

APPLICATION CHECKLIST

Trumbull Co, SWW #22, P#
 AUMS-2,
 Knop - Mt. Summit

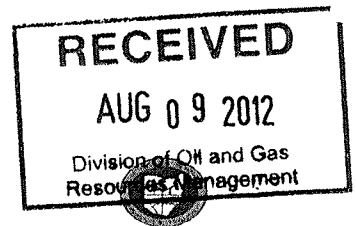
	Date	Initials
Enter on Agenda	12/27/11	JD
Completeness Review	2/6/12	JD
Date - Time Stamp	12/27/11	JD
Area of Review	2/6/12	JD
Site Evaluation	8-9-12	JD
Permitting Section	12/27/11	JD
Memo to Inspector	7-25-12	JD
Public Notice	08-01-12	JD
Letter	08-01-12	
Date Run		
15 Days		
Review Public Notice	12/27/11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

RECORD OF CONVERSATION

* Urban Dirty Requirements

Proof Sheet

APPL NUMBER	aPATT020309	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-2	DISPOSAL PLAN 5
WELL NUMBER	2 (SWW#22)	MP Check # 0
PREV/PROPOSED TD	9100	
DRILL UNIT ACRES	101	
TYPE OF TOOL	RTAF	PROPOSED FORMATIONS
WELL CLASS	Flow	KNOX DOLOMITE & MT. SIMON SANDSTONE
FIRE PHONE	() - 911	
MEDICAL PHONE	() - 911	
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	2420002	Nad 27 TARG ORIG X
Nad 27 SURF ORIG Y	50234	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 #22	Permit Number	Inspection Date	07/30/12	Modification Date (if applicable)
Company	American Water Management Services, LLC.		Lease Name/Well #	AWMS #2	
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
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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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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 1/2 mile to the West			

ITEM	RESTORATION	Comments:			
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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If yes, submit the following waiver requests:				

Is the Company required to submit revised drawings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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

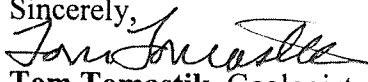
Mr. Kenneth J. McMahon
American Water Management Services, LLC,
One American Way
Warren, OH 44484-5555

