

AFCEE Galena Triad Meeting No. 10

ATTENDEES: See Attached
FROM: CH2M HILL
DATE: October 20, 2011

The Galena Triad meeting/teleconference was attended by members of the Air Force, ADEC, ADOT, CH2M HILL, and Booz Allen Hamilton. Please see the attached **Galena Triad Team Contact List** for attendees.

The meeting followed the standard agenda setup for the Galena Triad calls.

Agenda:

1. Safety moment
2. Status update for field work activities
3. Review of action items and conclusions from previous Triad meeting. Approval of minutes
4. Discussion of new site data and evaluating progress toward Work Plan objectives
5. Identifying additional work needed and/or concurrence that Work Plan objectives have been met
6. Open discussion of other items
7. Schedule update for upcoming activities

Safety Moment

The topic focused on the wrap-up of the field season, and the need to remain vigilant in terms of safety as we wind down from 6 months in the field. As the weather turns colder, snow falls, and the team prepares to demobilize, safety is a priority over production.

Status Update of Field Work Activities

Melissa gave an update on the current field activities:

- This past week DPT drilling and sampling was focused on the stepouts at Sites ST005, SS014/17/21, and the 2 additional deeper samples at SS006.
- The hollow-stem auger (HSA) work was focused on installing wells at UST1859 (MW001, MW002, and MW003). The SS006 upgradient monitoring well cluster is in progress.
- The last wells to be installed in 2011 will be completed by the end of the week - SS006 source area cluster and the upgradient well at SS005.
- Wells are being developed and sampled 48 hours after installation.
- Hand auger samples and IDW management continue this week and will through October 28, 2011.

- The drill rigs will demobilize from the site on October 31, 2011.

Win confirmed that there is no additional room in the schedule for stepouts or wells other than those to be discussed today.

Review of Action Items, Approval of Minutes

- Action items from the previous Triad call No. 9:
 - Evaluate the distribution of PCE and TCE in soil around Million Gallon Hill. A figure was presented and discussed, with a proposed soil stepout on Dike Road to the south of the TCE/PCE exceedance at CG001_GP019 (the stepout is approximately 100 feet away). The team discussed groundwater data downgradient from the area, and confirmed that results for chlorinated solvents are low level to non-detect. There was also discussion regarding the step-out distance and whether it should be closer to provide better resolution of the extent of contamination. However, due to the end of the season and lack of time for additional step-outs, the Air Force will proceed with this stepout at the proposed distance to ensure that the PCE and TCE in soil is bounded.
 - The northern stepout CG001_GP025 was sampled this week. The PID readings did not indicate a need to stepout further, so the additional 2 proposed contingency stepouts will not be taken.
 - UST1428 - 2 stepouts were proposed to obtain information for nature and extent in groundwater. These were approved.
 - UST1428_GP008 - stepdown into the permanently saturated zone at 25-30' bgs.
 - Stepout to the south from UST1428_GP005 to collect samples from the water table at 13' bgs, and within the permanently saturated zone at 25-30'bgs. [NOTE that subsequent to the meeting, ADOT did not approve drilling south of the CAC building; therefore, this sample will not be collected.]
- The minutes from Triad calls 8 and 9 were submitted to ADEC and ADOT 10/19/2011 for review and approval. [NOTE that excluding Triad call 10 meeting minutes, ADEC and ADOT have not approved meeting minutes from Triad calls 3 through 9. Sam has approved the Triad call 8 and 9 minutes; however we have not received concurrence from Colette.

New Site Data and Evaluating Progress toward Work Plan Objectives

ST005 - Soil results were available to discuss for Areas D, G, H, J, K, and L.

- **Area D** was a former AVGAS truck fill station. Three SC-type borings were sampled and had minor shallow exceedances at 4, 7, and 11 ' bgs. Area has been delineated. Fred commented that more information may be needed to complete the risk assessment for the area, but concurred that no additional information is needed to complete the SC.
 - All agreed that no stepouts are needs at Area D and sampling is complete.
- **Area G** - Former MOGAS Dispensing Pumps and Former Tank Cluster 1880-1 through 1880-8. 5 locations were sampled, all revealing exceedances. There is evidence of a surface spill, and 3 stepouts are proposed at exisiting pipeline screening locations to a depth of 20' bgs to further delineate the spill to the west, north, and east. As is common at ST005, there

is also contamination within the smear zone from multiple sources. Fred requested additional stepouts to bound the contamination to the south. The team discussed the locations of the proposed Optimization Study VMP borings in the area, which are being installed next week as full SC borings, and are located south of Area G. Area E to the east and Area F to the north include samples that assist in bounding the Area G-related contamination.

- All agreed to 3 proposed stepouts at Area G.
- **Area H** formerly contained a 12,000-gallon diesel tank, AST23. Two locations were sampled - no exceedances at the northwest location ST005_GP031; the southeastern location ST005_GP032 indicates mainly xylene and benzene contamination within the smear zone and no exceedances at shallower depths. No stepouts proposed.
 - All agreed that no stepouts are needed at Area H.
- **Area I** consisted of two, 50,000-gallon horizontal ASTs, Nos. 39 and 40, used for storage of isopropyl alcohol, and a truck fill station. One location was sampled as an SC boring, and no exceedances were found.
 - All agreed that no stepouts are needed at Area I.
- **Area J** is a valve pit where diesel, JP-4, MOGAS, and AVGAS pipelines converge. Two locations were sampled - ST005_GP034 and OAP_GP009, and contamination is present in the surface and within the smear zone. Multiple ST005 monitoring wells and the bio-venting system are in the area. Proposed Optimization Study VMP samples are located to the east and west of Area J and the samples taken from within the airport apron are to the south. Therefore, no stepouts are proposed.

Fred commented that there is a risk to using the VMP samples for delineation since they were not approved as such. He also commented that the apron samples were a significant distance to the south. Therefore, Fred requested a stepout to the south of Area J.

- The Air Force will consider the request for the stepout, if the schedule permits. Donna mentioned that the AF acknowledges that additional information may be required to design a site - specific remediation system, but there is currently enough data to write an SC Report.
- **Area K** is an active fill station. SC borings were taken at 5 sample location, all came back clean with the exception of ST005_GP037, with a low level TCE hit (screening data) at 4' bgs. Area C is to the south of Area K, however the TCE does not appear to be related. No stepouts are proposed.
 - All agreed that no stepouts are needed at Area K.
- **Area L** is the former Building 1836 pump station and associated fuel valve rack. Samples were taken from 3 locations, all showing exceedances. ST005_GP042 to the northwest has contamination in the smear zone, likely related to site SS005. GP040 and GP041 show POL exceedances to 11' bgs, and 2 stepouts are proposed to further delineate the contamination. The stepouts are at pipeline screening locations that would be changed to full SC borings to a depth of 42' bgs. Fred is concerned that the area would not be bound to the north and

west, and requested 2 additional stepouts (one to the west of GP041, and one along the pipeline to the north (would convert proposed pipeline sample GP056 to a full SC boring).

