



**CONESTOGA-ROVERS
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MEMORANDUM

To: Kevin Lund, MDEQ
REF. No.: 017358-T01

FROM: Beth Landale/Wendy Best/bw/132/Det.
DATE: September 3, 2014

CC: Grant Trigger, RACER
Daniel Beck, CRA

RE: **Southern Hydraulic Investigation - Scope of Work
Former Powertrain Plant, Ypsilanti, Michigan**

1.0 Introduction

Conestoga-Rovers & Associates, Inc. (CRA) is presenting this Scope of Work (SOW) for activities proposed to be conducted in the area between the main site building slab and Tyler Pond between September 2 and 5, 2014. The areas included in this work program are illustrated on Figure 1 and include the YCUA WWTP property, the south parcel (on-site), the on-site area south of the slab and the former tank farm on the Willow Run Airport property.

The SOW is designed to:

1. Better define groundwater flow direction in the shallow and intermediate units in areas south of the main building slab (i.e., close to Tyler Pond and in the vicinity of the former tank farm on Willow Run Airport property).
2. Determine the hydraulic conductivity of soils underlying the south parcel using laboratory methods such that it can be used as an indicator of the capacity of the soil to 'handle' infiltration from the proposed wetland/leaching bed system.

2.0 Scope of Work

The scope of work consists of three main components:

1. Piezometer Installation (YCUA WWTP Property) and Monitoring Well Installation (South Parcel)
2. Hydraulic Conductivity Testing of Soils - South Parcel
3. Hydraulic Monitoring of Installations Located South of the Slab

2.1 Piezometer and Monitoring Well Installation

2.1.1 Piezometer Installation – YCUA WWTP Property

Up to eight piezometer pairs, each consisting of a shallow and intermediate installation, are proposed for the YCUA WWTP property located on the north bank of Tyler Pond. The objective of these installations is to better define groundwater flow between the south parcel and Tyler Pond. These piezometers are to be used for hydraulic monitoring only (i.e. water levels only, no sampling).

Based on data available to date, groundwater flow in the shallow unit is indicated to be generally to the north-east, away from Tyler Pond and toward the Site (Figure 2). Since some shallow flow would be expected to be toward Tyler Pond, the specific objective of the shallow installations is to determine if and where shallow flow direction changes. Installation of piezometers would also help define flow in the intermediate unit which appears to be radially away from a high point on the south parcel (Figure 3).

Four piezometer pairs are proposed at the top of the bank and four pairs near the edge of the bank as illustrated on Figure 4 and described below:

- Four borings at the top of the bank will be drilled to confirm the presence of the regional clay unit to the depth of Tyler Pond (~ 680 to 690 ft amsl, across the area of interest). This includes locations CRA-947I, -949I, -951I and -953I. Intermediate unit piezometers will be installed in each of these boreholes. It was originally intended that YCUA-MW1 (at CRA-951) be used as an intermediate unit monitor, however closer examination indicates that it appears to be screened across the shallow and intermediate units.
- Four shallow unit piezometers (CRA-947M, -949M, -951M and -953M) would be installed at the top of bank adjacent to the intermediate locations. A review of the YCUA-MW1 to MW4 logs indicates that at least close to the former YCUA WWTP, the shallow unit may be very thin or may not exist.
- Four piezometer pairs (CRA-948M/I, -950M/I, -952M/YCUA-MW4 and -954M/I) will be located as close to the bank of Tyler Pond as possible. Each pair will consist of a shallow unit monitoring well (if the shallow unit exists) and an intermediate unit monitoring well. The intermediate unit borings will be drilled to confirm the presence of the regional clay unit to the depth of Tyler Pond (~680 to 690 ft amsl, across the area of interest). It is noted that the YCUA-MW4 installation is believed to be installed in the intermediate unit and therefore only one installation (CRA-952M) has been proposed for this location.

Details on the target zones/depths and other requirements for these borings/piezometers are provided on Table 1.

An access agreement is in place between RACER and the "Charter Township of Ypsilanti" which permits completion of this scope of work. The access agreement is provided as Attachment 1.

Borehole Drilling and Piezometer Installation Methodology

Borehole drilling and soil sampling activities will be completed utilizing a Geoprobe drilling rig and the dual tube method. This method has been selected to minimize the amount of soil cuttings required to be disposed of. Soil samples will be collected continuously in the deeper borehole at each nest and described

in the field by CRA personnel. A PID will be used for field screening purposes. Soil and water generated during drilling activities will be drummed and labeled. CRA will coordinate with YCUA and/or the Township for a proper staging location and will arrange for waste characterization and disposal.

Piezometers will be constructed utilizing 1-inch diameter, polyvinyl chloride (PVC) well screen and associated riser pipe. Shallow installations will be screened across the water table. Intermediate installations will be screened across the full length of the unit to a maximum of 10 feet. An appropriate grain sized filter pack will be installed in the annulus around each screen and to a height of 1-2 ft above the screened interval. A bentonite pellet seal, at least 2 ft thick will be installed on top of the sand-pack. The remaining annulus to about 2 ft bgs will be backfilled with bentonite pellets or bentonite cement. The wells will be completed with a 2 ft stick-up and installation of a lockable, steel protective casing cemented in place. A concrete pad will be installed around each well. Each well will be labeled after installation.

