

Alisa J. Anderson

From: Kyle Steele
Sent: Monday, August 18, 2014 3:33 PM
To: Alisa J. Anderson
Subject: FW: City of Moscow - Data Gap Memo

For your records!

Kyle

From: Jon Munkers [mailto:Jon.Munkers@terragraphics.com]
Sent: Thursday, August 14, 2014 11:50 AM
To: Bruce.Wicherski@deq.idaho.gov; Eric.Traynor@deq.idaho.gov; Kyle Steele
Cc: Robin Nimmer; Steve.Gill@deq.idaho.gov
Subject: RE: City of Moscow - Data Gap Memo

Bruce –

Thanks. We will plan on capturing specific locations within the QAPP/Work Plan. DEQ will have an opportunity to review the QAPP and we will work with you prior to make sure everyone is good with the specific sample locations. Thanks – Jon

Jon Munkers
jon.munkers@terragraphics.com
208-336-7080

From: Bruce.Wicherski@deq.idaho.gov [mailto:Bruce.Wicherski@deq.idaho.gov]
Sent: Thursday, August 14, 2014 11:48 AM
To: Jon Munkers; Eric.Traynor@deq.idaho.gov; ksteele@ci.moscow.id.us
Cc: Robin Nimmer; Steve.Gill@deq.idaho.gov
Subject: RE: City of Moscow - Data Gap Memo

Jon-

The revised data gap memo looks OK with just a few minor comments:

- I would suggest perhaps shifting some of the proposed sample locations a bit; for the four in the vicinity of the tanks I would also try and place borings in the area south of the tanks as well. I would also suggest shifting the locations of the borings in the asphalt area for more complete coverage rather than the straight line depicted, unless there was a specific rationale for that configuration.
- The three proposed boring locations in DU3 aren't shown in the figure.

Thanks. If you have questions please contact me.

Bruce

From: Jon Munkers [mailto:Jon.Munkers@terragraphics.com]
Sent: Friday, August 01, 2014 11:04 AM
To: Bruce Wicherski; Eric Traynor; ksteele@ci.moscow.id.us

Cc: Robin Nimmer
Subject: City of Moscow - Data Gap Memo

Bruce –

Please see each response below and the attached data gap memo attached for your review. Let me know if you have any questions. We would like to start development of the QAPP starting next week. Thanks – Jon

From: Bruce.Wicherski@deq.idaho.gov [<mailto:Bruce.Wicherski@deq.idaho.gov>]
Sent: Wednesday, July 23, 2014 3:02 PM
To: Jon Munkers; Eric.Traynor@deq.idaho.gov; Steve.Gill@deq.idaho.gov
Cc: Robin Nimmer; ksteele@ci.moscow.id.us
Subject: RE: City of Moscow - Data Gap Memo

Jon-

We have the following comments on the revised data gap memo:

- Figure 1 is referenced but not included in the document. – **Figure 1& 2 included**
- How the eight soil boring locations are distributed between the two areas is not indicated. Also, one of the areas mentioned is the “asphalt” area. Should this be more specifically identified as associated with MW-4 where the high nitrate values were found? **Figure 2 shows the proposed locations for the borings that include the area surrounding MW-4**
- The eight additional soil borings currently only include analysis for nutrients. Thought we agreed during our discussion that they should include pesticides and possibly metals. **We focused additional pesticide analysis in DU3. We have added language to include additional pesticide and metals analysis, specifically in the area currently covered by asphalt.**
- The three borings in DU3 are only for pesticides; likewise should include nutrients and metals. **Nutrient sampling was focused in the area of highest potential based upon past use. The potential data gap identified for this area focused on pesticides. The goal being to determine if there were pesticides at deeper depth intervals in soil. We added additional nutrient analysis within this area.**
- For all the soil borings proposed how will sample depths for soil analysis be determined since only one or two samples are proposed per boring? What are the goals of the sampling in terms of the potential risks being evaluated? **The QAPP will provide specific details on the strategy for sample collection depths and DQOs. The overall goal is to determine potential nutrient sources as well as evaluate risk using the REM for pesticides (the specific COC already identified) in soils.**
- TG was going to measure water levels prior to the revision to evaluate current flow direction. **TerraGraphics did measure the water levels. However, Tetra Tech’s report does not provide enough information to determine with confidence GW flow direction. We recommend surveying the wells prior to finalizing the QAPP to direct the location of a potential down gradient ground water well.**