- All agreed to the initial 2 proposed stepouts, and to include the additional 2 stepouts should schedule permit.
- **ST005 along the edge of the apron** – proposed 3 stepouts for soil and groundwater along the northern edge of the apron. Colette reminded the team that no further samples can be taken within the apron this field season. Stepout to the east of GP047 for soil and groundwater to obtain the eastern extent of contamination at ST005. Stepouts (2) to the west of CB001 to obtain the western extent of contamination at CB001; however it was agreed to make the western-most stepout (to the immediate west of the airport building) a contingency boring, to be taken only if the location to the east of the airport building indicate a more western sample is needed.
 - All agreed to the proposed stepouts, and making the western most location a contingent location.

SS006 and SS019 - The sample results for both sites were presented on one figure due to their proximity to each other.

- **SS019** – GRO is bounded to the south and north of the source area. GP003 and GP007 indicate higher levels of GRO in the surface soils to 10' bgs, then low levels of TCE and benzene at 29' bgs and deeper. Propose a stepout to the west of GP003 to further delineate GRO and VOCs. SS006 bounds the site to the east. Fred indicated that the proposed stepout would not be adequate for chlorinated solvents to determine if there is a solvent source at building 1700; however did agree with the stepout location for GRO.
 - The AF will stepout for GRO and VOCs to the west of SS019.
- **SS006** – In GP004 and GP014 in the northeast of the site, TCE is present in the surface to 10' bgs, and then again at low levels starting at 22' bgs, going deeper. A stepout to the east of GP004 was proposed to further delineate the extent of TCE. Fred mentioned an old drawing that may show an old wastewater pipeline that ran from former Building 1842 towards the east (in the vicinity of GP004 and GP014). Therefore, it would be beneficial to take an additional stepout in this area. No additional stepouts are proposed for SS006 as the site is bordered to the west by SS019, to the north by samples at OWS1845, and to the south by the existing monitoring well network.
 - The team agreed to the 2 stepouts at SS006. Fred reiterated that ADEC's comments on the SS006 and SS019 FSPs, as documented via letters to the Air Force, still stand.
- **UST15783** – The data from the first set of stepouts implies that there is an unknown DRO source to the northeast of the site. A potential disturbance on the 1963 aerial photograph (i.e., stockpile or excavation) was discussed. Four stepouts were proposed to further delineate the area of contamination. The former fuel pipeline that lead to the old CE maintenance building is a potential source. The recent geophysical survey at the old CE maintenance building did not identify any pipeline remaining at this location. Fred mentioned that if the DRO exceedences are from a source other than UST15783, the AF can still move to administratively closeout the UST site.

- Team agreed to four proposed stepouts (3 soil and 1 soil/groundwater), and agreed to shift the location of stepout #4, the southern most location, if needed based on observations made during the installation of the first 3 stepouts to get the grab groundwater downgradient of the highest upgradient sample.
- **TU001-** a figure with the sample locations and related colored exceedances was presented; however, the specific data were not included (due to time constraints). The team discussed issues associated with stepping out to the west due to the steep slope outside the fence and drainage ditch. A drill rig would not be able to access this area. Site AOC23 is directly to the south and Site SS019 is to the northeast.
 - Team agreed that no stepouts are needed. [NOTE that post Triad, the AF decided to take a stepout to the west of location TU001_GP007, via hand auger on the steep slope within the ditch.]