Stratigraphic and instrumentation logs will be completed for all locations.

2.1.2 Monitoring Well Installation – South Parcel

Three monitoring wells (CRA-960M to -962M) are proposed to be installed on the south parcel to better define groundwater flow in the shallow unit. The proposed locations are illustrated on Figure 4.

Details on the target zones/depths and other requirements for these borings/monitoring wells are provided on Table 1.

Borehole Drilling and Piezometer Installation Methodology

Borehole drilling and soil sampling activities will be completed utilizing a Geoprobe drilling rig and tooling suitable for installation of 2-inch diameter monitoring wells. Soil samples will be collected continuously and described in the field by CRA personnel. A PID will be used for field screening purposes. Soil and water generated during drilling activities will be drummed and labeled.

The monitoring wells will be constructed utilizing 2-inch diameter, polyvinyl chloride (PVC) well screen and associated riser pipe and will be screened across the water table. An appropriate grain sized filter pack will be installed in the annulus around each screen and to a height of 1-2 ft above the screened interval. A bentonite pellet seal, at least 2 ft thick will be installed on top of the sand-pack. The remaining annulus to about 2 ft bgs will be backfilled with bentonite pellets or bentonite cement. The wells will be completed as flushmount installations. Each well will be labeled after installation.

Stratigraphic and instrumentation logs will be completed for all locations.

2.2 Hydraulic Conductivity Testing of Soils - South Parcel

The ability of the upper unit soils (above the clay) to dissipate the flow of groundwater from the proposed leaching bed is critical to prevent mounding. Single well response testing of wells on the south parcel

yielded horizontal hydraulic conductivity estimates (K_H) of 10^{-2} to 10^{-1} cm/sec for the saturated portion of the upper fill/native sand unit and 10^{-4} to 10^{-3} for the intermediate silty sand unit.

This SOW work involves utilizing laboratory methods to classify soils and determine hydraulic conductivity values for the south parcel, particularly for the unsaturated part of the shallow unit into which water will infiltrate.

Five locations (CRA-955SB to CRA-959SB) have been selected for investigation, as shown on Figure 4. The locations to be tested are biased toward the eastern half of the south parcel since it is anticipated that this is where the wetland(s)/leaching bed will be located. The testing locations selected have been proposed to be in the vicinity of existing wells to permit comparison with previous hydraulic conductivity results (assuming the same material is tested). At each location samples will be collected for analysis of hydraulic conductivity and grain size into the shallow unit into which water would be discharged. Locations are proposed in the vicinity of the pilot testing area (CRA-955SB), the proposed leaching bed area (CRA-957SB and 958SB), in between these areas (CRA-956SB) and to the west (CRA-959SB). At CRA-955 (pilot test area) and CRA-958 (proposed leaching bed) additional samples are proposed in the lower part of the shallow zone (for comparison with pilot test results and hydraulic conductivity values obtained from single well response tests) and in the intermediate zone (for comparison with hydraulic conductivity values obtained from single well response tests).

2.2.1 Borehole Drilling and Soil Sampling Methodology

It is anticipated that drilling and soil sampling activities will be conducted using a Geoprobe drilling rig. A single rod (standard) system has been assumed in order to collect larger samples; however, a dual tube system may be required if more than one sampling run is required and the borehole does not stay open. Samples will be collected in clear, hard shell, plastic tubing.

Based on the anticipated soil types (sands), and the small diameter of the samples, the laboratory estimates that it would require a minimum sample length of 3 ft. At each location two boreholes will be drilled; one borehole will be used to collect samples for hydraulic conductivity testing and the other borehole will be used to collect samples for grain size analysis. Two holes are recommended since fines can be washed out of the matrix during constant head testing which would make the sample submitted for K testing unsuitable for subsequent grain size analysis. At each location, the test zone will be the shallow unit into which water will be discharged typically silty sand fill). In addition, the underlying cleaner native sand and the intermediate unit will be sampled in the pilot test area and at one location within the proposed leaching bed.

Shallow unit samples are proposed to be collected in order to characterize the geology from about 3 to 5 ft bgs. However in order to obtain a sample having fairly uniform characteristics, and a sample at least 3 ft in length, the sample may be taken between, for example 2 to 5 ft or 3 to 6 ft bgs.

Details on the target zones/depths for these borings are provided in Table 2. Stratigraphic and instrumentation logs will be completed for all locations.

2.2.2 Laboratory Analysis

Samples for hydraulic conductivity testing will be shipped to the geotechnical laboratory intact with the intervals for analysis marked on each sample sleeve. It is anticipated that samples for grain size analysis will be placed in plastic Ziploc[®] style bags for shipment.

Hydraulic Conductivity

The method by which soil samples are analyzed in the laboratory to determine hydraulic conductivity is dependent on the preliminary estimate of hydraulic conductivity made by the laboratory.

Soils with anticipated hydraulic conductivity values of about 1×10^{-4} cm/sec or greater will be analyzed using ASTM D2434-68 (2006) "Standard Test Method for Permeability of Granular Soils (Constant Head)". Based on soil descriptions and previously calculated K_H values it is assumed that this method will be the primary method utilized. In general, the coarser the soil, the more that is required for analysis. This test requires remoulding (i.e. mixing) of the sample and subsequent compaction to restore the sample to its in-situ density. Typically the in-situ vertical hydraulic conductivity of soils is less than the horizontal hydraulic conductivity because of layering. Since the remoulding process will destroy any layering present, the estimate of K provided will possibly be lower than the in-situ horizontal hydraulic conductivity (K_H) but higher than the in-situ vertical hydraulic conductivity (K_V).

