

Memo



TO
Cristine Matlock, EGLE

COPIES
Joe Rogers, EGLE
John McCabe, EGLE
Dave Favero, RACER Trust

DATE
January 27, 2022

PROJECT NUMBER
30112892

FROM
Patrick Curry, Arcadis

SUBJECT
Well Abandonment Memo - 2021
RACER Trust, Plants 2 and 3, Lansing, Michigan

Arcadis of Michigan, LLC (Arcadis) on behalf of the Revitalizing Auto Communities Environmental Response (RACER) Trust has completed 2021 monitoring well abandonment activities on Plants 2, 3, and 6 (Site) in Lansing, Michigan. The well abandonment work was initially proposed as part of the *1,4-Dioxane Monitoring Well Installation and Test Well Abandonment Work Plan – 2021* (deep wells, Arcadis 2021a) and the *RACER Lansing – Plant 3 Monitoring Well Repair & Additional MW Abandonment* workplan (perched wells, Arcadis 2021b). Final approval of the monitoring well abandonment list was provided via a Conditional Approval Letter from Kimberly Tyson on October 18, 2021. Nineteen of the 21 wells from the approved well abandonment list were successfully abandoned during two separate mobilizations:

- Abandonment of ten pilot test wells was completed between October 27 and November 8, 2021, using a rotary sonic drill rig (completed during the combined 1,4-dioxane investigation and pilot test well abandonment field event)
- Abandonment of nine of the eleven proposed shallow monitoring wells was completed on November 15, 2021.

All abandoned monitoring well locations are shown on **Figure 1**. Well Abandonment Logs are included in **Attachment 1**.

Pilot Test Well Abandonment

Ten weathered bedrock pilot test wells were abandoned during the first mobilization. They were originally installed to support 1,4-dioxane remedy pilot tests, but are no longer utilized for monitoring (i.e., not included in IGMP [Arcadis 2019] or used for biosparge performance monitoring), and are near other monitoring wells, rendering them redundant. The abandoned wells include:

- Plant 2:
 - AS-16-01
 - AS-16-02
 - TW-14-04
 - TW-14-05
 - TW-15-13
 - TW-16-01

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EGLE
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- Plant 3:
 - TW-14-07
 - TW-14-08
 - TW-14-09
 - TW-15-10

The well abandonments were completed as follows:

- Well casings were pressure grouted using a tremie pipe from the bottom up with a thick bentonite grout and allowed to set for up to 24 hours.
- After the grout was set up, the upper portion of each well was then over-drilled using a rotary sonic drill rig to a depth at least two feet into the underlying clay till (approximately 20-30 feet bgs). Sonic casing diameter was selected to remove all annular materials (8-inch diameter casing was selected for all wells, with the exception of TW-15-10, which required a 12-inch diameter casing).
- After the drill casing and annular materials were removed, the boreholes extending into the underlying clay were abandoned from the bottom up with neat cement, with ≤5% bentonite, to grade using a tremie pipe to seal the borehole.

Shallow Monitoring Well Abandonment

Nine of eleven proposed shallow monitoring wells were abandoned during the second mobilization. They were originally installed to monitor LNAPL, for site-wide groundwater elevation monitoring, for metals analysis, and as PFAS sentinel wells but are no longer utilized for monitoring. The abandoned wells include:

- Plant 3:
 - MW-06(3)
 - MW-12-19
 - MW-13-33
 - UNK-13
 - UNK-14
- Plant 6:
 - B-BP-16
 - MW-02-03(6) (instead of MW-02-02[6])
 - MW-14-68
 - SME-MW-02

During abandonment activities, MW-02-02(6) was mis-identified as MW-02-03(6). As a result, MW-02-03(6) was abandoned instead of MW-02-02(6). Well MW-02-03(6) is (was) included as part of the approved IGMP. Well MW-02-03(6) was a well utilized to monitor the stability of the perched 1,4-dioxane plume toe. Arcadis is reviewing the use of other nearby wells (e.g., MW-02-01(6) and MW-02-02(6)) as a suitable replacement.