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

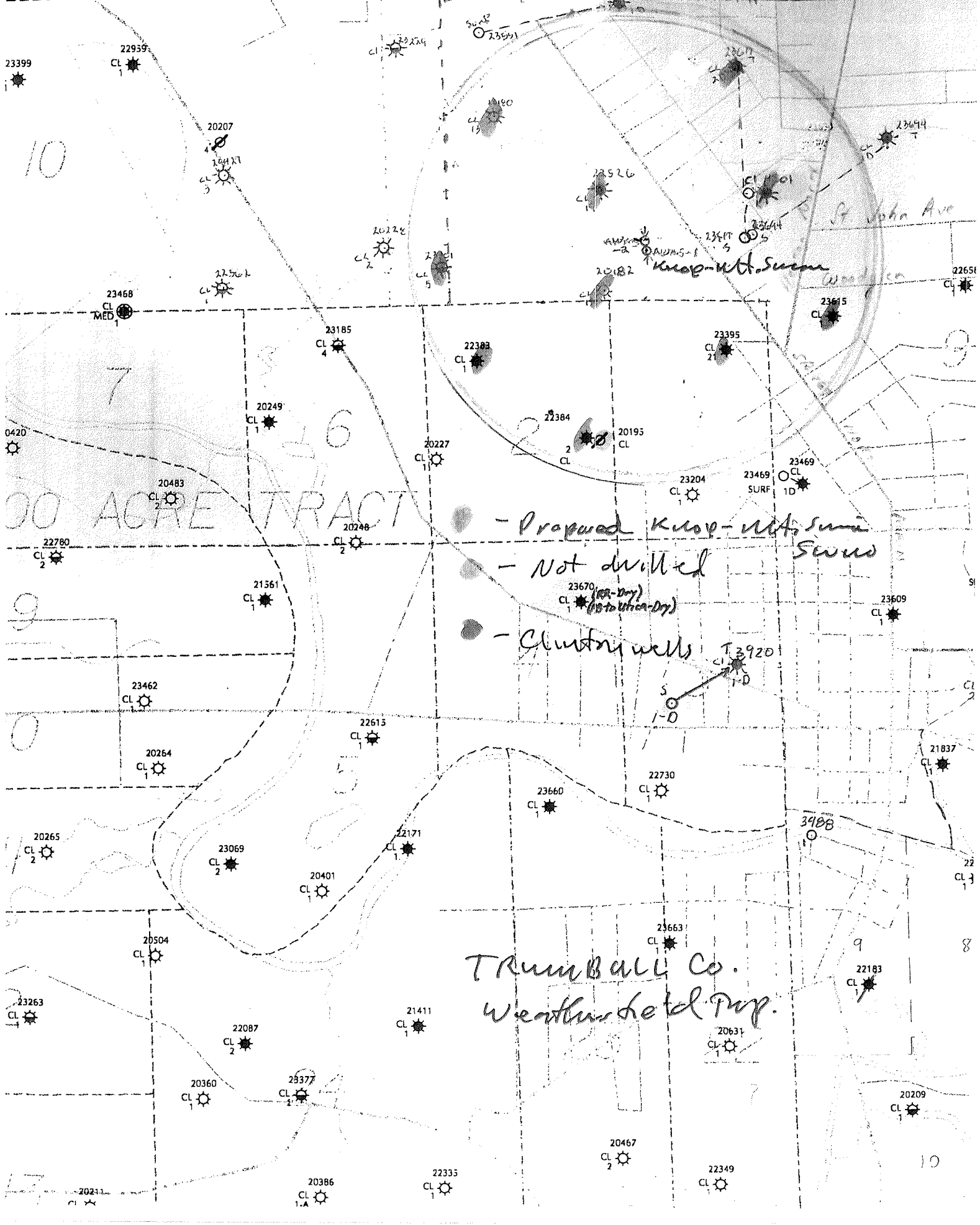
PUBLIC NOTICE

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.

Whited out line
results Incorrect boundary for
west line of Lot 9

West line
of Lot 9, per
Trumbull County
Engineers

HOWLAND TWP



- Proposed Knop-Mt. Sunn Sewer
- Not drilled
- Country wells

Trumbull Co.
Weatherford Prop.

OPERATOR American Water Management Services, LLC COUNTY T. Russell
 TOWNSHIP Weathersfield

P & A	FM	Permit Number	Casing/Cement Program	Well Log and/or Method of Plug
<input type="checkbox"/>	<u>Knox-Mt. Vernon</u>	<u>New well</u>	<u>20' - 100' - cemented to surface</u> <u>1 3/8" - 1100' - cemented to surface</u> <u>9 5/8" - 7300' - cemented to surface</u>	
<input type="checkbox"/>	<u>195</u>	<u>CL</u>	<u>Not drilled</u>	
<input type="checkbox"/>	<u>2384</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>2387</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>3301</u>	<u>CL</u>	<u>Cluster well</u>	<u>* No other wells in AOR penetrating prepared injection zone</u>
<input type="checkbox"/>	<u>180</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>2526</u>	<u>CL</u>	<u>Cluster well</u>	<u>DD</u> <u>2/6/12</u>
<input type="checkbox"/>	<u>182</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>3395</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>3615</u>	<u>CL</u>	<u>Cluster well</u>	
<input type="checkbox"/>	<u>4001</u>	<u>CL</u>	<u>Cluster well</u>	