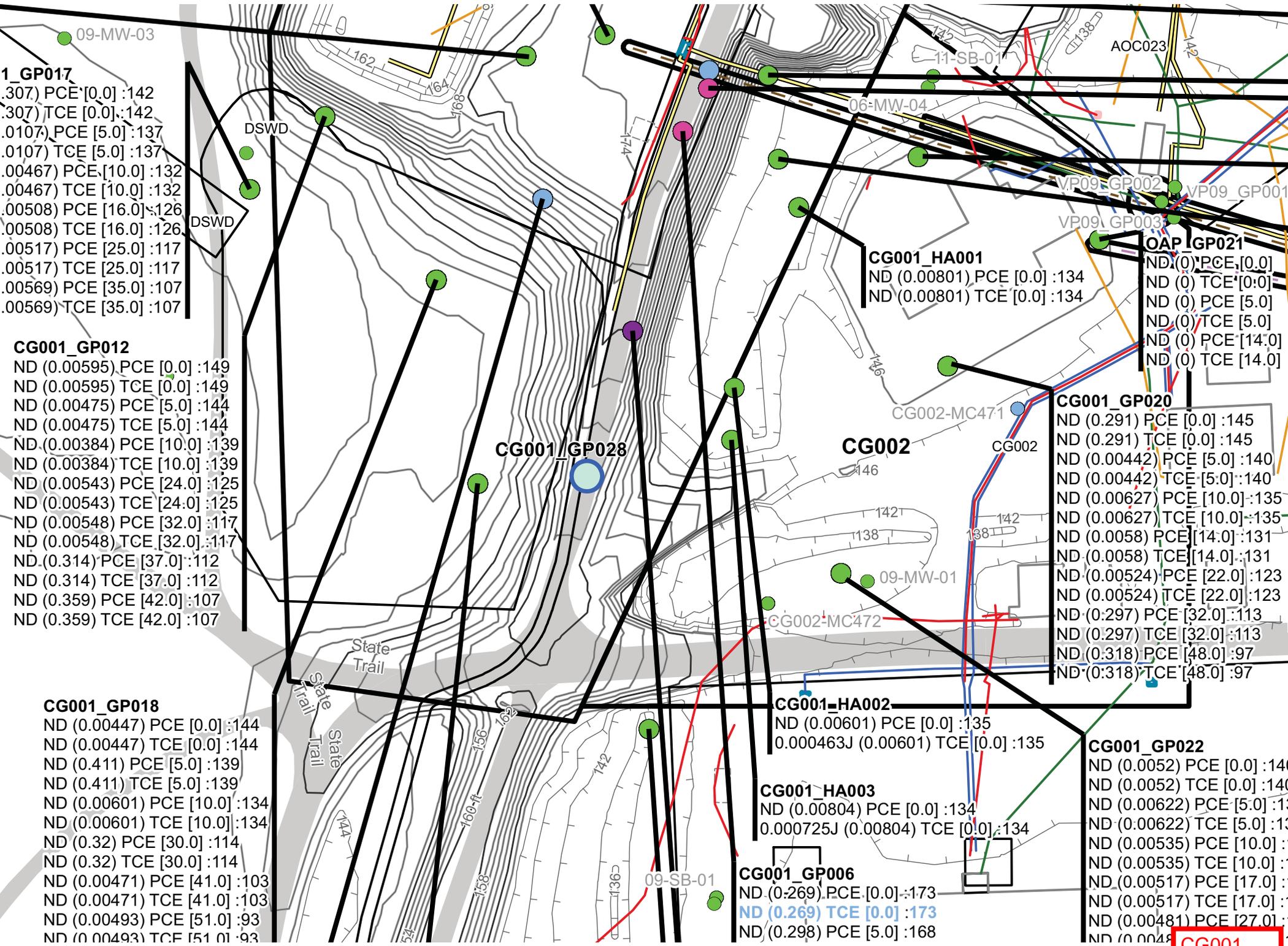
Open Discussion for Other Items

Fred commented that overall the AF has collected much more information site wide than there was 2 years ago, and therefore better decisions will be made this winter during reporting than would have been made 2 years ago.

Schedule Update for Upcoming Activities

None. This was the last Triad call of the season.

Attachment: Galena TO 294 Triad Team Contact List



09-MW-03

1_GP017
 .307) PCE [0.0] :142
 .307) TCE [0.0] :142
 .0107) PCE [5.0] :137
 .0107) TCE [5.0] :137
 .00467) PCE [10.0] :132
 .00467) TCE [10.0] :132
 .00508) PCE [16.0] :126
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 .00517) PCE [25.0] :117
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 .00569) PCE [35.0] :107
 .00569) TCE [35.0] :107

CG001_GP012
 ND (0.00595) PCE [0.0] :149
 ND (0.00595) TCE [0.0] :149
 ND (0.00475) PCE [5.0] :144
 ND (0.00475) TCE [5.0] :144
 ND (0.00384) PCE [10.0] :139
 ND (0.00384) TCE [10.0] :139
 ND (0.00543) PCE [24.0] :125
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 ND (0.00548) PCE [32.0] :117
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 ND (0.314) PCE [37.0] :112
 ND (0.314) TCE [37.0] :112
 ND (0.359) PCE [42.0] :107
 ND (0.359) TCE [42.0] :107

CG001_GP018
 ND (0.00447) PCE [0.0] :144
 ND (0.00447) TCE [0.0] :144
 ND (0.411) PCE [5.0] :139
 ND (0.411) TCE [5.0] :139
 ND (0.00601) PCE [10.0] :134
 ND (0.00601) TCE [10.0] :134
 ND (0.32) PCE [30.0] :114
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 ND (0.00471) PCE [41.0] :103
 ND (0.00471) TCE [41.0] :103
 ND (0.00493) PCE [51.0] :93
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CG001_HA001
 ND (0.00801) PCE [0.0] :134
 ND (0.00801) TCE [0.0] :134

OAP [GP021]
 ND (0) PCE [0.0]
 ND (0) TCE [0.0]
 ND (0) PCE [5.0]
 ND (0) TCE [5.0]
 ND (0) PCE [14.0]
 ND (0) TCE [14.0]

CG001_GP020
 ND (0.291) PCE [0.0] :145
 ND (0.291) TCE [0.0] :145
 ND (0.00442) PCE [5.0] :140
 ND (0.00442) TCE [5.0] :140
 ND (0.00627) PCE [10.0] :135
 ND (0.00627) TCE [10.0] :135
 ND (0.0058) PCE [14.0] :131
 ND (0.0058) TCE [14.0] :131
 ND (0.00524) PCE [22.0] :123
 ND (0.00524) TCE [22.0] :123
 ND (0.297) PCE [32.0] :113
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 ND (0.318) PCE [48.0] :97
 ND (0.318) TCE [48.0] :97

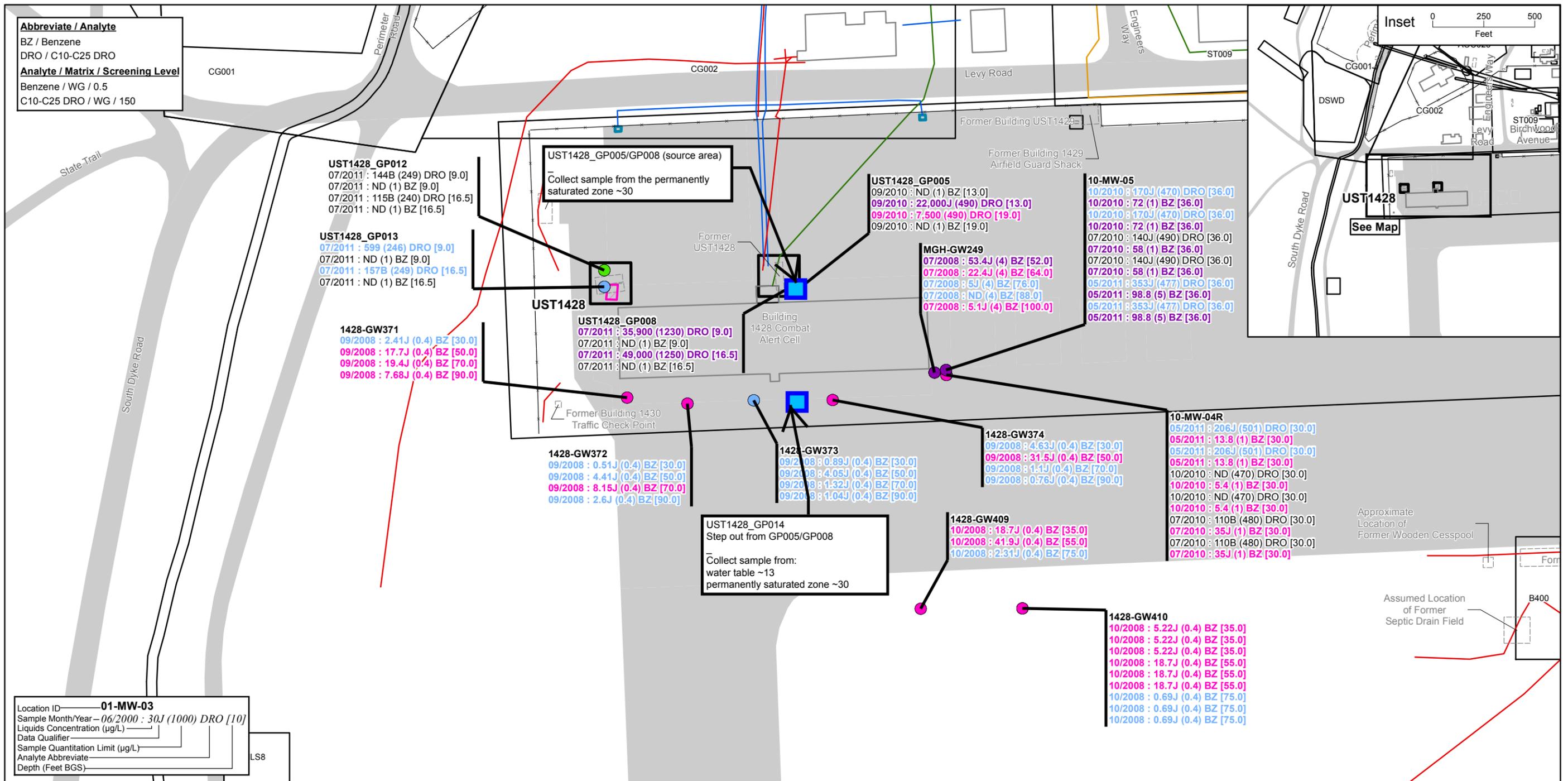
CG001_HA002
 ND (0.00601) PCE [0.0] :135
 0.000463J (0.00601) TCE [0.0] :135