The other two wells proposed for abandonment on Plant 6 – MW-02-01(6) and MWBP-12-UST5-6 – were unable to be located in the field and were not abandoned. Both wells were located in December after their locations were surveyed and will be included on the list of wells proposed to be abandoned in 2022.

Ms. Christine Matlock
EGLE
January 27, 2022

Well abandonments were completed as follows:

- Well casings were pressure grouted using a tremie pipe from the bottom up with a Type 1 Portland cement with five percent bentonite and allowed to cure for up to 24 hours.
- The full well casing was not over-drilled because of the potential risk of exacerbating shallow groundwater impacts, allowing vertical migration to deeper portions of the perched aquifer. Instead, the wells were abandoned in-place; the PVC well casing was cut 1-foot below grade and the cement was brought up to the ground surface.
 - For wells installed in gravel or degraded asphalt, the manhole casing and cement collar was removed, and void space was backfilled with Type 1 Portland cement.
 - For wells installed in concrete, the manhole collar was left in place and backfilled with the Type 1 Portland cement to grade.

Should you have any questions regarding the completed work, please contact David Favero at 217-741-6235 or Patrick Curry at 810-225-1926.

References:

Arcadis. 2019. Revised Interim Groundwater Monitoring Work Plan – 2019. RACER Trust, Plants 2, 3, & 6, Lansing, Michigan. October 28.

Arcadis. 2021a. 1,4-Dioxane Monitoring Well Installation and Test Well Abandonment Work Plan. RACER Trust, Plants 2 and 3, Lansing, Michigan. August 11, 2021.

Arcadis 2021b. Email Correspondence to Christine Matlock et.al. RE: RACER Lansing - Plant 3 Monitoring Well Repair & Additional MW Abandonment. August 3.

Enclosures:

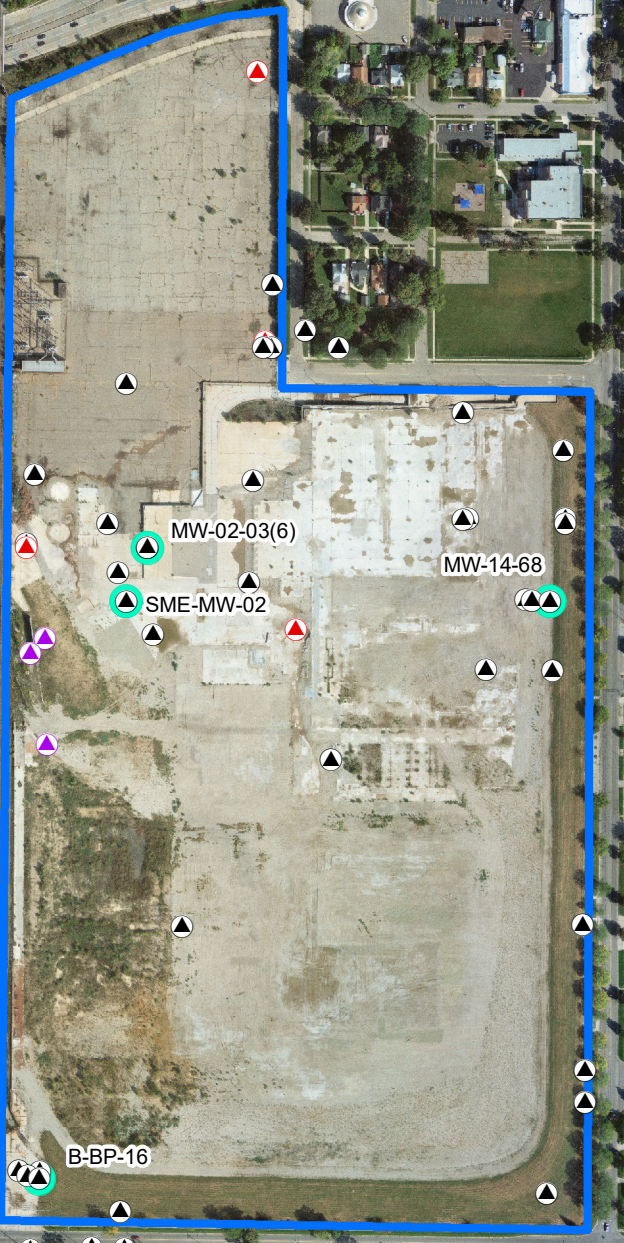
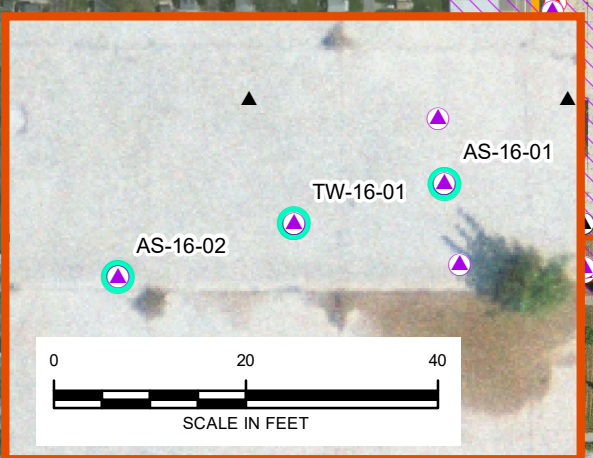
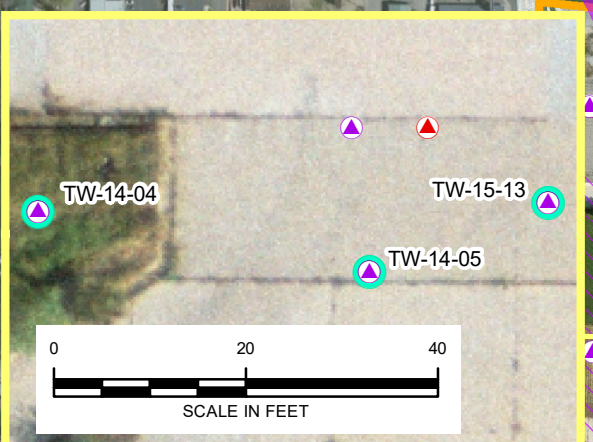
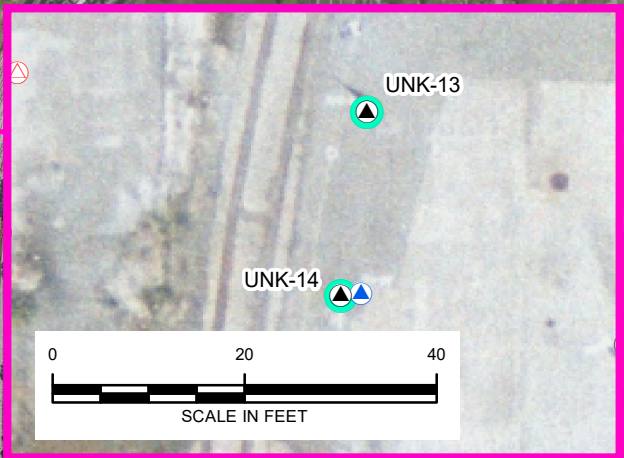
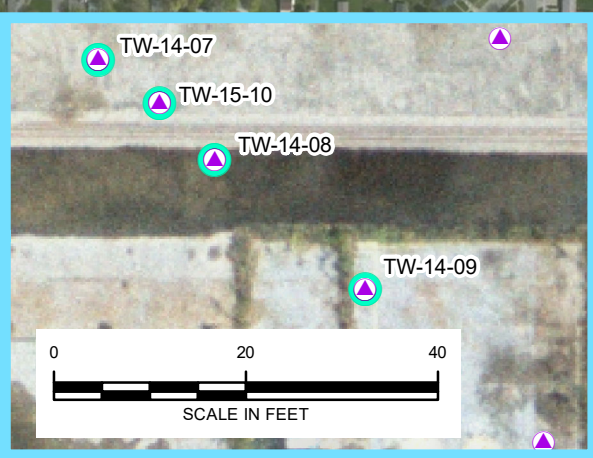
Figures