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

DAILY ROUTE SLIP *Weather's file 14*

APPLICATION NO. aPATT020309 TYPE: Drill New Well

CONAME AMERICAN WATER MGMT SE API

WELL NAME /NO. AWMS-2 2

COUNTY 155 TRUMBULL INITIALS DATE

DATE APPLICATION REC'D *pn* 12/27/2011

PERMIT FEE AND CHECK NO. \$1,000.00 1011

RUSH AMOUNT RUSH CHECK NO. \$0.00 0

APPLICATION ENTERED *pn* 12/27/11

APPLICATIONS AND PLATS SENT FOR MINE APPROVAL *pn* 12/27/11

COAL APPROVAL RECEIVED *pn* _____

OIL/GAS AFFIDAVIT REC'D *pn* _____

URBANIZED AREA NOTIFICATION SENT *pn* _____

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

URBAN MAP REVIEW *pn* _____

SAMPLES: YES _____ /SPECIAL AREAS *pn* _____

GEOLOGIST APPROVAL *pn* _____

DATA ENTRY /ISSUED *pn* _____

PERMIT: TAKEN _____ MAILED _____ *pn* _____

FAX TO: _____

FINAL MAP CHECK _____

COMMENTS: Urban - Pop 8,400

INTER-OFFICE MEMO

TO: Stephen Ochs, Mineral Resources Inspector
FROM: Glenda M. Besana-Ostman, Geologist *gmb*
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 # 2 - Niles Injection Site
PERMIT NUMBER: NEW WELL, SWIW # 22
LOCATION:
AWMS # 2: 674' SL & 2153' WL of SEC 9, Weathersfield Twp., Trumbull County
PROPOSED INJECTION ZONE: NEWBURG ZONE/LOCKPORT FORMATION
DATE RECEIVED: DECEMBER 27, 2011

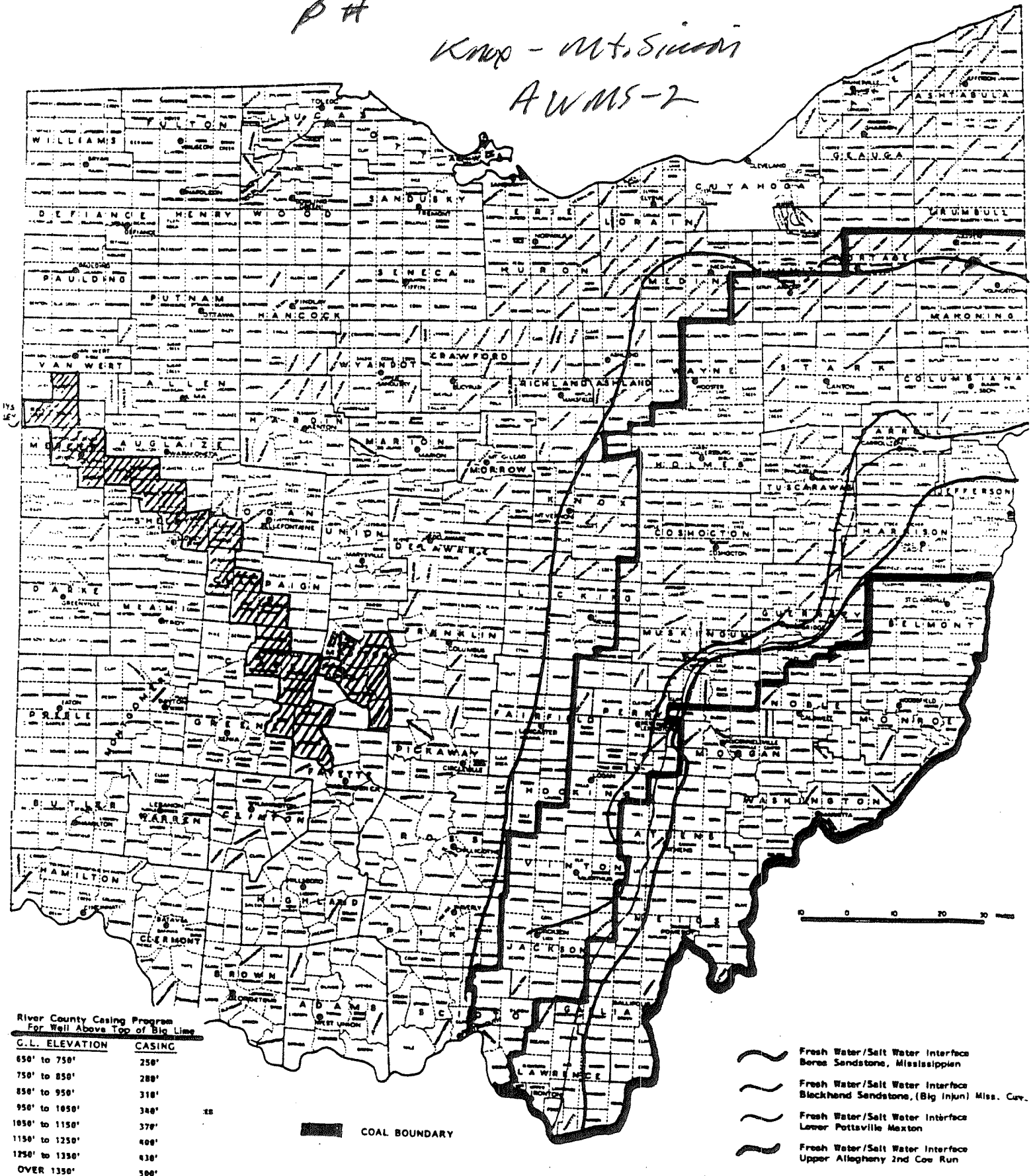
Please inspect proposed site and evaluate for any potential water wells or surface bodies of water within close proximity that would require any additional permit conditions for the construction of the SWIW surface facilities. Please e-mail me a copy of the site inspection report with any recommendations.