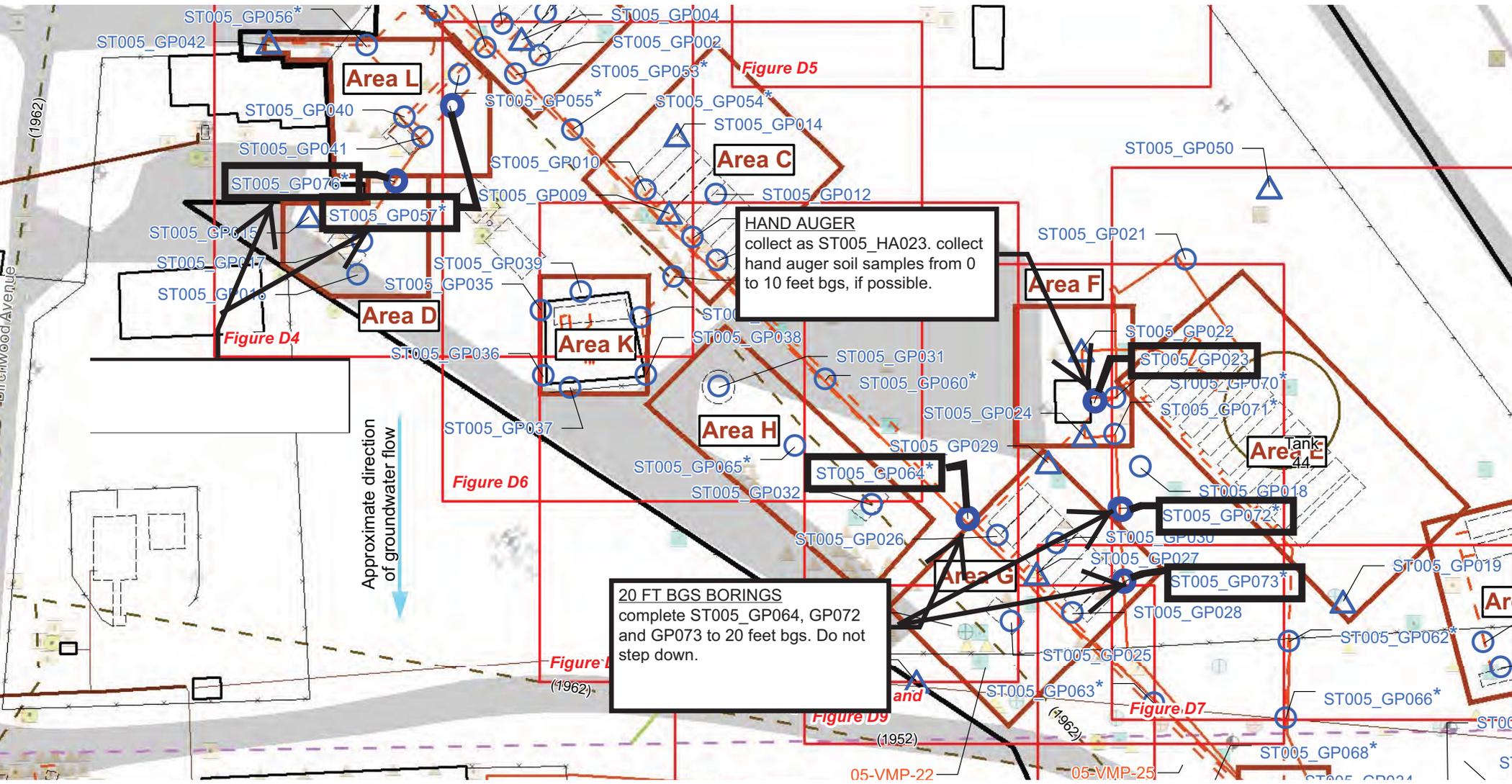
CG001_HA003
 ND (0.00804) PCE [0.0] :134
 0.000725J (0.00804) TCE [0.0] :134