Bruce

From: Jon Munkers [<mailto:Jon.Munkers@terragraphics.com>]
Sent: Monday, July 21, 2014 1:05 PM
To: Bruce Wicherski; Eric Traynor; Steve Gill
Cc: Robin Nimmer; ksteele@ci.moscow.id.us
Subject: City of Moscow - Data Gap Memo

Bruce, Eric, Steve – Please find attached the revised Data Gap Memo with additions per our discussion. We will move forward with development of the QAPP for this work to fill these gaps. Thanks – Jon

Jon Munkers
jon.munkers@terragraphics.com

From: Bruce.Wicherski@deq.idaho.gov [<mailto:Bruce.Wicherski@deq.idaho.gov>]
Sent: Friday, July 11, 2014 4:46 PM
To: Jon Munkers; Eric.Traynor@deq.idaho.gov; Steve.Gill@deq.idaho.gov
Cc: Robin Nimmer
Subject: RE: City of Moscow

Jon-

I believe that captured most of it. One thing I would add is that the soil borings should also include pesticides and metals. There was specific discussion about potential sources of nutrients related to the high groundwater nitrates in the vicinity of MW-4. And there was the task to try and firm up as much as possible parcel redevelopment objectives/scenarios.

Bruce

From: Jon Munkers [<mailto:Jon.Munkers@terragraphics.com>]
Sent: Friday, July 11, 2014 4:12 PM
To: Bruce Wicherski; Eric Traynor; Steve Gill
Cc: Robin Nimmer
Subject: City of Moscow

Bruce, Eric, Steve –

I wanted to capture our conversation yesterday and make sure I didn't miss anything.

- We will gather water level measurements today or early next week to vet the groundwater direction.
- We will update the data gap memo to additionally include:
 - Two new ground water wells. One located central to the site in the potential source area near the historic above ground tanks. The other well will be located down gradient, likely northwest of MW-2 across 6th street in the ROW.
 - We will extend the GW analyte list to include pesticides and metals.
 - We will evaluate the site soils for potential nutrient source locations. Expanding the number of borings.
 - We will evaluate if there is a need to explore sampling at depth in Tetra Tech's DU3 (orange on the site map)
- After we finalize the data gaps memo, we will develop a QAPP for EPA and DEQ approval
- TG will then perform the field work and deliver a data summary memorandum.
- After the assessment, TG will work with DEQ in performing a RA using the new information.
- Based upon the RA, a new ABCA will be developed with a Workplan through the VCP for remediation activities.
- The city will work with EPA on an grant extension (likely 6-month)
- I will connect with Kyle next week and brief him
- DEQ is good with the RCRA position memo. The only comment might be to list documents/records used in the review?

Let me know if I missed anything. We should have this to you by the end of next week. Thanks – Jon

Jon Munkers
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Alisa J. Anderson

Wastes known to be harmful to

From:

Kyle Steele

Sent:

Monday, August 18, 2014 3:31 PM

To:

Gary Riedner; Alisa J. Anderson

Subject:

Brownfield Update re: 6th and Jackson Property

Attachments:

Final - 6th and Jackson Data Gaps_080114.pdf; Proposed Boring and Well Locations 2014 - version 2.pdf

Brownfield Team:

human health and the environment, when not managed properly regardless of concentrations Resource Conservation + Recovery Act

Although Alisa has set up a conference call with Jon Munkers to discuss the URA property cleanup project at 6th and Jackson Streets, I wanted to reiterate what has occurred on-site over the last few years, where we are at with the project now, and when remediation will likely occur in preparation of the call.

