**To:** Saari, Christopher A - DNR[Christopher.Saari@wisconsin.gov]; Dave Larsen[dlarsen@reiengineering.com]; Egan, Robert[egan.robert@epa.gov]
**Cc:** Kamke, Sherry[Kamke.Sherry@epa.gov]; Kady, Thomas[Kady.Thomas@epa.gov]; Dee.allen@ldftribe.com[Dee.allen@ldftribe.com]
**From:** Hanson, Kristen
**Sent:** Wed 11/9/2016 7:11:35 PM
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site
removed.txt

Good Afternoon,

I am not available this afternoon. I am available tomorrow after 2 pm or next week.

Kristen

**From:** Saari, Christopher A - DNR [mailto:Christopher.Saari@wisconsin.gov]
**Sent:** Wednesday, November 09, 2016 12:58 PM
**To:** Dave Larsen; Egan, Robert; Hanson, Kristen
**Cc:** Kamke, Sherry; Kady, Thomas
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

I'm tied up on a call from 2 till 3 but otherwise open.

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Chris Saari

Phone: (715) 685-2920

Christopher.Saari@Wi.gov

**From:** Dave Larsen [mailto:dlarsen@reiengineering.com]
**Sent:** Wednesday, November 09, 2016 11:27 AM

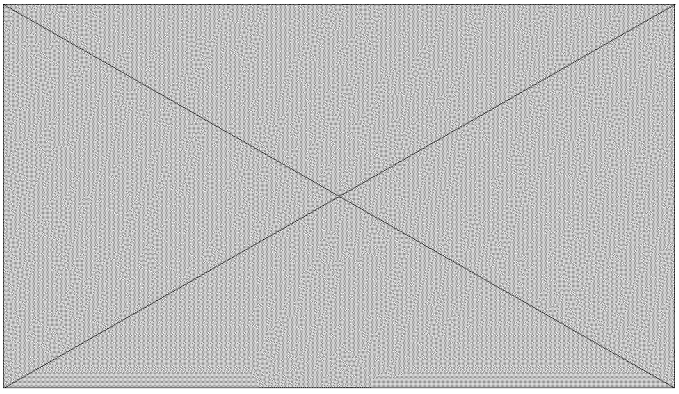
**To:** Egan, Robert; Saari, Christopher A - DNR; KHanson@ldftribe.com
**Cc:** Kamke, Sherry; Kady, Thomas; Robinson, John H - DNR
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

Just following up to see if there is a possibility of installing the remaining perimeter wells at Tower yet this year. Bob stated that he should be available to discuss well locations and construction details today, I also should be in the office all day. Prompt response is appreciated.

Thank you,

David N. Larsen P.G

Hydrogeologist / Professional Geologist



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**From:** Egan, Robert [mailto:egan.robert@epa.gov]
**Sent:** Friday, November 04, 2016 1:40 PM

**To:** Dave Larsen <dlarsen@reiengineering.com>; Saari, Christopher A - DNR <Christopher.Saari@wisconsin.gov>; KHanson@ldftribe.com
**Cc:** Kamke, Sherry <Kamke.Sherry@epa.gov>; Kady, Thomas <Kady.Thomas@epa.gov>; Robinson, John H - DNR <John.Robinson@wisconsin.gov>
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

Thanks for getting back to everyone.

We have not yet heard back from Kristen about her preferences on locations. I would like to discuss ideas about locations if everyone is available and ready.

I am available Monday through Wednesday next week.

Bob Egan

Corrective Action Manager

Underground Storage Tanks Section

RCRA Branch

EPA Region 5

(312) 886-6212

(312) 692-2911 (fax)

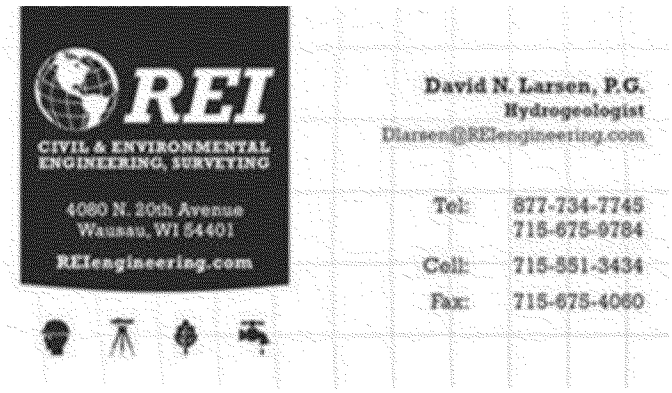
**From:** Dave Larsen [mailto:dlarsen@reiengineering.com]
**Sent:** Friday, November 04, 2016 1:22 PM
**To:** Egan, Robert <egan.robert@epa.gov>; Saari, Christopher A - DNR <Christopher.Saari@wisconsin.gov>; KHanson@ldftribe.com
**Cc:** Kamke, Sherry <Kamke.Sherry@epa.gov>; Kady, Thomas <Kady.Thomas@epa.gov>
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

Sounds good Bob and I do appreciate you taking the lead and providing a recommendation we can work from. Could we possibly have further discussion next week to firm up final locations, depths and screen lengths along with construction preferences? This will allow me to reach out to drilling firms to determine interest/availability and we may be able to get the wells installed yet this year.