Soils with anticipated hydraulic conductivity values less than about 1×10^{-4} cm/sec will be analyzed using ASTM D5084-03 "Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter". This method utilizes the intact soil sample for analysis after trimming by the laboratory to remove the disturbed portions. The hydraulic conductivity calculated is K_V .

Grain Size

Grain size analysis will be completed in order to accurately classify soils and as a secondary method for estimating hydraulic conductivity.

The samples for grain size analysis will be collected from an adjacent borehole at each location in order to be able to collect soil from the interval corresponding to the K test interval. The sample for K testing is not recommended for grain size analysis since some fines may be washed out during the process of constant head testing.

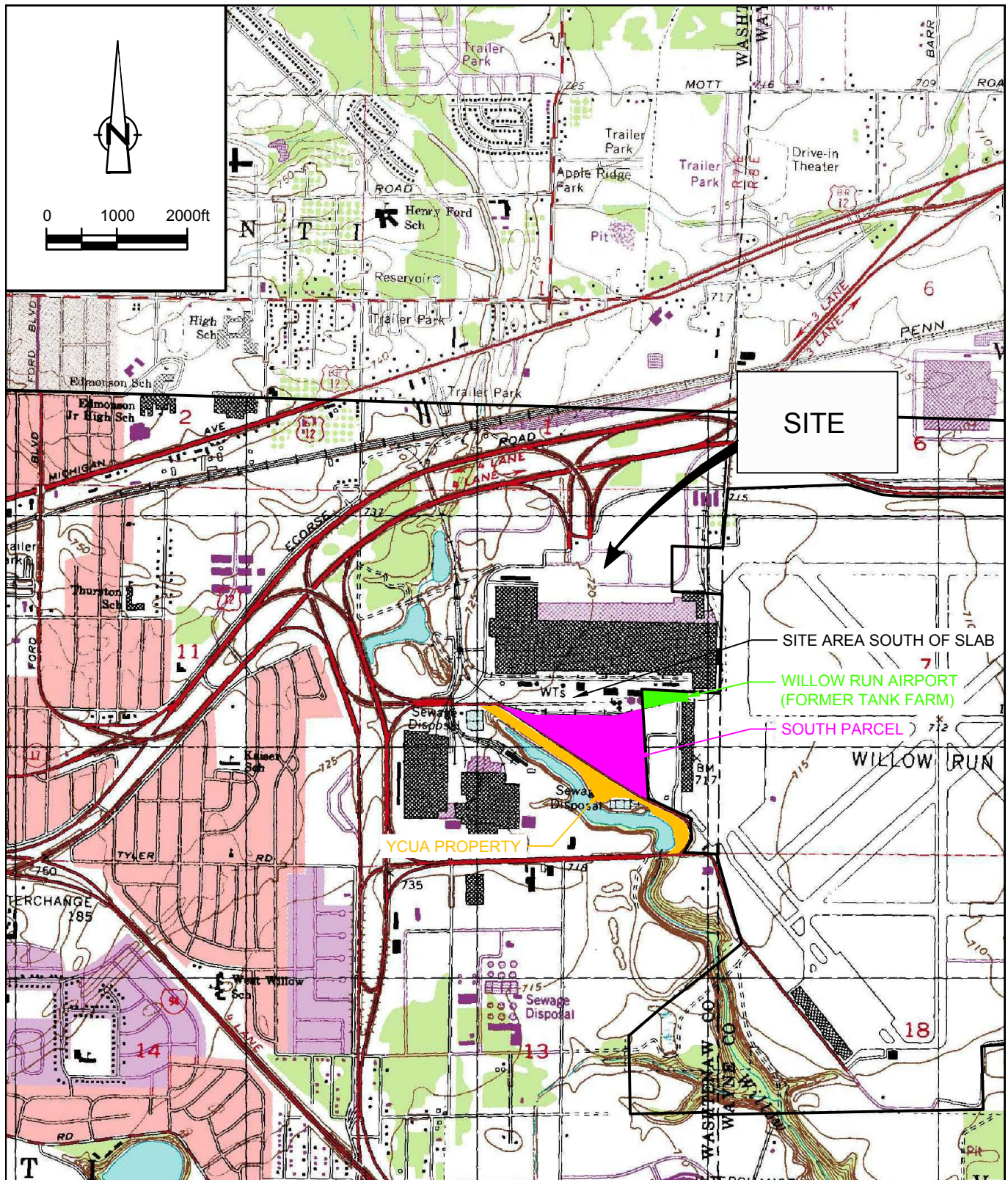
Grain size analysis will be completed by the laboratory using standard sieve analysis to determine the percent gravel, sand and silt/clay fractions. A hydrometer analysis will be conducted to differentiate the silt and clay fractions as necessary.