The Moscow URA entered into the Voluntary Cleanup Program as requested by IDEQ in May 2014. The program provides DEQ oversight and is the only real way to get environmental covenants on a property.

- Tetra Tech Completed the initial characterization and risk assessment (with the coalition grant) that showed that there were low levels of DDT and Dieldren above the Risk Based Criteria using the Idaho DEQ Risk Evaluation Manual (REM).
- Tetra Tech completed an Analysis of Brownfields Cleanup Alternatives (ABCA) that identified soil removal as the preferred option.
- The City wrote and was awarded a cleanup grant.
- The City asked TerraGraphics to perform additional assessment to delineate the extent of the previously identified DDT and Dieldren concentrations and update the ABCA as needed.
- The additional assessment assisted in delineating the depth of DDT and dieldrin concentrations and further zeroed in on the potential source area.
- IDEQ expressed concerns with the initial assessment, primarily with regard to nutrients.
- IDEQ also expressed concerns that the site contained RCRA waste that would not be able to be remediated in the proposed method of cleanup by the original ABCA. TerraGraphics prepared a memo describing the City's position on the RCRA issues and how RCRA did not apply to the identified wastes. DEQ concurred with that document and the RCRA issue appears behind us. As Jeff mentioned in his previous email, this was a primary reason the URA entered into the VCP. We were able to argue that the DDT is legacy waste that was applied accordingly and isn't hazardous.
- IDEQ expressed concerns that the nutrients were not fully characterized onsite with Tetra Tech's assessment report.
- To fully get everyone on the same page, TerraGraphics (TG) suggested completing a Data Gaps memo to capture DEQs concerns. That memo (**attached**) has been through review 3 times and we now are aligned with the path moving forward. This just occurred last Thursday, August 14, 2014.
 - 1 – TG will complete a QAPP to perform additional characterization using the assessment funding the City has. The City will work with EPA to extent the length of the grant to finish this work.
 - 2 – TG will perform the additional characterization (including 2 additional monitoring wells and additional soil sampling). MW-6 (see attached well locations pdf) will be dependent on groundwater gradient. Soils will be sampled for nutrients, DDT, Dieldren, and metals. The wells will characterize potential nutrient issues. (see data gap memo)
 - 3 – An updated Risk Assessment will likely follow using both existing and newly obtained data.



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MEMORANDUM

To: Bruce Wicherski, IDEQ, Boise

From: Robin Nimmer, TerraGraphics, Moscow on behalf of the City of Moscow

Date: August 1, 2014

Project Code: 13068

Subject: City of Moscow Brownfields 6th and Jackson Street Property Data Gaps

1 Introduction and Purpose

The 217 and 317 E. 6th Street (aka 6th and Jackson Street) property is included in the Greater Moscow Area Coalition Brownfield Project. Strata (2008 and 2010) conducted Phase I Environmental Site Assessments (ESAs) of the site. Tetra Tech (2013) conducted a Phase II ESA at the site in spring 2012 to investigate potential soil and groundwater contamination from the bulk storage of agricultural chemicals and petroleum hydrocarbons associated with a small heating oil underground storage tank in the eastern area of the site. TerraGraphics conducted additional characterization of surface soils in November 2013 for agricultural chemicals in an area identified in the Phase II ESA as contaminated and requiring cleanup. Samples were collected in an effort to define removal volume for disposal purposes. However, several data gaps remain. The purpose of this memo is to summarize results of the previous site investigations, identify and present those data gaps, and provide recommendations to fill them.

2 Summary of Previous Investigations

2.1 Phase II ESA

Tetra Tech sampled surface soils (top 6 inches) and soils at depth from borings, installed four monitoring wells, and sampled groundwater as part of the Phase II ESA. The lab analyzed soil and groundwater samples for metals, pesticides, and herbicides. The lab also analyzed groundwater samples for nutrients (nitrite/nitrate, total phosphorus, and ammonia). Depth to groundwater was measured in the wells and used to develop a groundwater elevation contour map.