TRUMBULL COUNTY SURV #22

P#

KNOP - Mt. Sion





AWMS-2



River County Casing Program
For Well Above Top of Big Lime

C.L. ELEVATION	CASING
650' to 750'	250'
750' to 850'	280'
850' to 950'	310'
950' to 1050'	340'
1050' to 1150'	370'
1150' to 1250'	400'
1250' to 1350'	430'
OVER 1350'	500'

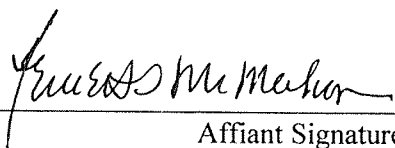
COAL BOUNDARY

-  Fresh Water/Salt Water Interface
Berea Sandstone, Mississippian
-  Fresh Water/Salt Water Interface
Blackhand Sandstone, (Big Injun) Miss. Cov.
-  Fresh Water/Salt Water Interface
Lower Pottsville Maxton
-  Fresh Water/Salt Water Interface
Upper Allegheny 2nd Cow Run

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.




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



Notary Public

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 perms in the Berea and Ohio Shale, but doesn't show the proposed injection zone perms.
 - 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.

1011
\$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

AP# 20309

SEE INSTRUCTIONS ON PAGE 2 (BACK)

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> , 20 <u>11</u> for a permit to:		2. Owner #: <u>8905</u> Phone #: <u>330-856-8800</u>
<input type="checkbox"/> Reissue (check appropriate blank) <input checked="" type="checkbox"/> Drill New Well <input type="checkbox"/> Drill Directionally <input type="checkbox"/> Drill Horizontally		<input type="checkbox"/> Revised Location <input type="checkbox"/> Plug Back <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Orphan Well Program
3. TYPE OF WELL: <input type="checkbox"/> Oil & Gas <input type="checkbox"/> Stratigraphic test <input type="checkbox"/> Solution Mining * <input type="checkbox"/> Input/Injection		<input type="checkbox"/> Annular Disposal <input type="checkbox"/> Gas Storage <input type="checkbox"/> Enhanced Recovery * <input type="checkbox"/> Water Supply
4. MAIL PERMIT TO: <u>American Water Management Services LLC</u> <u>c/o Mr. Steve Kilper</u> <u>One American Way</u> <u>Warren, Ohio 44484</u>		20. TYPE OF TOOLS: <input type="checkbox"/> Cable <input type="checkbox"/> Cable/Air Rotary <input type="checkbox"/> Cable/ Fluid Rotary <input type="checkbox"/> Cable/Air/Fluid Rotary
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>2</u> 13. LEASE NAME: <u>AWMS-2</u> 14. PROPOSED TOTAL DEPTH <u>9,100'</u> 15. PROPOSED GEOLOGIC FORMATION: <u>Knox Dolomite and the Mt. Simon Sandstone</u>		21. PROPOSED CASING PROGRAM: 20" Conductor minimum of 60'(if air); 13-3/8" surface casing minimum 1,100' (cement circulated to surface); 9-5/8" production casing minimum 7,300' (casing cement to 4,000'); 4-1/2" tubing set at 7,250'; "Blow out Preventor Required" Hazardous Conditions may be encountered; All due precautions should be taken.
16. DRILLING UNIT IN ACRES (must be same as acres indicated on plat): <u>101 Acres</u>		22. FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS (closest to well site): Fire: <u>911</u> Medical: <u>911</u>
17. IF PERMITTED PREVIOUSLY: API #: OWNER: WELL #: LEASE NAME: TOTAL DEPTH: GEOLOGICAL FORMATION:		23. MEANS OF INGRESS & EGRESS: Township Road: <u>N Main Street</u> County Road: Municipal Road: State Highway: <u>169</u>
18. IF SURFACE RIGHTS ARE OWNED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES Division Name: Division Phone:		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
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:		RECEIVED DEC 27 2011