2.3 Hydraulic Monitoring

On completion of the monitoring well installations, CRA will conduct an interim hydraulic monitoring round to evaluate groundwater flow in the shallow and intermediate units in the area between the building slab and Tyler Pond. The monitoring program will include all wells located on RACER property south of the slab,

(including all south parcel wells), all wells on YCUA WWTP property and wells located on the Willow Run Airport property within the former tank farm area. The depth of all wells will be measured and the general condition (visual inspection) of wells within the former tank farm area will also be assessed in order to determine their suitability for sampling, if desired in the future. The monitoring locations are shown on Figure 5 and listed in Table 3.

Water levels in the shallow and intermediate units will be contoured to define groundwater flow in this area. The groundwater flow direction will be used to guide future work in the vicinity of the tank farm area and as a baseline to measure whether any significant changes are occurring in flow direction due to changing site conditions.



NOTE:
PROPERTY BOUNDARY IS ESTIMATED

figure 1

WORK PLAN AREAS SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK FORMER POWERTRAIN PLANT *Ypsilanti, Michigan*



SOURCE: USGS QUADRANGLE MAP;
EAST YPSILANTI, MICHIGAN
DATE: 1996
EAST DENTON, MICHIGAN
DATE: 1969; REVISED: 1980

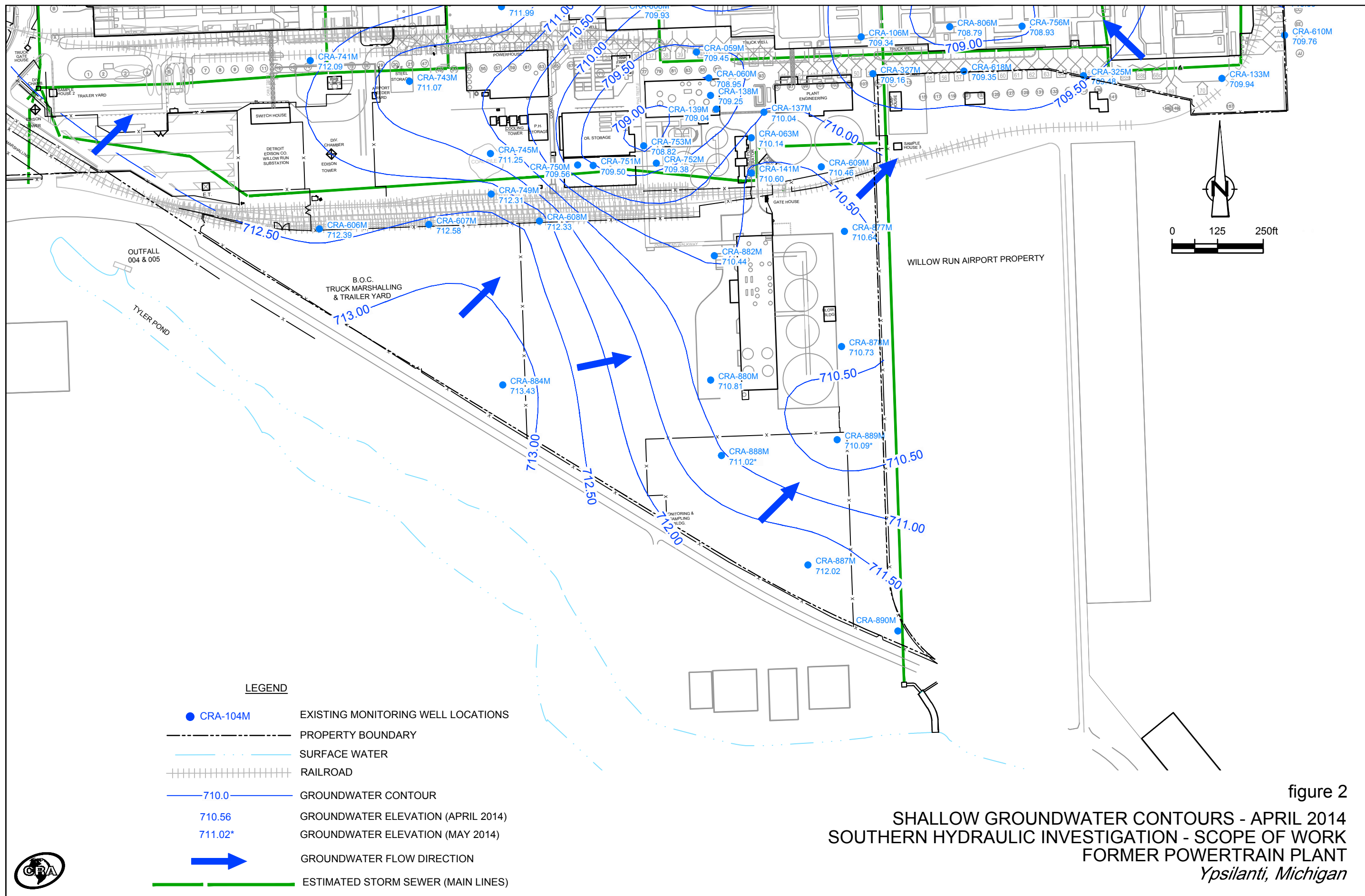
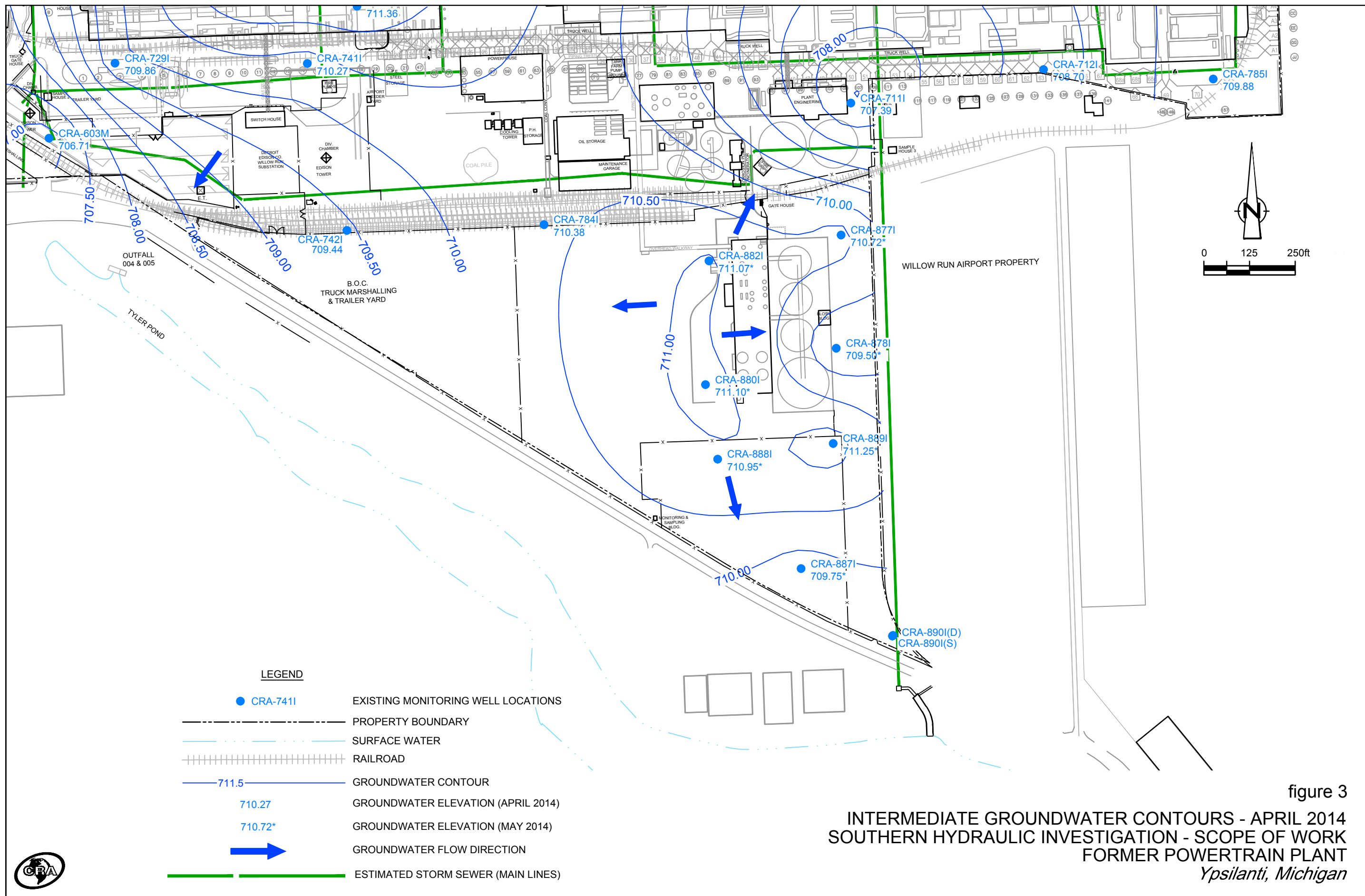
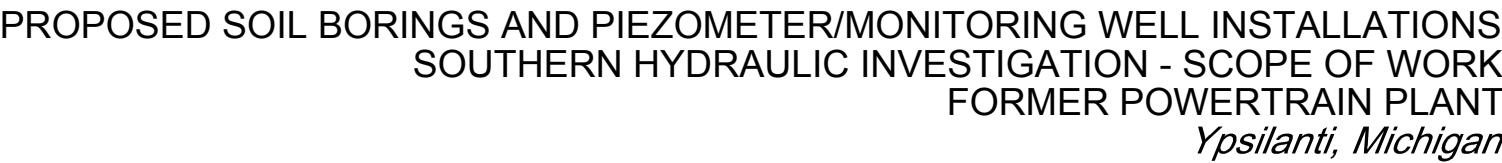