Several contaminants of potential concern (COPCs) in surface soil, subsurface soil, and groundwater exceeded their corresponding Initial Default Target Levels (IDTLs; IDEQ 2004). As a result, Tetra Tech conducted a site-specific risk assessment using the Idaho Department of Environmental Quality (IDEQ) Risk Evaluation Manual (REM; IDEQ 2004). The risk assessment analyzed the risk and hazard that contaminants found in the soil and groundwater may have on human health and the environment. Tetra Tech completed the site-specific risk assessment on the entire site to obtain Remedial Action Target Levels-Scenario 1 (RATLs-1: residential conditions) for the COPCs. Site-specific risk assessment findings indicated that DDT in the southern half of decision unit 2 (DU2, the central site bulk chemical storage and railroad spur), and dieldrin in the northern half of DU2, were contaminants of concern in soil less than 6 inches. Figure 1 is a site map including DUs, sampling locations, and historical use areas.

Results from the Phase II ESA groundwater sampling indicate the IDTLs are exceeded for nitrite/nitrate as nitrogen at all wells except S2-MW-01, arsenic at all wells, and lead at S2-MW-03. Concentrations of nitrite/nitrate as nitrogen are highest at well S2-MW-04, located near the property boundary in the southwest area of the site, and concentrations decline down-gradient at well S2-MW-03. This suggests an up-gradient source, assuming the gradient is correct. Well S2-MW-02 has the highest concentrations of other nutrients, total phosphorus and ammonia, neither of which has an IDTL. It is unknown if nutrient concentrations at this well are from potential onsite soil contamination or an offsite up-gradient source. Arsenic concentrations at all the wells and lead at S2-MW-03 are near the laboratory limits of quantitation. It is unknown if these concentrations are within background levels.

2.2 Phase II ESA Follow-On

TerraGraphics conducted a follow-on study in November 2013 to further delineate the dieldrin and DDT soil concentrations in DU2 for the purpose of defining source area removals spatially as well as with depth. DU2 was subdivided into four subunits. The field crew collected composite soil samples at specified depth intervals from 20 soil borings (5 in each subunit). Samples from the 0 to 6-inch depth were not submitted to the lab because this depth was previously characterized.

Dieldrin was not detected in any of the samples from the 6 to 12-inch depth and thus was not analyzed in deeper samples. DDT was detected in all four samples at the 6 to 12-inch depth, with concentrations from subunits in the southern half of DU2 exceeding the RATL-1 values developed from Tetra Tech's report. The lab analyzed samples from depths to 48 inches from these two southern subunits for DDT. TerraGraphics ran the REM model treating the 6- to 12-inch depth range as surficial soil to generate an updated RATL-1. None of the samples collected by TerraGraphics had concentrations of DDT that exceed the updated RATL-1.

3 Data Gaps

Based on existing data, the following data gaps are identified:

- Soils

- Nutrient levels in soils onsite, specifically in areas near historical fertilizer storage, require further delineation to determine potential source of nutrients loading to shallow groundwater.
- Evaluate pesticide concentrations at depth in DU3.
- Groundwater
 - Nutrient levels in groundwater should be further evaluated to identify potential source areas:
 - Evaluate nutrient concentrations in groundwater in the potential source areas.
 - Evaluate nutrient concentrations down gradient of the site to determine potential offsite migration.
 - Resource Conservation and Recovery Act (RCRA) 8 metals concentrations in groundwater across the site and at the newly proposed well locations should be reviewed against background concentrations (if available) to evaluate whether or not they are elevated due to previous site activities, offsite activities, or are naturally occurring.
 - Pesticides concentrations in groundwater to further identify potential source areas.