Thank you,


David N. Larsen P.G

Hydrogeologist / Professional Geologist

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**From:** Egan, Robert [mailto:egan.robert@epa.gov]
**Sent:** Friday, November 04, 2016 12:08 PM
**To:** Dave Larsen <dlarsen@reiengineering.com>; Saari, Christopher A - DNR <Christopher.Saari@wisconsin.gov>; KHanson@ldftribe.com
**Cc:** Kamke, Sherry <Kamke.Sherry@epa.gov>; Kady, Thomas <Kady.Thomas@epa.gov>
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

Dave,

Thanks for the information. My locations were just to get the discussion started. I remember there also being a VAS location west of the 16 well nest and that the plume seems narrow in that area. I think we can all talk about whether there is a need to have wells near the edge of the plume. With the medium and deep wells at 16 being highly contaminated we would normally put wells outside this area but there is previous information in that area that shows that contaminant levels quickly drop off to the west.

Bob

Bob Egan

Corrective Action Manager

Underground Storage Tanks Section

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**From:** Dave Larsen [mailto:dlarsen@reiengineering.com]
**Sent:** Friday, November 04, 2016 9:18 AM
**To:** Saari, Christopher A - DNR <Christopher.Saari@wisconsin.gov>; Egan, Robert <egan.robert@epa.gov>; KHanson@ldftribe.com
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

Bob, I attached figures depicting locations of the MW13 well nest from the initial investigation along with summary lab tables. Is this sufficient to close the data gap west of MW16? I know

the data is 10+ years old, but may be useful. The shallow well (13s) was screened from 33-28' and the deep (13d) was screened from 50-45'.

Assumed well depths:

Shallow wells: 15' depth with 10' screen lengths

Mid-Range: 40' depth with 5' screen

Deep: 60' depth with 5' screen. Well location #4 – well to be screened from 55-50' based on MIP data.

#4 location may need to be drilled with an ATV rig – I will need to discuss with drillers.

All PZ's to be blind drilled and grouted and MW's are to be logged.

Any thoughts on flushmount versus stick-up wells?

Once we agree I will prepare cost approval request and hopefully schedule work.

Thank you,

David N. Larsen P.G

Hydrogeologist / Professional Geologist

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**From:** Saari, Christopher A - DNR [mailto:Christopher.Saari@wisconsin.gov]
**Sent:** Thursday, November 03, 2016 4:25 PM
**To:** Egan, Robert <egan.robert@epa.gov>; KHanson@ldftribe.com; Dave Larsen <dlarsen@reiengineering.com>
**Cc:** Kamke, Sherry <Kamke.Sherry@epa.gov>; Kady, Thomas <Kady.Thomas@epa.gov>
**Subject:** RE: Recommendations for additional well locations at the Tower Standard site

I would concur with these suggestions, and would add a shallow well to the nest proposed between MIP3 and MIP13, for data consistency purposes.

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Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Chris Saari

Phone: (715) 685-2920

Christopher.Saari@Wi.gov

**From:** Egan, Robert [mailto:egan.robert@epa.gov]
**Sent:** Wednesday, November 02, 2016 8:08 AM
**To:** KHanson@ldftribe.com; Saari, Christopher A - DNR; Dave Larsen
**Cc:** Kamke, Sherry; Kady, Thomas
**Subject:** Recommendations for additional well locations at the Tower Standard site

All,

Here are some suggestions for locations to fill in gaps in the well network:

1. A background well nest near Highway 70 with shallow and mid-depth range wells.

2. Shallow and mid-depth range wells at a location south and east (about 30-40 feet) of the MIP2 location.

3. A location between MIP13 and MIP3 where contamination is at depth. Mid-range and deeper wells.

4. If access is possible, wells near the MIP14 location. Shallow, mid-depth and deep.

5. A location somewhere to the west or northwest of the MW16 wells to try to find the edge of the plume in that area. Shallow, mid-depth and deep.

Bob

Bob Egan

Corrective Action Manager

Underground Storage Tanks Section

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