figure 2





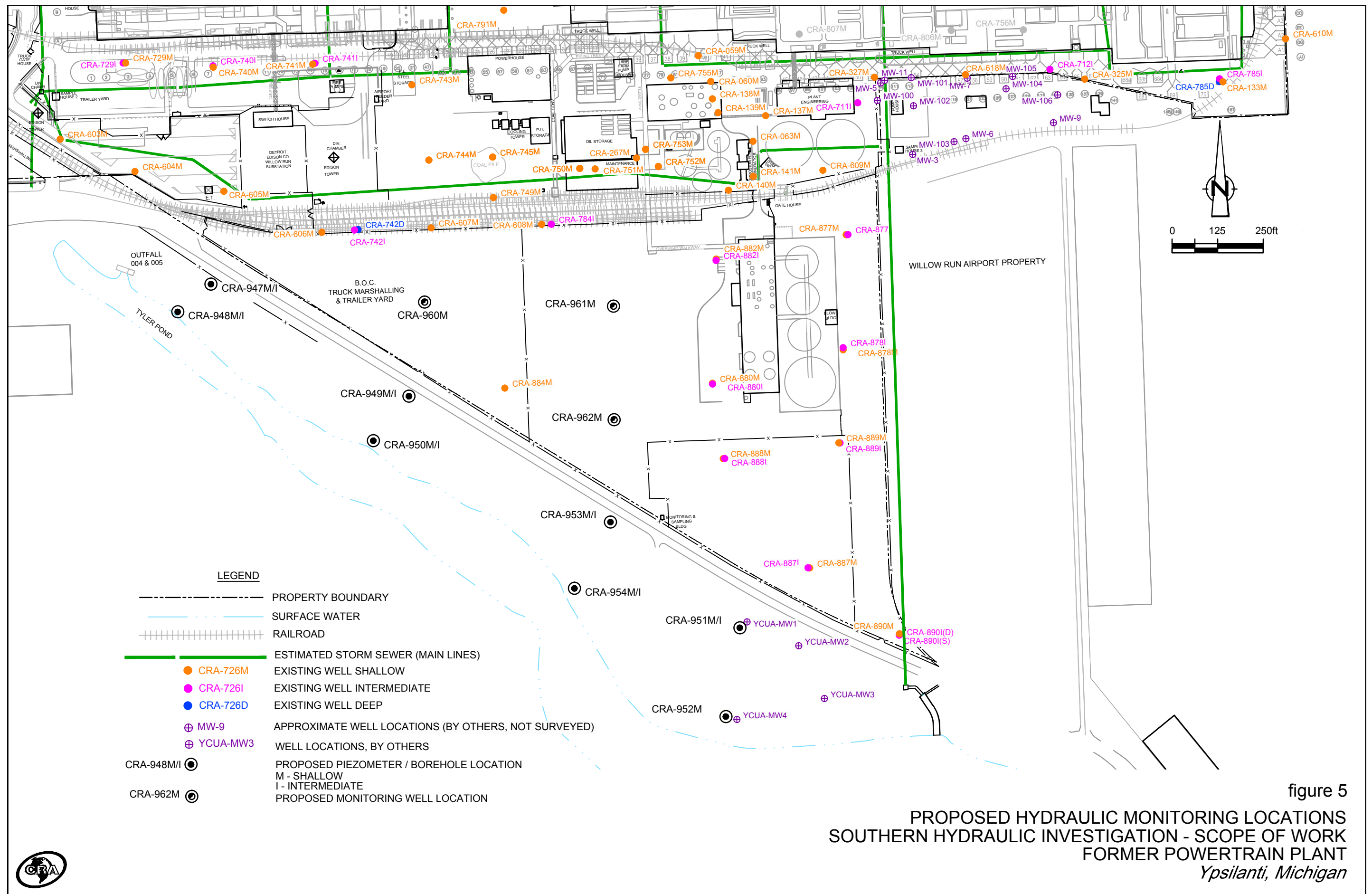


TABLE 1

**PIEZOMETER AND MONITORING WELL INSTALLATION DETAILS
SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK
FORMER POWERTRAIN PLANT
YPSILANTI, MICHIGAN**

Location ID	Target Zone	Installation Purpose	Well Diameter	Screen Installation Interval (Variable Screen Lengths)	Ground Elevation	Target Elevation	Top of Upper Clay (ft amsl)	Top of Int. Clay (ft amsl)	Estimated Borehole Depth	Estimated Piez./MW Depth	Soil Sampling Requirements
YCUA WWTP Property											
CRA-947I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	717.79	690	NA	700.0 E	27.8 E	17.8 E	Continuous
CRA-947M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	717.79	-	710.0 E	NA	10.0 E	7.8 E	-
CRA-948I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	716.78 Top /699.96 Bot	690	NA	700.0 E /???	26.8 E /10.0 E	16.8 E /???	Continuous
CRA-948M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	716.78 Top /699.96 Bot	-	710.0 E /???	NA		6.8 E /???	-
CRA-949I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	716.69	687.5	NA	700.0 E	29.2 E	16.7 E	Continuous
CRA-949M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	716.69	-	710.0 E	NA	10.0 E	6.7 E	-
CRA-950I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	715.13 Top /???	687.5	NA	700.0 E /???	27.6 E /???	15.1 E /???	Continuous
CRA-950M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	715.13 Top /???	-	710.0 E /???	NA		5.1 E /???	-
CRA-951I* (at YCUA-MW1)	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	715.14	682.5	NA	701.0	32.6 E	14.1 E	Continuous
CRA-951M (at YCUA-MW1)	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	715.14	-	710.5	NA	5.0 E	4.6 E	-
CRA-952SB/M (at YCUA-MW4)	Geology to base of Tyler Pond; Install in shallow zone (Water Table)	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	704.31	682.5	700.4	NA	21.8 E	3.9 E	Continuous
CRA-953I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	716.41	685	NA	700.0 E	31.4 E	16.4 E	Continuous
CRA-953M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	716.41	-	710.0 E	NA	10.0 E	6.4 E	-