CG001_GP006
 ND (0.269) PCE [0.0] :173
 ND (0.269) TCE [0.0] :173
 ND (0.298) PCE [5.0] :168

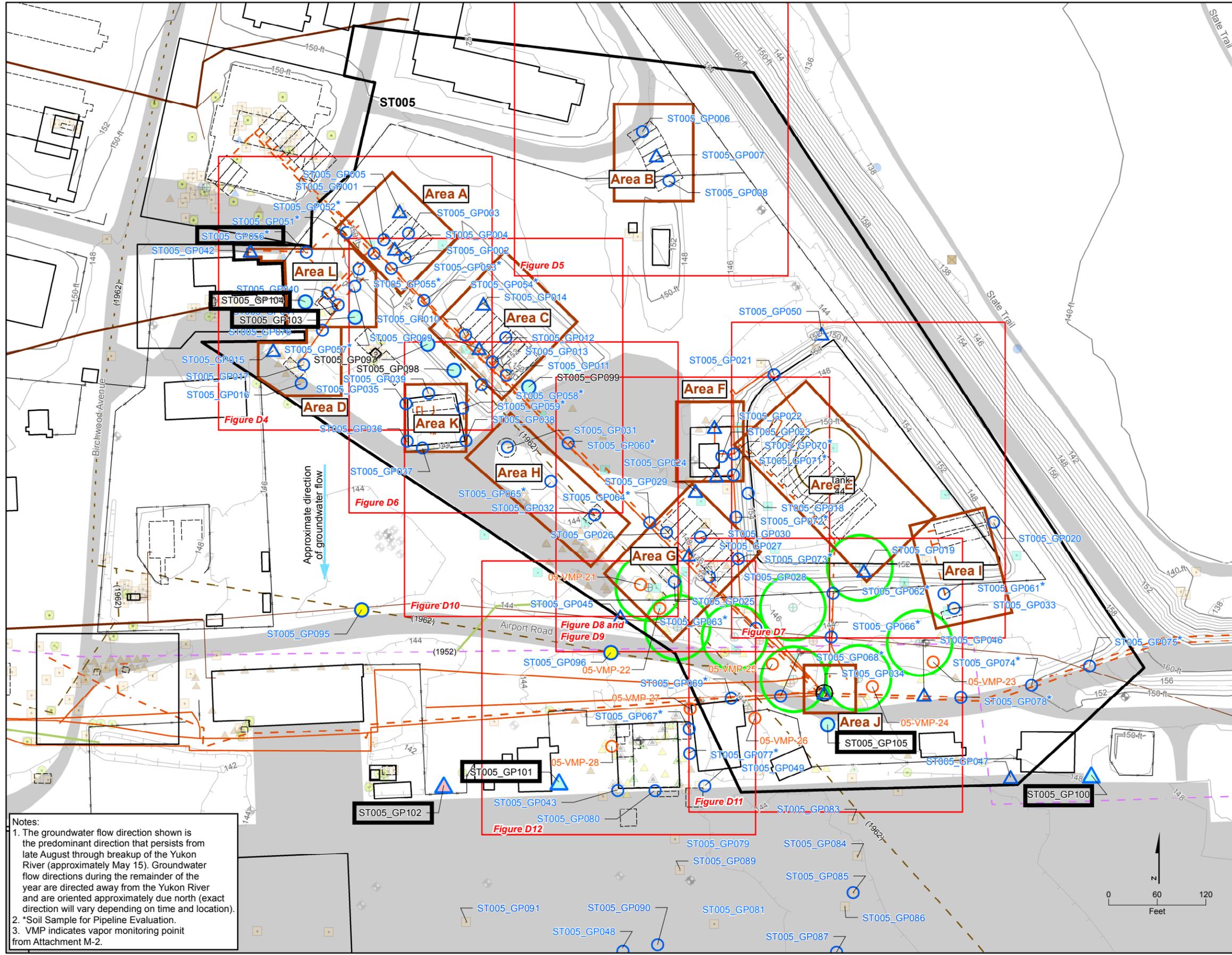
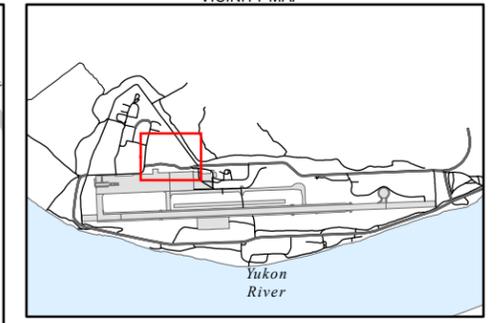
CG001_GP022
 ND (0.0052) PCE [0.0] :140
 ND (0.0052) TCE [0.0] :140
 ND (0.00622) PCE [5.0] :135
 ND (0.00622) TCE [5.0] :135
 ND (0.00535) PCE [10.0] :130
 ND (0.00535) TCE [10.0] :130
 ND (0.00517) PCE [17.0] :120
 ND (0.00517) TCE [17.0] :120
 ND (0.00481) PCE [27.0] :105
 ND (0.00481) TCE [27.0] :105