- 1 Summary of Monitoring Well Abandonment Locations

Attachments

- 1 Monitoring Well Abandonment Logs

Figures



CITY: Novi DIV: ENV PIC: J. BARRETT PM: T. LINDER TM: A. VILLHAUER TR: PROJECT NUMBER: 30075941 COORDINATE SYSTEM: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl
 T:_ENV\RACER\Buffalo\2021 MW Abandonment\Memo\Figure 1 - MW Abandonment.mxd PLOTTED: 1/26/2022 3:30:48 PM BY: MJoye

Legend

- LNAPL MONITORING WELL
- PERCHED ZONE MONITORING WELL
- DEEP OVBURDEN MONITORING WELL
- WEATHERED BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- ABANDONED WELLS
- BIOSPARGE
- FORMER ADAMS PLATING CO. LOWER 1,4-DIOXANE PLUME > DW CRITERIA
- LOWER 1,4-DIOXANE IMPACTS > DW CRITERIA

PLANT BOUNDARIES

- PLANT 2
- PLANT 3
- PLANT 6

RACER TRUST
 PLANTS 2, 3 & 6
 LANSING, MICHIGAN

**WEATHERED BEDROCK AND SHALLOW
 WELL ABANDONMENT LOCATIONS**

Attachment 1

Monitoring Well Abandonment Logs

RACER Lansing, AS-16-01, 2021-10-27

Created	2021-10-27 16:00:53 UTC by Austin Westhuis
Updated	2021-11-10 13:42:05 UTC by Austin Westhuis
Location	42.7367431903656, -84.5856218878967
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	AS-16-01
Date Installed	2016-06-02
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	75.7

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	77
Water Table Depth from TOC (in ft)	54.43
Casing Type	PVC
Screen Type	PVC
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	35
Grouted	Yes
Annulus Grouted From (ft)	77
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments

The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/29/21 to 35ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer



Signed 2021-10-27 16:09:06 UTC

Company/Position Arcadis/Staff Geologist

Date of Signature 2021-10-27

Have you performed work in accordance with the applicable QP/TGI? Yes

RACER Lansing, AS-16-02, 2021-10-27

Created	2021-10-27 16:43:37 UTC by Austin Westhuis
Updated	2021-11-10 13:43:36 UTC by Austin Westhuis
Location	42.7367279772113, -84.58556966864
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	AS-16-02
Date Installed	2016-08-15
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	76.48

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	78
Water Table Depth from TOC (in ft)	59.6
Casing Type	PVC
Screen Type	PVC
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	36
Grouted	Yes
Annulus Grouted From (ft)	78
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments

The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/29/21 to 36ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer



Signed 2021-10-27 16:45:15 UTC

Company/Position Arcadis/Staff Geologist

Date of Signature 2021-10-27

Have you performed work in accordance with the applicable QP/TGI? Yes

RACER Lansing, TW-14-04, 2021-10-27

Created	2021-10-27 17:24:32 UTC by Austin Westhuis
Updated	2021-11-08 19:49:40 UTC by Austin Westhuis
Location	42.7388080722119, -84.586021704678
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-14-04
Date Installed	2014-08-20
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	79.98
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	77
Water Table Depth from TOC (in ft)	69.88
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	25
Grouted	Yes
Annulus Grouted From (ft)	77
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/29/21 to 25ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer



Signed 2021-10-27 17:26:01 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-14-05, 2021-10-27

Created	2021-10-27 17:11:35 UTC by Austin Westhuis
Updated	2021-11-08 19:48:47 UTC by Austin Westhuis
Location	42.738833427469, -84.5859015081866
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-14-05
Date Installed	2014-08-21
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	78.51
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	77
Water Table Depth from TOC (in ft)	65.56
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	23
Grouted	Yes
Annulus Grouted From (ft)	77
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/28/21 to 23ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to read "Andrew Wilson". The signature is written in a cursive style with a large initial 'A' and 'W'.

Signed 2021-10-27 17:12:35 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-14-07, 2021-10-27

Created	2021-10-27 18:46:23 UTC by Austin Westhuis
Updated	2021-11-10 14:19:31 UTC by Austin Westhuis
Location	42.7421350591283, -84.5879233908696
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-14-07
Date Installed	2014-08-22
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	47.65
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	88
Water Table Depth from TOC (in ft)	89
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	28
Grouted	Yes
Annulus Grouted From (ft)	88
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
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Please remember to attach a site map to the well decommission log after printing.