TABLE 1

**PIEZOMETER AND MONITORING WELL INSTALLATION DETAILS
SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK
FORMER POWERTRAIN PLANT
YPSILANTI, MICHIGAN**

Location ID	Target Zone	Installation Purpose	Well Diameter	Screen Installation Interval (Variable Screen Lengths)	Ground Elevation	Target Elevation	Top of Upper Clay (ft amsl)	Top of Int. Clay (ft amsl)	Estimated Borehole Depth	Estimated Piez./MW Depth	Soil Sampling Requirements
CRA-954I	Geology to base of Tyler Pond; Install in Int. zone	Water Level Monitoring	1-inch	Entire intermediate zone	715.89 Top1 /715.44 Top2 /??? Bot	685	NA	700.0 E /700.0 E /???	30.9 E /30.4 E /???	15.9 E /15.4 E /???	Continuous
CRA-954M	Water Table	Water Level Monitoring	1-inch	Entire shallow zone to base clay, straddle water table	715.89 Top1 /715.44 Top2 /??? Bot	-	710.0 E /710.0 E /???	NA		5.9 E /5.4 E /???	-
South Parcel											
CRA-960M (at CRA-883)	Water Table	Water Level Monitoring	2-inch	Entire shallow zone to base clay, straddle water table	717.14	-	711.0 E	NA	10.0 E	6.1 E	Continuous
CRA-961M (at CRA-885)	Water Table	Water Level Monitoring	2-inch	Entire shallow zone to base clay, straddle water table	717.40	-	709.5 E	NA	10.0 E	7.9 E	Continuous
CRA-962M	Water Table	Water Level Monitoring	2-inch	Entire shallow zone to base clay, straddle water table	716.33	-	710.0 E	NA	10.0 E	6.3 E	Continuous

Notes

E - Estimated

Install in shallow unit (water table) unit even if it appears dry since water levels may change in future.

* Intermediate installation required at CRA-951 since YCUA-MW1 screened across shallow and intermediate units.

TABLE 2

SOIL BORING DETAILS - SOUTH PARCEL
SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK
FORMER POWERTRAIN PLANT
YPSILANTI, MICHIGAN

Location ID	Nearest Location Previously Logged	Target Zone/Material	Rationale	Estimated Depth (ft bgs)	Soil Sampling Requirements	Soil Analysis Requirements	GS Elev. (ft amsl)
1. Pilot Test (PT) Area							
CRA-955SB-A/B	CRA-882	Shallow (SM -Silty Sand Fill)	Unit into which PT Surface Wetland discharges	0.5 to 2.5/3.0	Continuous	Grain size, K	717.35
		Shallow (SP-Sand)	Unit into which PT Subsurface Wetland discharges; Compare with K _H from SWRT (~6.6 to 9.4 ft bgs)	3.0 to 6.0+	Continuous	Grain size, K	
		Intermediate (SM-Silty Sand)	Compare with K _H from SWRT	14.75 to 17.75	Continuous	Grain size, K	
2. Between Pilot Test Area and Proposed Infiltration (Leaching Bed) Area							
CRA-956SB-A/B	CRA-880	Shallow (SP-Sand Fill)	Unit into which a subsurface wetland may discharge + through which flow from proposed leaching bed may migrate.	2.5 to 5.5	Continuous	Grain size, K	716.56
3. Proposed Infiltration (Leaching Bed) Area							
CRA-957SB-A/B	CRA-888	Shallow (SM-Silty Sand Fill)	Unit into which wetland would discharge	1 to 4	Continuous	Grain size, K	715.83
CRA-958SB-A/B	CRA-887	Shallow (SM-Silty Sand Fill)	Unit into which wetland would discharge	1 to 4/4.5	Continuous	Grain size, K	715.68
		Shallow (SP-Sand)	Compare with PT Area; Compare with K _H from SWRT (~3.8 to 7.8 ft bgs)	4.5 to 7.5	Continuous	Grain size, K	
		Intermediate (SM-Silty Sand)	Compare with K _H from SWRT	10 to 15	Continuous	Grain size, K	
4. Area to the West of Proposed Wetland/Infiltration (Leaching Bed) Area							
CRA-959SB-A/B	CRA-884	Shallow (SM-Silty Sand Fill)	Unit through which discharge from wetland would migrate (there is no SP above the upper clay at this location)	2.5 to 5.5	Continuous	Grain size, K	716.66

Notes:

- Two holes required at each location (A and B), one for grain size, one for analysis of K (hydraulic conductivity)
- Laboratory requires minimum sample of 1 kg (approximate length of 3 ft with small diameter Geoprobe sample tubes).
- Mark sample interval for analysis on sample tube
- Zone of interest to ECT is 3 to 5 ft bgs (assuming sufficient unsaturated thickness - ideally 4 ft, per ECT).
- Sample depths are based on borehole logs and have been selected to consider ECT zone of interest, and need to submit a uniform soil type for a 3 ft interval.
 If lithology changed over 3 to 5 ft, the sample type selected was the overlying unit since water would infiltrate this unit first.
 (i.e., if 3 to 4 ft bgs was silty sand and 4 to 5 ft bgs was clean sand then upper unit (silty sand) would be sampled.
 The overlying unit was typically siltier than the underlying unit.
 Also erred toward sampling shallower soils due to limited unsaturated thickness (3.6 to 6.6 ft at locations above based on April/May 2014 water levels).