CG001





ST005 -
Area G



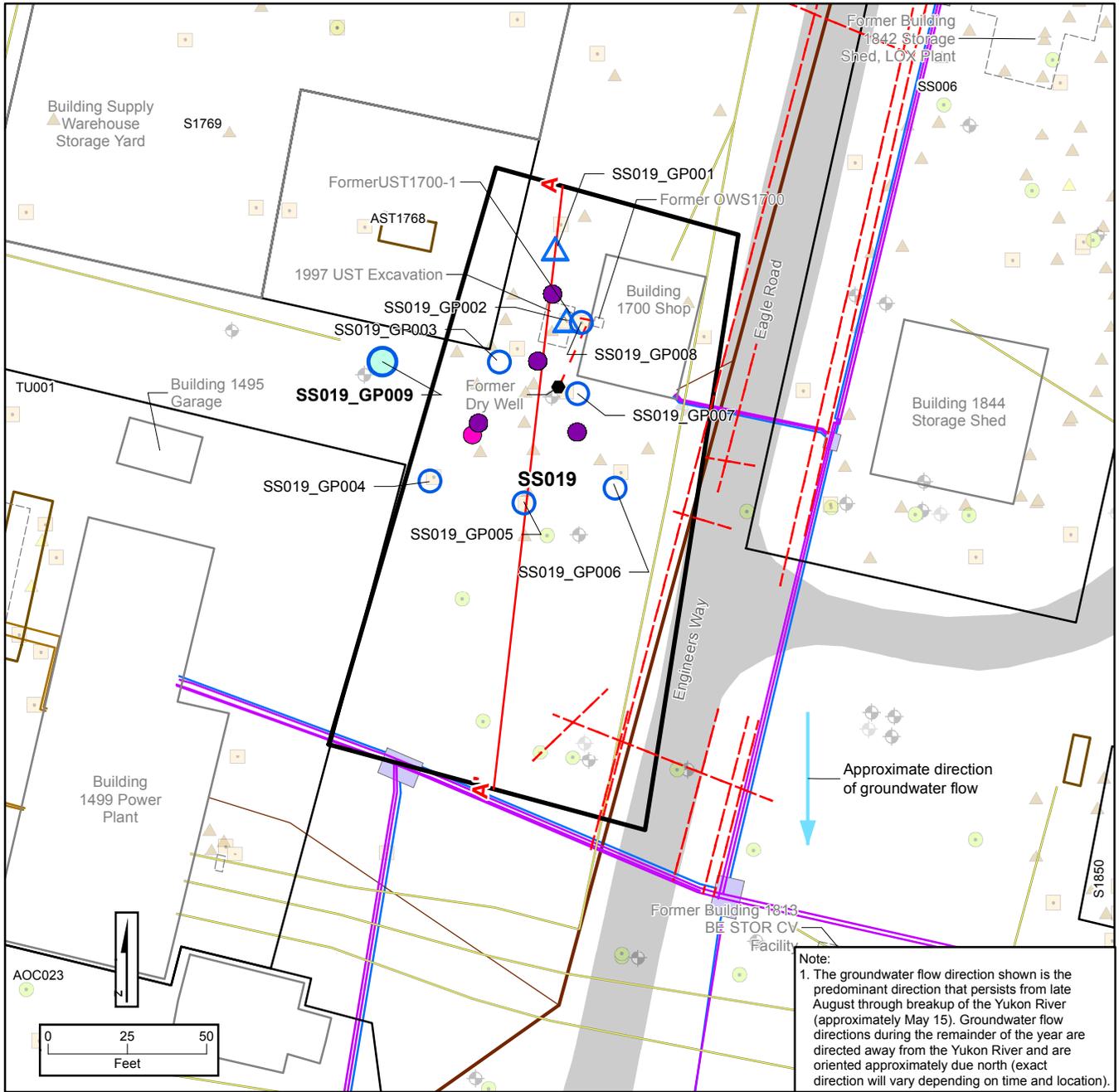
LEGEND

- ST005/CB001
- Adjacent Site
- Airfield or Road
- Structure
- Approximate Location of Former Feature
- Source Area
- Fuel Tank
- Fence
- Main Wastewater Line
- Service Wastewater Line
- Main Storm Sewer Line
- Abandoned Fuel Line (1952)
- Abandoned Fuel Line (1962)
- Fuel Line
- Former Fuel Line
- Proposed Remediation System Optimization Soil Sample (See Attachment M-2)
- Proposed Soil Sample
- Proposed Soil/Groundwater Sample
- New Proposed Soil Sample, September 2011
- Approximate Radius of Influence (See Attachment M-2)
- Bioventing ROI
- Proposed Sample Location - Step Out #1
- Proposed Soil/Groundwater Sample
- Proposed Soil Sample
- Proposed Sample Location - Step Out #2
- Proposed Soil/Groundwater Sample
- Historical Sample Location
- Soil Boring
- Surface Soil Sample
- Sediment Sample
- Hydro Punch
- Monitoring Well
- Abandoned Monitoring Well
- Product Recovery Well
- Abandoned Recovery Well
- Bioventing System Well
- Surface Water Sample
- Ambient Air
- Gore Sorber
- Soil Vapor Sample
- Vapor Extraction System Effluent
- Vapor Extraction Well
- Vapor Monitoring Point

Notes:

- The groundwater flow direction shown is the predominant direction that persists from late August through breakup of the Yukon River (approximately May 15). Groundwater flow directions during the remainder of the year are directed away from the Yukon River and are oriented approximately due north (exact direction will vary depending on time and location).
- *Soil Sample for Pipeline Evaluation.
- VMP indicates vapor monitoring point from Attachment M-2.

FIGURE D28-ST005/CB001
Proposed Sample and Step-out Locations and Areas
 Work Plan for Site Inspection, Remedial Investigation, and Site Characterization
 Former Galena Forward Operating Location, Alaska



LEGEND

- SS019
- Adjacent Site
- Structure
- Road
- Cross Section
- Electrical Line
- Heating/Cooling Line
- Main Storm Sewer Line
- Main Wastewater Line
- Service Wastewater Line
- Water Line
- Former Pipelines
- Valve Pit
- Fuel Tank
- Proposed Soil Sample
- Proposed Soil/Groundwater Sample

Proposed Sample Location - Step Out #1

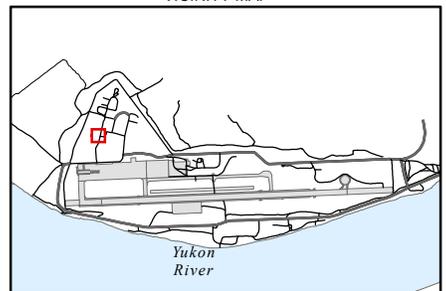
- Proposed Soil Sample

Historical Soil Exceedance

- Sample Exceeds Screening Level (Greater than 100X analyte SL)
- Sample Exceeds Screening Level (Greater than 10X analyte SL)