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 complete, 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 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, 2011.
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: _____ Knox Dolomite and the Mt. Simon Sandstone _____
Injection Interval: From: _____ 7,300 feet to 9,100 feet _____
Geologic description of injection zone: Dolomite and Sandstone _____

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. 2. 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.

RECEIVED
DEC 27 2011

D. Description of the proposed unloading, surface storage, and spill containment facilities:
See "Exhibit 2" for diagrams and descriptions.

33. PROPOSED INJECTION VOLUMES

A. Indicate the estimated amount of saltwater to be injected into the proposed injection well per day:
AVERAGE: _____ 2,200 bbl/day _____ MAXIMUM: _____ 4,000 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

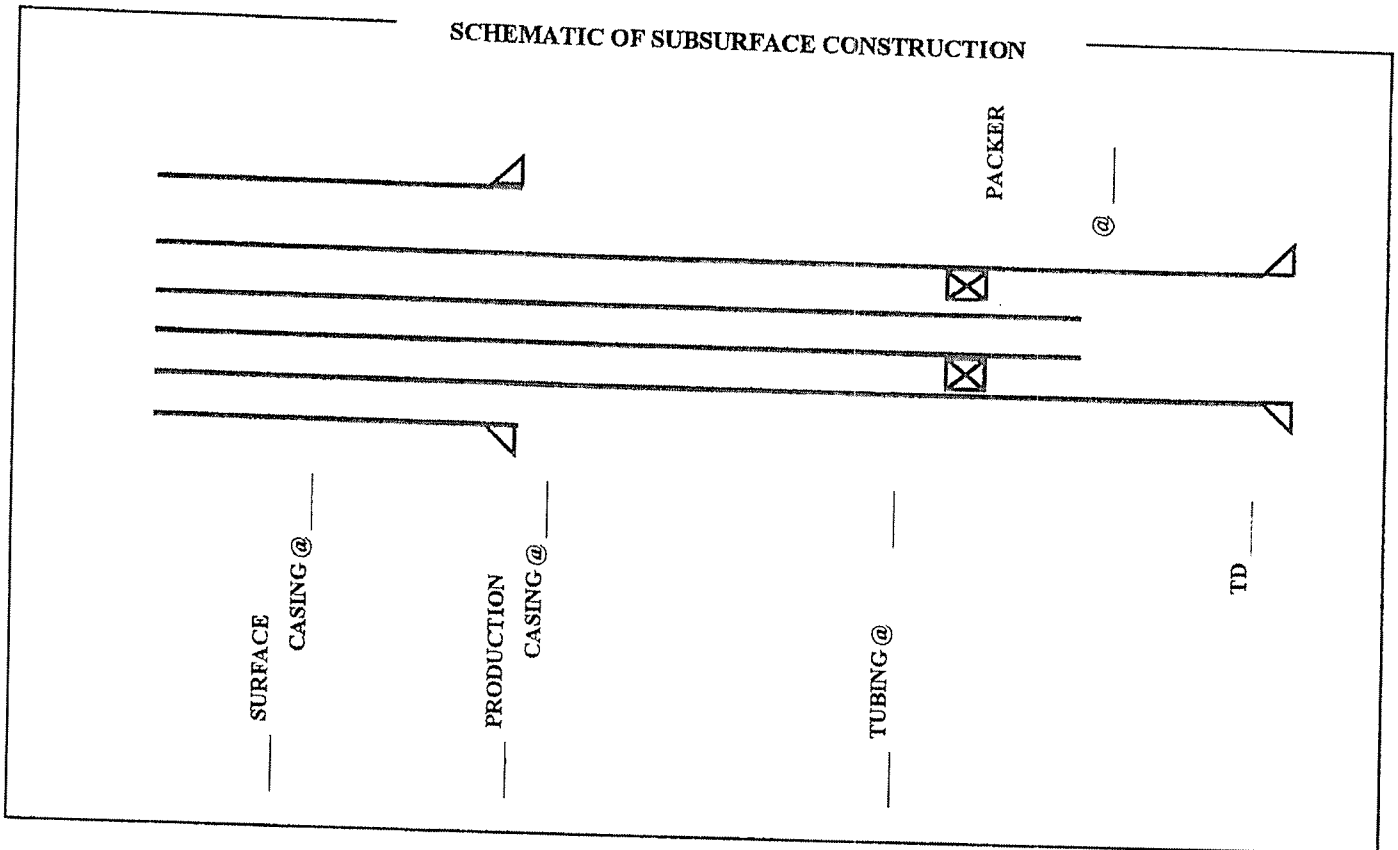
A. Indicate the estimated pressure to be used for injection of saltwater into the proposed injection well:
AVERAGE: _____ 1,050 psi _____ MAXIMUM: _____ 1,680 psi _____

