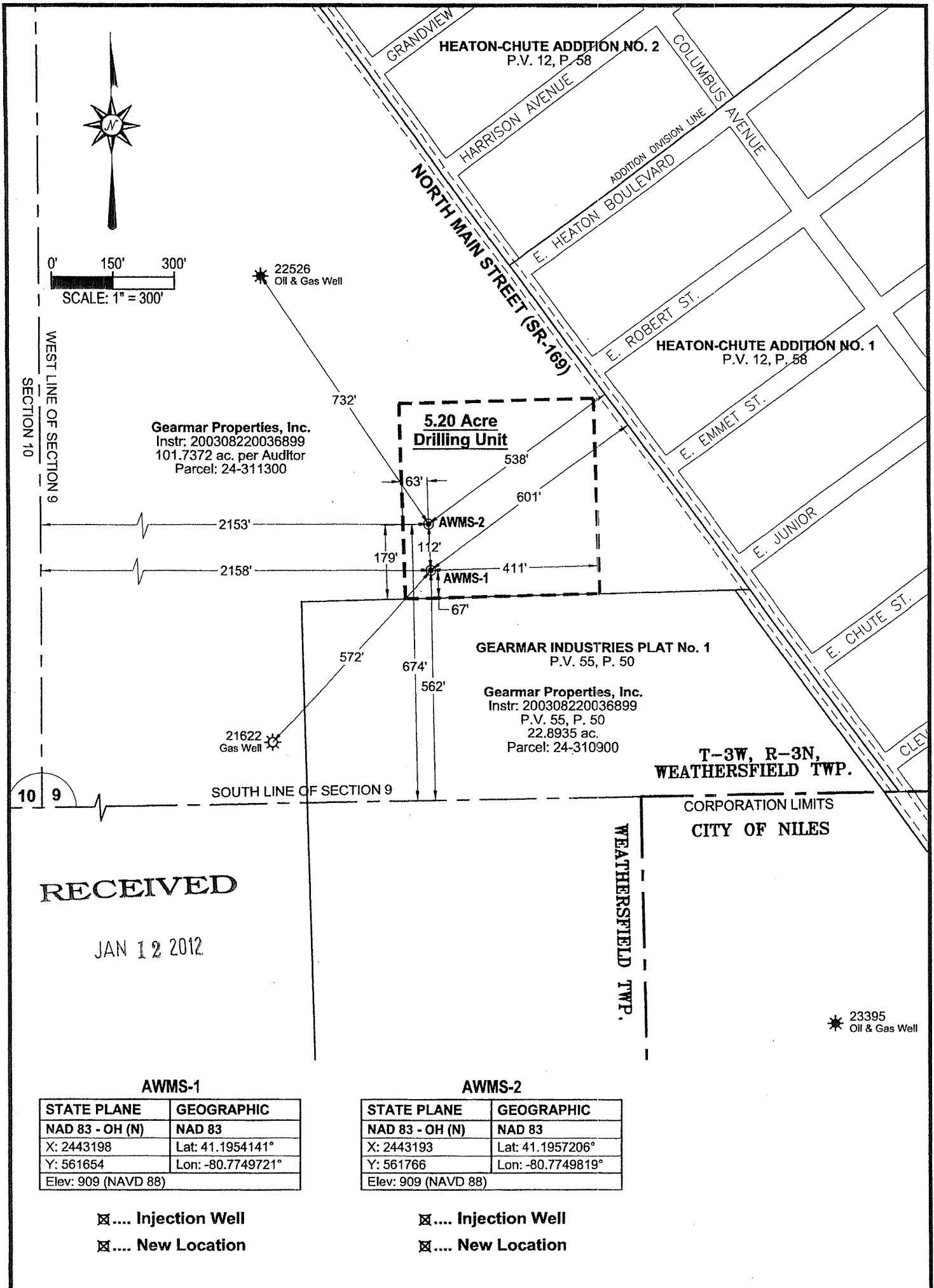
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QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

GEOSYNTHETIC MATERIALS

AMERICAN WATER MANAGEMENT SERVICES, LLC
NILES INJECTION SITE
TRUMBULL COUNTY, OHIO

December 2011

Prepared by:

North Point Engineering
6657 Frank Ave. NW, Suite 200
North Canton, OH 44720
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