Comments	<p>The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 11/3/21 to 28ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.</p>
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Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'A. M. W.', written in a cursive style.

Signed 2021-10-27 18:47:17 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-14-08, 2021-10-27

Created	2021-10-27 18:40:24 UTC by Austin Westhuis
Updated	2021-11-10 14:17:40 UTC by Austin Westhuis
Location	42.74211066779, -84.5879249834312
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-14-08
Date Installed	2014-08-25
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	90.02
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	89
Water Table Depth from TOC (in ft)	65.92
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	28
Grouted	Yes
Annulus Grouted From (ft)	89
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
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Please remember to attach a site map to the well decommission log after printing.

Comments	<p>The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 11/3/21 to 28ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.</p>
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Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'A. W. H.', written in a cursive style.

Signed 2021-10-27 18:41:22 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-14-09, 2021-10-27

Created	2021-10-27 18:38:06 UTC by Austin Westhuis
Updated	2021-11-10 14:16:16 UTC by Austin Westhuis
Location	42.7421087818618, -84.5879225526793
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-14-09
Date Installed	2014-08-26
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	90.95
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	89
Water Table Depth from TOC (in ft)	69.94
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	28
Grouted	Yes
Annulus Grouted From (ft)	89
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 11/2/21 to 28ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'Andrew', written in a cursive style.

Signed 2021-10-27 18:39:30 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-15-10, 2021-10-27

Created	2021-10-27 18:43:08 UTC by Austin Westhuis
Updated	2021-11-10 14:18:56 UTC by Austin Westhuis
Location	42.7421115478899, -84.587950799693
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-15-10
Date Installed	2015-05-18
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Layne Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	94.46
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	91
Water Table Depth from TOC (in ft)	67.88
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	4 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	28
Grouted	Yes
Annulus Grouted From (ft)	91
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
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Please remember to attach a site map to the well decommission log after printing.

Comments	<p>The 4-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 11/8/21 to 28ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.</p>
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Signature of Consultant/Engineer



Signed 2021-10-27 18:44:37 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-15-13, 2021-10-27

Created	2021-10-27 17:04:10 UTC by Austin Westhuis
Updated	2021-11-08 19:47:38 UTC by Austin Westhuis
Location	42.7388483053471, -84.5859719161732
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-15-13
Date Installed	2015-05-11
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	87.31
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	84
Water Table Depth from TOC (in ft)	65.78
Casing Type	PVC
Screen Type	Stainless Steel

Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	23
Grouted	Yes
Annulus Grouted From (ft)	84
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments

The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/28/21 to 23ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to read "Andrew White". The signature is fluid and cursive, with a long horizontal stroke at the end.

Signed 2021-10-27 17:05:46 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, TW-16-01, 2021-10-27

Created	2021-10-27 16:28:45 UTC by Austin Westhuis
Updated	2021-11-10 13:42:44 UTC by Austin Westhuis
Location	42.7366146538805, -84.5855675731642
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-10-27

Well Information

Well ID	TW-16-01
Date Installed	2016-08-16
Date Abandoned	2021-10-27

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Cascade Drilling
Depth to Bottom (ft)	78.2

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	78
Water Table Depth from TOC (in ft)	73.55
Casing Type	PVC
Screen Type	PVC
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	28
Grouted	Yes
Annulus Grouted From (ft)	78
Annulus Grouted To (ft)	0
Grout Type	Bentonite
Grout Mixture	Slurry
Grout Method	Tremie pipe
Crew	Chris Barden, Shane Hix, and Raymond Droan

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments

The 2-inch well casing was pressure grouted from the bottom up on 10/27/21 with a thick bentonite grout and allowed to setup for at least 24 hours. Once the grout was set up, the upper portion of the well was over drilled using a rotary sonic drill rig on 10/29/21 to 28ft bgs (at least two feet into the underlying clay till). 8-inch diameter sonic casing was selected to remove all annular materials. Once the drill casing and annular materials were removed, the borehole extending into the underlying clay was abandoned from the bottom up with cement with less than 5% bentonite added using a tremie pipe to seal the borehole.