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:
At the time of this application, there are no known wells currently penetrating and/or producing from the proposed disposal formations within the area of review.

36. **MAP.** Each application for a permit shall be accompanied by a map or maps showing and containing the following information:
- A. The subject tract of land on which the proposed injection well is to be located.
 - B. 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;
 - C. The geographic location of all wells, penetrating the formation proposed for injection regardless of status, within the area of review;
 - D. 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;
 - E. 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 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.



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, 2011.

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

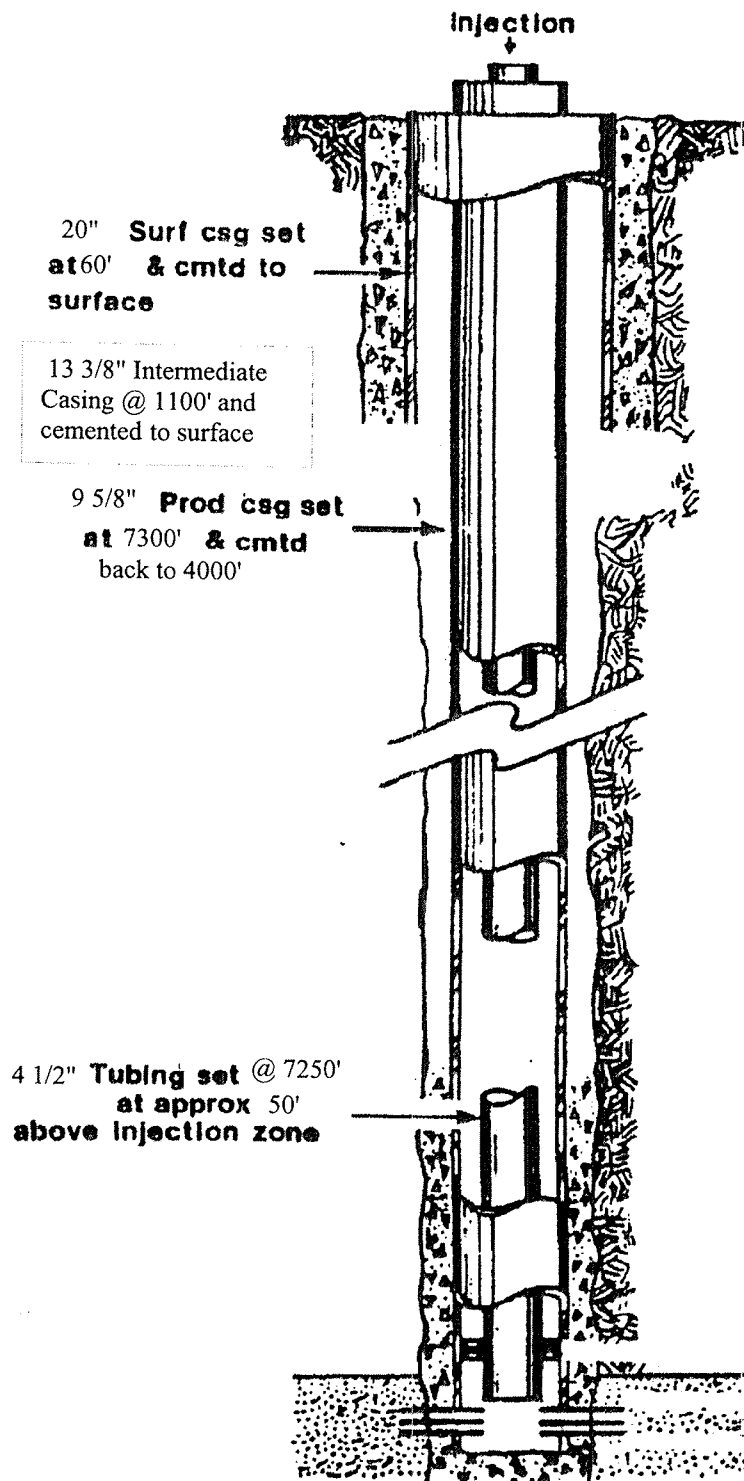


ANGELA K. MARIMPIETRI
 Notary Public - State of Ohio
 My Commission Expires 9/26/2015

Trumbull County, Weathersfield Twp.,
SWIW #22 AWMS #2

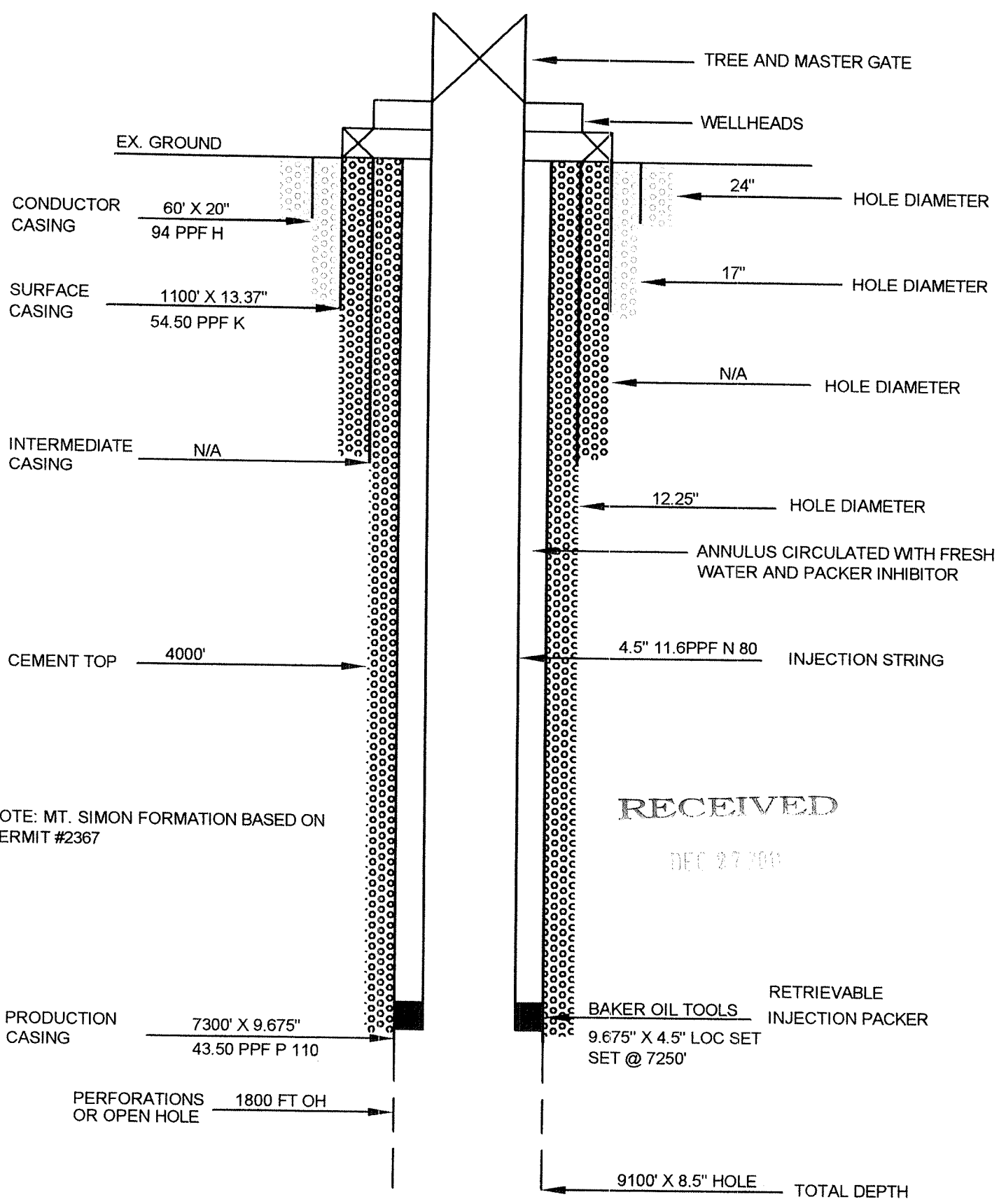
**Subsurface Construction
For Injection Well**