4 Recommendations

TerraGraphics recommends the following to fill the data gaps:

- Advance up to 8 soil borings to an approximate depth of 15 feet in the areas of the central bulk chemical storage tanks and asphalt area, collect up to 16 soil samples from the borings, and analyze soil samples for nutrients (ammonia-N, nitrate-N and nitrite-N, total phosphorus-P, Total Kjeldahl Nitrogen [TKN]). Nitrate-N and nitrite-N will be compared to U.S. Environmental Protection Agency (USEPA) regional screening levels (RSLs). Ammonia and TKN do not have any screening levels. A subset of samples will be analyzed for metals and pesticides, specifically in the asphalt covered area not previously assessed.
- Advance up to 3 soil borings in DU3 to an approximate depth of 15 feet. Collect up to three soil samples for pesticide and nutrient (as listed above) analysis at depth.
- Install two additional shallow monitoring wells:
 - Potential source area – one boring will be converted into a monitoring well in the area of the historical aboveground storage tanks.
 - Off-site to the northwest in City of Moscow right-of-way (down gradient).

The well locations will be based on the groundwater flow direction from Tetra Tech's report (2013) as well as any additional information gathered on groundwater gradient. Location of the down-gradient well will be dictated by property ownership, drilling access, and utility locations.

- Survey elevations of all six wells (historical wells and newly installed wells) to calculate the groundwater hydraulic gradient.

- Measure depth to water and collect groundwater samples from all six groundwater wells. Analyze groundwater samples for nutrients (ammonia-N, nitrate-N and nitrite-N, total phosphorus-P, TKN), RCRA 8 metals (silver, arsenic, barium, cadmium, chromium, mercury, lead, and selenium), and pesticides. Nitrate-N and nitrite-N will be compared to USEPA MCLs: 10 mg/L and 1.0 mg/L, respectively as found in IDAPA 58.01.08.050.01 and 40 CFR Part 141.62. Ammonia-N, total phosphorus-P, and TKN do not have any federal or state regulatory standards. RCRA 8 metals results will be compared to background levels (if available). Pesticides results will be compared to IDTLs.

TerraGraphics will prepare a SAP/QAPP Addendum outlining specific sampling methodologies and data quality objectives for the additional assessment activities.

5 References

- Idaho Administrative Procedures Act (IDAPA) 58.01.08.050.01. Idaho Rules for Public Drinking Water Systems: Maximum contaminant levels for inorganic contaminants. April 4, 2013. <http://adminrules.idaho.gov/rules/current/58/0108.pdf>, accessed July 14, 2014.
- Idaho Department of Environmental Quality (IDEQ), 2004. Risk Evaluation Manual (REM). 1410 North Hilton, Boise, Idaho 83706, April 2004.
- “Maximum contaminant levels for inorganic contaminants,” *Code of Federal Regulations* Chapter 40 Part 141 Subpart 62. July 1, 2012. <http://www.gpo.gov/fdsys/granule/CFR-2012-title40-vol24/CFR-2012-title40-vol24-sec141-62>, accessed on July 14, 2014.
- Strata, 2008. Environmental Site Assessment – Phase I ESA, 217 West 6th Street, Moscow, Idaho 83843. Prepared for Mr. Duane Breslford, Corporate Pointe Developers, June 9.
- Strata, 2010. Phase I Environmental Site Assessment 217 West Sixth Street, Moscow, Idaho. Prepared for Moscow Urban Renewal Agency, August 5.
- Tetra Tech, 2013. Final Phase II Environmental Site Assessment 317 West 6th Street, Moscow, Idaho. Prepared for Greater Moscow Area Coalition Brownfield Project, City of Moscow, May 1