Signature of Consultant/Engineer



Signed 2021-10-27 16:31:03 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-10-27
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, B-BP-16, 2021-11-15

Created	2021-11-15 18:23:43 UTC by Austin Westhuis
Updated	2021-11-15 19:07:58 UTC by Austin Westhuis
Location	42.7343505341958, -84.5816332754535
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	B-BP-16
Date Installed	1993-11-02
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Install Drilling Firm	Geo-Tek Inc.
Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	11.75


Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	12
Water Table Depth from TOC (in ft)	2.16
Casing Type	PVC
Inside Diameter	4 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	12
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
Please remember to attach a site map to the well decommission log after printing.	
Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement. Well was dry.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to read "Andrew Wal". The signature is written in a cursive style with a long horizontal stroke at the end.

Signed 2021-11-15 18:25:35 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, MW-02-02(6), 2021-11-15

Created	2021-11-15 17:19:07 UTC by Austin Westhuis
Updated	2021-11-15 17:50:55 UTC by Austin Westhuis
Location	42.737490814219, -84.5806959272219
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	MW-02-02(6)
Date Installed	2002-11-08
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Install Drilling Firm	Toltest
Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	44.59
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	45
Water Table Depth from TOC (in ft)	28.96
Casing Type	PVC
Screen Type	PVC

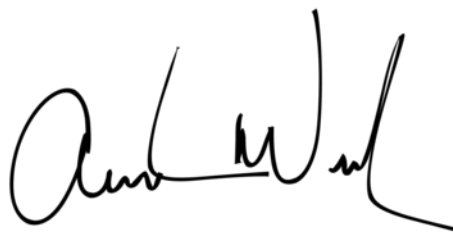
Inside Diameter	2 inch
Abandoned Screen Length (ft)	10
Casing	Cut
Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	45
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
Please remember to attach a site map to the well decommission log after printing.	
Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.

Signature of Consultant/Engineer



Signed 2021-11-15 17:25:17 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, MW-06(3), 2021-11-15

Created	2021-11-15 16:23:27 UTC by Austin Westhuis
Updated	2021-11-15 19:34:20 UTC by Austin Westhuis
Location	42.7451604651685, -84.5840538852704
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	MW-06(3)
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	11.53
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	11.5
Casing Type	PVC
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	1

Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	11.5
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
Please remember to attach a site map to the well decommission log after printing.	
Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.
Signature of Consultant/Engineer	

Ami Wark

Signed 2021-11-15 16:24:32 UTC

Company/Position	Arcadis/Staff Geologist
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Date of Signature 2021-11-15

Have you performed work in accordance with the applicable QP/TGI? Yes

RACER Lansing, MW-12-19, 2021-11-15

Created	2021-11-15 15:13:28 UTC by Austin Westhuis
Updated	2021-11-15 15:29:12 UTC by Austin Westhuis
Location	42.7446881449248, -84.5835102350307
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	MW-12-19
Date Installed	2012-11-20
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Install Drilling Firm	Boart Longyear
Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	8.91

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	10
Water Table Depth from TOC (in ft)	2.58
Casing Type	PVC
Screen Type	Stainless Steel
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	10
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Additional Photos



Providing Location Sketch or Site Map?

Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments

Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.

Signature of Consultant/Engineer

Signed 2021-11-15 15:26:08 UTC

Company/Position

Arcadis/Staff Geologist

Date of Signature

2021-11-15

Have you performed work in accordance with the applicable QP/TGI? Yes

RACER Lansing, MW-13-33, 2021-11-15

Created	2021-11-15 13:55:54 UTC by Austin Westhuis
Updated	2021-11-15 14:29:30 UTC by Austin Westhuis
Location	42.7396023413564, -84.5858251490487
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	MW-13-33
Date Installed	2013-07-24
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Install Drilling Firm	Stock Drilling
Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	19.19

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	17
Water Table Depth from TOC (in ft)	7.77
Casing Type	PVC
Screen Type	Stainless Steel
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	17
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
Please remember to attach a site map to the well decommission log after printing.	
Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'Andrew', written in a cursive style.