Maximum Injection Pressure: 1680 psi

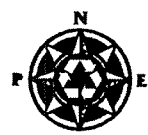


Total Depth: 9100'

J:\Projects\KUR003-INJECTION WELL\dwg\KUR003-FIG 1_MT SIMON SCH 2_122111.dwg - Dec 22, 2011 - 3:54pm - dbrookshire



AMERICAN WATER MANAGEMENT SERVICES, LLC		
INJECTION WELL NO. AWMS-2 DETAIL PROPOSED NILES INJECTION SITE		
SCALE: NOT TO SCALE	DATE: 12-21-11	DWG: KUR003-FIG 2



NORTH POINT
ENGINEERING

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

AWMS No. 2

Weathersfield Township

Trumbull County

Location: N 561766.2718/E 2443195.0238

Elevation: Approximately 908' MSL

EXHIBIT 1

SUPPLEMENT TO APPLICATION

PERMIT FOR SALTWATER INJECTION WELL (Form 210)

31) Proposed Injection Zone

Geologic Formation: Knox Dolomite and the Mt Simon

Injection Interval: 7,300' to 9,100'

Geologic Description: Dolomite and Sandstone

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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 9-5/8" casing will be pressure tested to 1,600 psi at the conclusion of the cementing process. Additionally, there will be a BOP test on the casing to 1,000 psi prior to drilling off the casing shoe into the open borehole. The 9-5/8" casing will be tested to 2,200 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 9-5/8" casing will be pressurized up to a minimum of 2,200 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 2,200 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 9-5/8" casing set and cemented above the injection horizon. Approximately 1,800' of 8-1/2" open hole will exist below the 9-5/8" 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 9-5/8" 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 and 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: 2,200 bbl/day

Maximum: 4,000 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: 1,050 psi

Maximum: 1,680 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

At the time of this application, there are no known wells currently penetrating and/or producing from the proposed disposal formations within the area of review.

36) Map

See attached Exhibit 3.

37) Schematic Drawing of Subsurface Construction

See attached Well Detail

AWMS No. 2

Weathersfield Township

Trumbull County

Location: N 561766.2718/E 2443195.0238

Elevation: Approximately 908' MSL

EXHIBIT 2

SUPPLEMENT TO APPLICATION

PERMIT FOR SALTWATER INJECTION WELL (Form 210)

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.