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PRINT DATE:
July 17, 2014

PROJECT NUMBER:
13068

PROJECTION:
UTM NAD 83, Zone 11N

PROJECT MANAGER:
R. Nimmer

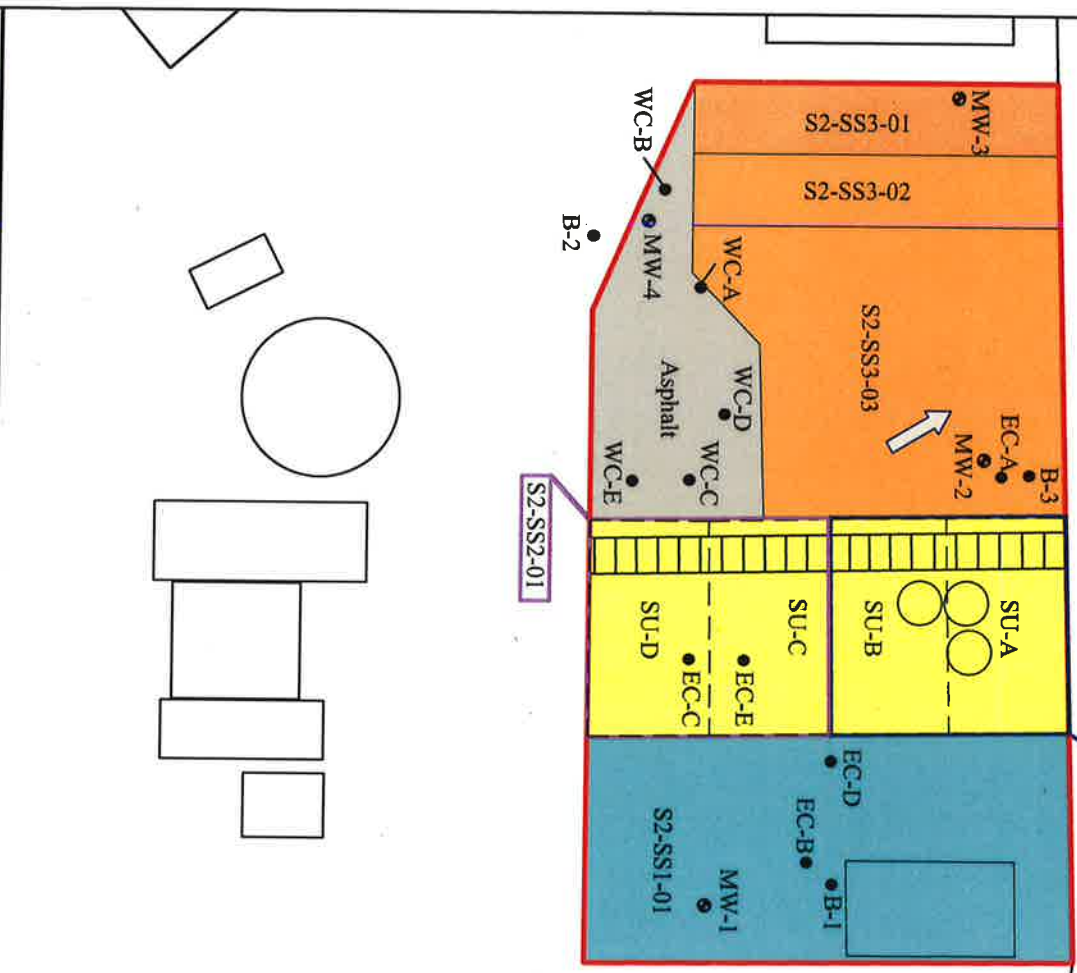
CARTOGRAPHER:
M. Studer

PROJECT NAME:

City of Moscow Brownfields
6th and Jackson

FIGURE 1

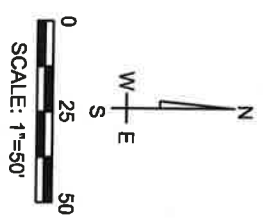
Site Map



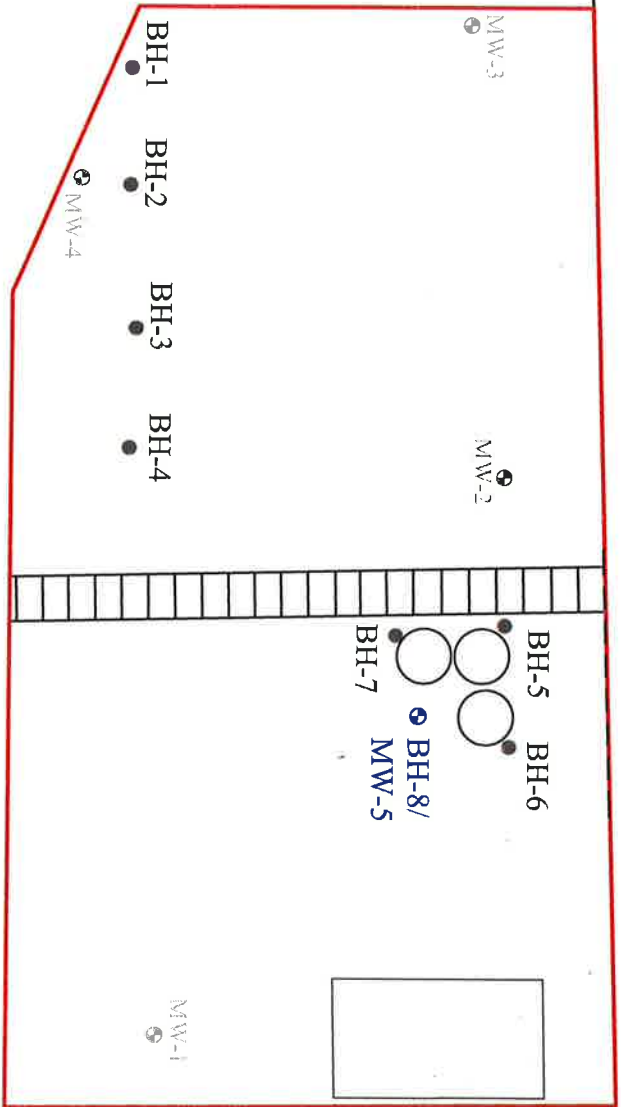
LEGEND

- Approximate Property Boundary
- Eastern Site Office Area and Parking DU1 (TetraTech, May 2013)
- Central Site Bulk Chemical Storage and Railroad Spur DU2 (TetraTech, May 2013)
- Western Site Warehouse and Staging Area DU3 (TetraTech, May 2013)
- TerraGraphics DUs (SU-A, SU-B, SU-C, and SU-D; each 5-point collaborative sample units (November 2013)
- Historic Bulk Storage Tanks within Central DU (1982)
- Asphalt
- Strata Boring/Groundwater/Composite Sample Locations
- TetraTech Monitoring Well Locations (May 2013)
- Historic Railroad Spur Location
- Groundwater flow direction April 2012 (TetraTech, May 2013)

S. Jackson St.









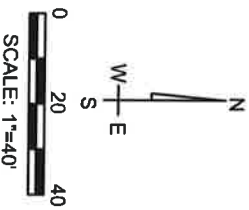
● MW-6
W. 6th St.