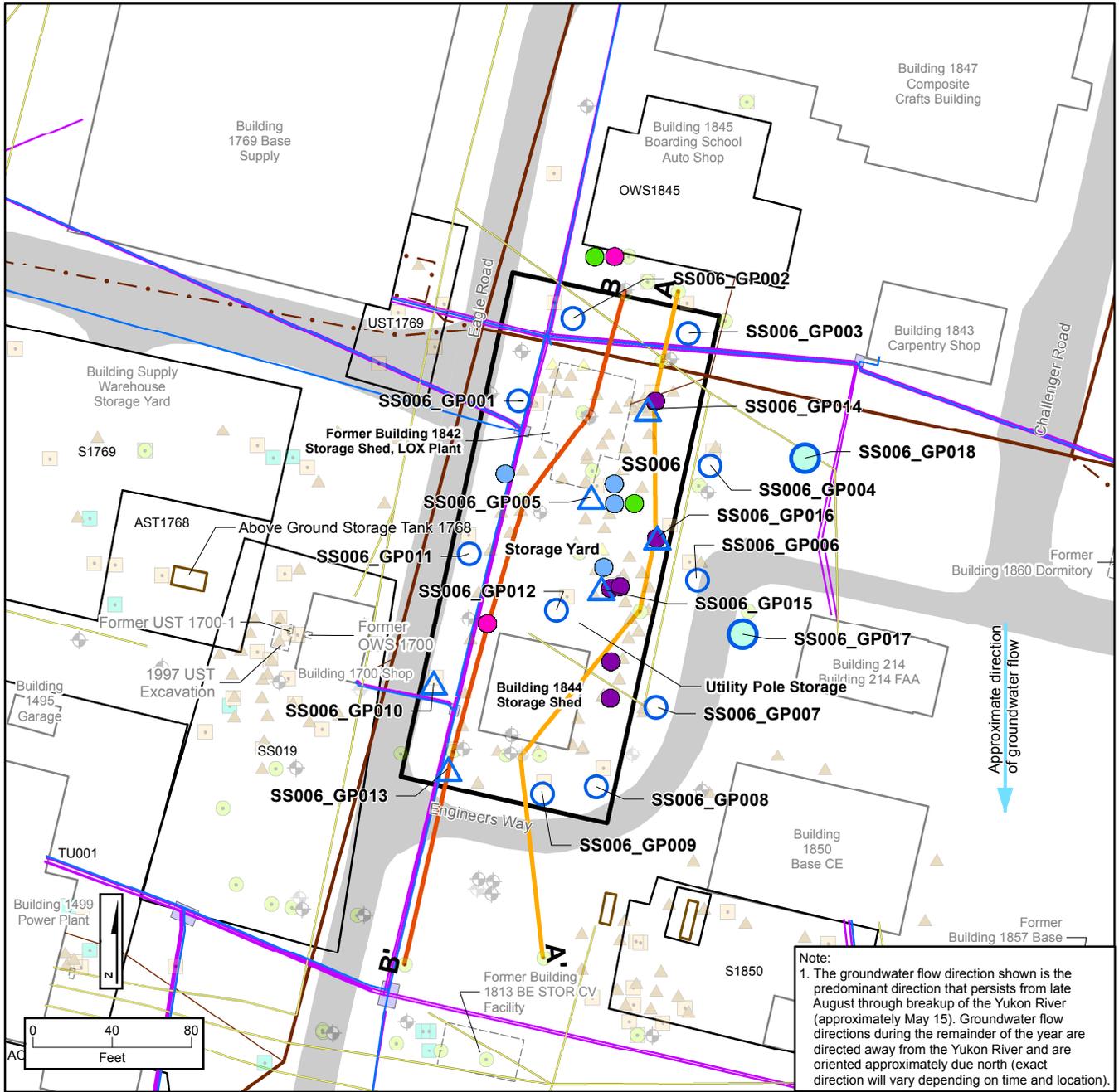
Historical Sample Location

- Soil Boring
- Hydro Punch
- ⊕ Monitoring Well
- ⊕ Abandoned Monitoring Well
- ▲ Soil Vapor Sample
- ▲ Vapor Monitoring Point



**FIGURE D11-SS019
Proposed Sample and
Step-Out Locations**

Work Plan for Site Inspection, Remedial Investigation, and Site Characterization
Former Galena Forward Operating Location, Alaska



LEGEND

- SS006
- Adjacent Site
- Road
- Structure
- Approximate Location of Former Feature
- Electrical Line
- Heating/Cooling Line
- Abandoned Wastewater Line
- Main Wastewater Line
- Water Line
- Valve Pit
- Cross Section A
- Cross Section B

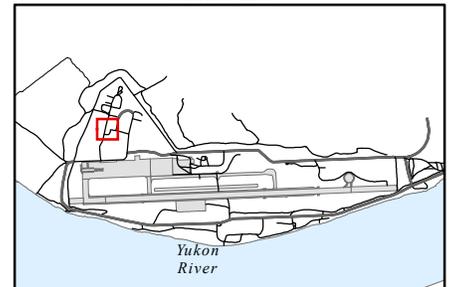
Proposed Sample Location - Step Out #1

- Proposed Soil Sample

- Proposed Soil Sample
- Proposed Soil/Groundwater Sample
- Sample Exceeds Screening Level (Greater than 100X analyte SL)
- Sample Exceeds Screening Level (Greater than 10X analyte SL)
- Sample Exceeds Screening Level (1 to 10X analyte SL)
- Sample Does Not Exceed Screening Level

Historical Sample Location

- Soil Boring
- Surface Soil Sample
- Abandoned Monitoring Well
- Monitoring Well
- Hydro Punch
- Vapor Monitoring Point
- Soil Vapor Sample

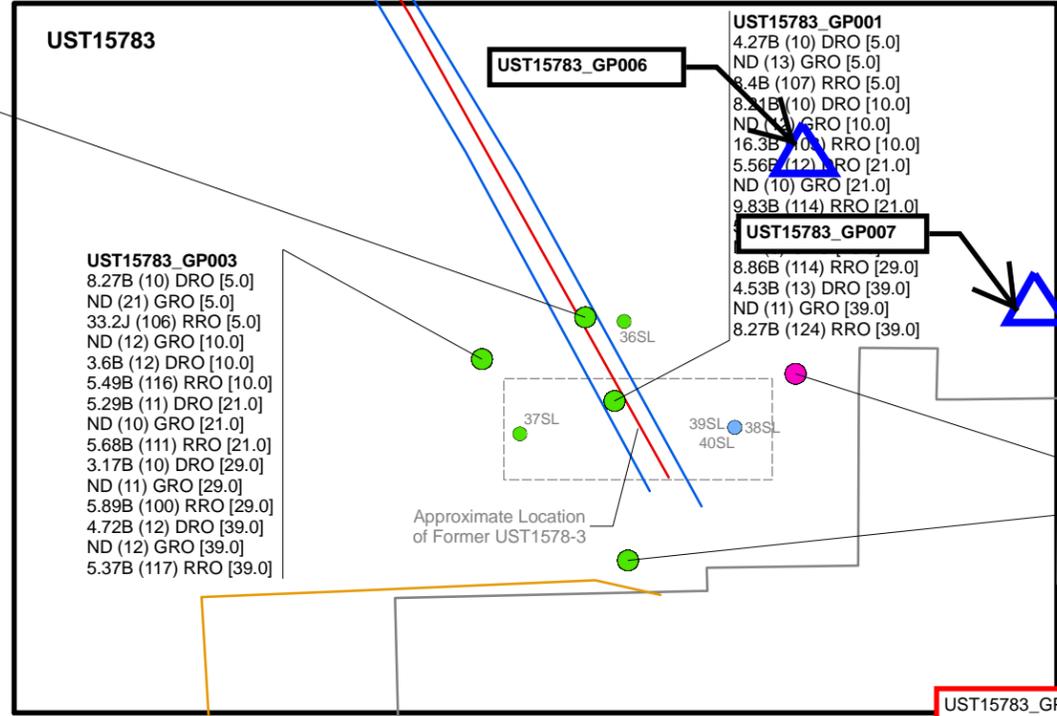


**FIGURE D12-SS006
 Proposed Sample and
 Step-out Locations**

Work Plan for Site Inspection, Remedial Investigation,
 and Site Characterization
 Former Galena Forward Operating Location, Alaska

Abbreviate, Analyte	
DRO, C10-C25 DRO	
GRO, C6-C10 GRO	
RRO, C25-C36 RRO	
Analyte, Matrix, Screening Level	
C10-C25 DRO, SO, 250	
C6-C10 GRO, SO, 140	