Signed 2021-11-15 13:57:52 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, MW-14-68, 2021-11-15

Created	2021-11-15 17:56:40 UTC by Austin Westhuis
Updated	2021-11-15 18:17:42 UTC by Austin Westhuis
Location	42.7371542388971, -84.5777723193956
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	MW-14-68
Date Installed	2014-08-29
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Install Drilling Firm	Cascade Drilling
Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	44.08

Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	41
Casing Type	PVC
Screen Type	Stainless Steel
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut
Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	41
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
Please remember to attach a site map to the well decommission log after printing.	
Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement. Well was dry.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to read 'A. W. W.', with a long horizontal stroke extending to the right.

Signed 2021-11-15 17:58:35 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, SME-MW-02, 2021-11-15

Created	2021-11-15 17:27:37 UTC by Austin Westhuis
Updated	2021-11-15 17:53:28 UTC by Austin Westhuis
Location	42.7375709452133, -84.5807065722389
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	SME-MW-02
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	37.3
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	38
Water Table Depth from TOC (in ft)	32.02
Casing Type	PVC
Inside Diameter	2 inch
Abandoned Screen Length (ft)	5
Casing	Cut

Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	38
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.

Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'Andrew L'.

Signed 2021-11-15 17:29:39 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, UNK-13, 2021-11-15

Created	2021-11-15 14:48:34 UTC by Austin Westhuis
Updated	2021-11-15 16:16:15 UTC by Austin Westhuis
Location	42.7452796977411, -84.5840223693145
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	UNK-13
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	15.01
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	16
Water Table Depth from TOC (in ft)	0
Casing Type	PVC
Inside Diameter	4 inch
Abandoned Screen Length (ft)	5
Casing	Cut

Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	16
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map?	Site Map
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Please remember to attach a site map to the well decommission log after printing.

Comments	Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.
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Signature of Consultant/Engineer

A handwritten signature in black ink, appearing to be 'A. W. L.', written in a cursive style.

Signed 2021-11-15 15:31:36 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes

RACER Lansing, UNK-14, 2021-11-15

Created	2021-11-15 14:45:01 UTC by Austin Westhuis
Updated	2021-11-15 16:19:09 UTC by Austin Westhuis
Location	42.7452199347715, -84.5840056893272
Have you read the Quality Procedure (QP) and/or Technical Guidance Instruction (TGI) relevant to this use case?	Yes
Selecting "Yes" confirms your digital signature as having read the QP and/or TGI relevant to this use case.	

General Section

Select Project Number	RACER Trust, 30075941, RACER Lansing 2021
Client	RACER Trust
Project Number	30075941
Site Name	RACER Lansing
County	Ingham
Date	2021-11-15

Well Information

Well ID	UNK-14
Date Abandoned	2021-11-15

Photo of Well Before Abandonment



Abandon Drilling Firm	Terra Probe Environmental
Depth to Bottom (ft)	15.5
Screen depth measured from TOC or Ground Surface	Ground Surface
Screen Depth from Ground Surface (ft)	15.4
Water Table Depth from TOC (in ft)	0.21
Casing Type	PVC
Inside Diameter	4 inch
Abandoned Screen Length (ft)	5
Casing	Cut

Casing Cut Depth (ft bgs)	1
Grouted	Yes
Annulus Grouted From (ft)	0
Annulus Grouted To (ft)	15.4
Grout Type	Cement
Grout Method	Tremie pipe
Crew	Jason Schaefer and Steven Shenofsky

Photo of Area After Abandonment



Providing Location Sketch or Site Map? Site Map

Please remember to attach a site map to the well decommission log after printing.

Comments Monitoring well pressure grouted from the bottom up using Type 1 Portland cement.

Signature of Consultant/Engineer

Signed 2021-11-15 16:18:17 UTC

Company/Position	Arcadis/Staff Geologist
Date of Signature	2021-11-15
Have you performed work in accordance with the applicable QP/TGI?	Yes