S. Jackson St.

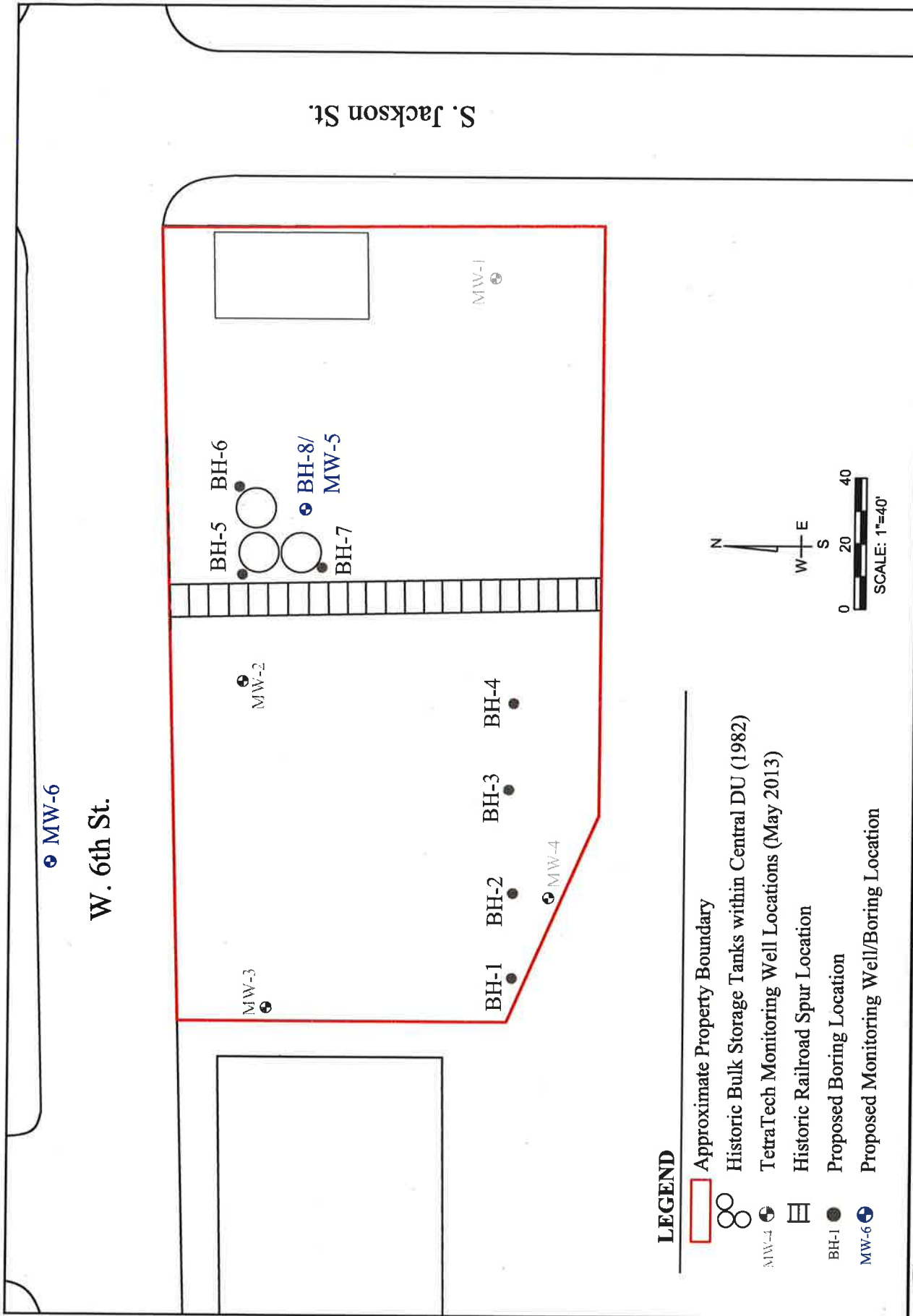
LEGEND


-  Approximate Property Boundary
-  Historic Bulk Storage Tanks within Central DU (1982)
-  TetraTech Monitoring Well Locations (May 2013)
-  Historic Railroad Spur Location
-  Proposed Boring Location
-  Proposed Monitoring Well/Boring Location



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PRINT DATE: July 17, 2014	PROJECTION: UTM NAD 83, Zone 11N	PROJECT NAME: City of Moscow Brownfields 6th and Jackson	FIGURE 2
PROJECT NUMBER: 13068	PROJECT MANAGER: R. Nimmer		Proposed Boring and Monitoring Well Locations July 2014
	CARTOGRAPHER: M. Studer		



 TerraGraphics Environmental Engineering, Inc. www.TerraGraphics.com		PRINT DATE: July 17, 2014	PROJECTION: UTM NAD 83, Zone 11N	PROJECT NAME: City of Moscow Brownfields 6th and Jackson	FIGURE 2 Proposed Boring and Monitoring Well Locations July 2014
		PROJECT NUMBER: 13068	PROJECT MANAGER: R. Nimmer		
		CARTOGRAPHER: M. Studer			