UST15783_GP005
 9.47B (11) DRO [5.0]
 ND (10) GRO [5.0]
 18.8B (117) RRO [5.0]
 30.1 (11) DRO [10.0]
 ND (11) GRO [10.0]
 65.4J (102) RRO [10.0]
 4.1B (11) DRO [21.0]
 ND (10) GRO [21.0]
 8.77B (110) RRO [21.0]
 ND (9) GRO [29.0]
 7.43B (107) RRO [29.0]
 5.26B (11) DRO [29.0]
 3.75B (12) DRO [39.0]
 ND (11) GRO [39.0]
 7.09B (116) RRO [39.0]



UST15783_GP003
 8.27B (10) DRO [5.0]
 ND (21) GRO [5.0]
 33.2J (106) RRO [5.0]
 ND (12) GRO [10.0]
 3.6B (12) DRO [10.0]
 5.49B (116) RRO [10.0]
 5.29B (11) DRO [21.0]
 ND (10) GRO [21.0]
 5.68B (111) RRO [21.0]
 3.17B (10) DRO [29.0]
 ND (11) GRO [29.0]
 5.89B (100) RRO [29.0]
 4.72B (12) DRO [39.0]
 ND (12) GRO [39.0]
 5.37B (117) RRO [39.0]

UST15783_GP001
 4.27B (10) DRO [5.0]
 ND (13) GRO [5.0]
 8.4B (107) RRO [5.0]
 8.21B (10) DRO [10.0]
 ND (11) GRO [10.0]
 16.3B (101) RRO [10.0]
 5.56B (12) DRO [21.0]
 ND (10) GRO [21.0]
 9.83B (114) RRO [21.0]
UST15783_GP007
 8.86B (114) RRO [29.0]
 4.53B (13) DRO [39.0]
 ND (11) GRO [39.0]
 8.27B (124) RRO [39.0]

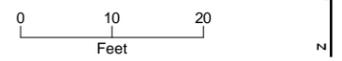
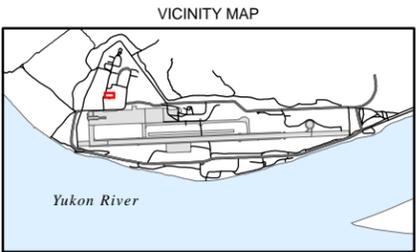
UST15783_GP009
 UST Stepout #2
 4.68 Proposed Soil Sample
 ND (10) GRO [5.0]
 8.41B (118) RRO [5.0]
 5.29B (12) DRO [10.0]
 ND (11) GRO [10.0]
 11.3B (112) RRO [10.0]
 4.93B (11) DRO [21.0]
 ND (10) GRO [21.0]
 7.64B (115) RRO [21.0]
4,170 (108) DRO [29.0]
166 (157) GRO [29.0]
 39.9B (1081) RRO [29.0]
 6.01B (12) DRO [39.0]
 ND (11) GRO [39.0]
 6.9B (117) RRO [39.0]

UST15783_GP004
 69.9 (9) DRO [5.0]
 9.67 (9) GRO [5.0]
 17.5B (99) RRO [5.0]
 57.3 (13) DRO [10.0]
 ND (12) GRO [10.0]
 8.85B (128) RRO [10.0]
 4.35B (11) DRO [21.0]
 ND (12) GRO [21.0]
 8.5B (106) RRO [21.0]
 8.5B (11) DRO [29.0]
 8.5B (113) GRO [29.0]
 8.5B (114) RRO [29.0]
 8.5B (12) DRO [39.0]
 ND (11) GRO [39.0]
 5.61B (116) RRO [39.0]

01-SS-01	
Location ID	0.028J (0.25) ACNP [5.0]
Solids Concentration (mg/kg)	
Data Qualifier	
Sample Quantitation Limit (mg/kg)	
Analyte Abbreviate	
Depth (Feet BGS)	

LEGEND

- UST15783
- Adjacent Site
- Road
- Approximate Location of Former Feature
- Structure
- Utility Locates - 2010
 - Electrical Line
 - Communications Line
 - Potable Water Main
 - Sanitary Sewer Main
 - Concrete Pad
- Sample Exceeds Screening Level (Greater than 10X analyte SL)
- Sample Does Not Exceed Screening Level
- Historical Sample Exceeds Screening Level (1 to 10X analyte SL)
- Historical Sample Does Not Exceed Screening Level



- Notes:
- B - The analyte was detected in the associated method and/or calibration blank.
 - J - The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
 - ND = Non-Detect
 - Screening levels are presented in units of ug/L for WG (groundwater) samples and mg/kg for SO (soil) samples.
 - Scarlet Label** = Sample Exceeds Screening Level (Greater than 10X analyte SL)
 - Blue Label** = Sample Exceeds Screening Level (1 to 10X analyte SL)
 - SL = Screening Level

Site Name: UST15783
Investigation Type: SC
Analytes: Petroleum Hydrocarbons
Media: Soil
SLs: Soil Extent
Data Range: 2010



LEGEND

- TU001
- Adjacent Site
- Structure
- Approximate Location of Former Feature
- Approximate Extent of 1997 Excavation
- Concrete Drum Storage Pad
- Service Fuel Line
- Electrical Line
- Main Wastewater Line
- Water Line
- Fuel Tank

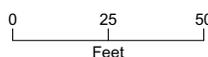
- Sample Exceeds Screening Level (Greater than 10X analyte SL)
- Sample Exceeds Screening Level (1 to 10X analyte SL)
- Sample Does Not Exceed Screening Level
- Historical Sample Exceeds Screening Level (Greater than 10X analyte SL)
- Historical Sample Exceeds Screening Level (1 to 10X analyte SL)
- Historical Sample Does Not Exceed Screening Level

Historical Sample Location

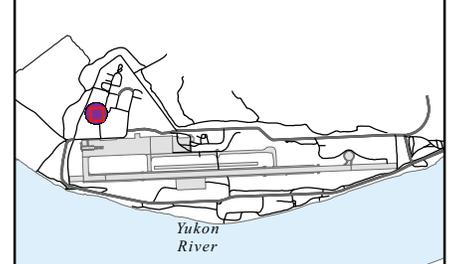
- Monitoring Well

Note:

1. Aerial photography and CAD drawing file vector themes courtesy Alaska Department of Commerce, Community and Economic Development, Division of Community and Regional Affairs. July 7, 2009. Aerial photography pixel size 6-inch.



VICINITY MAP



**FIGURE D1-TU001
Site Layout**

Former Galena Forward Operating Location, Alaska