TABLE 3

**INTERIM WATER LEVEL MONITORING ROUND DETAILS
SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK
FORMER POWERTRAIN PLANT
YPSILANTI, MICHIGAN**

Location I.D.	Most Recent WL (Apr/May 2014 or as noted) (ft brp)	Expected Depth (ft brp)	Notes
SOUTH PARCEL			
CRA-877I	5.49	18.08	-
CRA-877M	5.37	9.32	-
CRA-878I	6.59	18.26	-
CRA-878M	5.33	8.58	-
CRA-880I	5.10	17.40	-
CRA-880M	5.43	8.67	-
CRA-882I	5.73	17.74	-
CRA-882M	6.30	9.70	-
CRA-884M	2.99	6.92	-
CRA-887I	5.52	15.54	-
CRA-887M	3.24	7.42	-
CRA-888I	4.65	15.65	-
CRA-888M	4.49	6.03	-
CRA-889I	4.20	15.60	-
CRA-889M	5.10	6.88	-
CRA-890I(D)	--	19.59	-
CRA-890I(S)	--	12.47	-
CRA-890M	--	8.36	-
CRA-960M	NA	NA	-
CRA-961M	NA	NA	-
CRA-962M	NA	NA	-
Pilot Test Area Wells (ECT Wells)		unknown	-
YCUA WWTP PROPERTY			
CRA947I	NA	NA	-
CRA-947M	NA	NA	-
CRA-948I	NA	NA	-
CRA-948M	NA	NA	-
CRA-949I	NA	NA	-
CRA-949M	NA	NA	-
CRA-950I	NA	NA	-
CRA-950M	NA	NA	-
CRA-951M	NA	NA	-
CRA-952M	NA	NA	-
CRA953I	NA	NA	-
CRA-953M	NA	NA	-
CRA-954I	NA	NA	-
CRA-954M	NA	NA	-
YCUA-MW1	11.61 (Aug-2014)	16.90	-
YCUA-MW1	6.00 (Aug-2014)	11.90	-
YCUA-MW2	9.26 (Aug-2014)	11.84	-
YCUA-MW4	9.62 (Aug-2014)	14.51	-
WILLOW RUN AIRPORT FORMER TANK FARM			
MW-100	--	9.0 ft bgs	Note well condition, suitable for sampling?
MW-101	--	10.5 ft bgs	Note well condition, suitable for sampling?
MW-102	--	13.5 ft bgs	Note well condition, suitable for sampling?
MW-103	--	unknown	Note well condition, suitable for sampling?
MW-104	--	10.5 ft bgs	Note well condition, suitable for sampling?
MW-105	--	10.0 ft bgs	Note well condition, suitable for sampling?
MW-106	--	9.0 ft bgs	Note well condition, suitable for sampling?
MW-3 (86-3?)	--	11.0 ft bgs (86-3)	Note well condition, suitable for sampling?
MW-5 (86-5?)	--	13.5 ft bgs (86-5)	Note well condition, suitable for sampling?
MW-6	--	unknown	Note well condition, suitable for sampling?
MW-7	--	unknown	Note well condition, suitable for sampling?
MW-9	--	unknown	Note well condition, suitable for sampling?
MW-11	--	unknown	Note well condition, suitable for sampling?

TABLE 3

**INTERIM WATER LEVEL MONITORING ROUND DETAILS
SOUTHERN HYDRAULIC INVESTIGATION - SCOPE OF WORK
FORMER POWERTRAIN PLANT
YPSILANTI, MICHIGAN**

Location I.D.	Most Recent WL (Apr/May 2014 or as noted) (ft brp)	Expected Depth (ft brp)	Notes
Main Site - South of Slab			
CRA-059M	8.61	13.81	-
CRA-060M	9.48	11.51	-
CRA-063M	7.52	12.67	-
CRA-133M	5.55	14.18	-
CRA-137M	8.75	13.06	-
CRA-138M	10.23	~11.46	-
CRA-139M	10.06	~12.00	-
CRA-140M	5.78 (Apr-2013)	~11.37	-
CRA-141M	9.57	14.82	-
CRA-267M	13.03	unknown (No Log)	-
CRA-325M	6.75	9.79	-
CRA-327M	7.88	9.69	-
CRA-603M	12.53	10.78	-
CRA-604M	5.42 (Apr-2013)	7.1	-
CRA-605M	9.22 (Apr-2013)	14.7	-
CRA-606M	5.65	7.14	-
CRA-607M	8.31	9	-
CRA-608M	8.28	9	-
CRA-609M	5.58	8.46	-
CRA-618M	7.22	unknown (No Log)	-
CRA-711I	10.01	19.68	-
CRA-712I	7.41	19.58	-
CRA-725I	12.47	16.63	west side of plant, just off map
CRA-725M	8.17	9.72	west side of plant, just off map
CRA-729M	7.24 (Apr-2013)	9.05	-
CRA-729I	10.44	15.56	-
CRA-740I	10.47 (Apr-2013)	17.17	-
CRA-740M	9.03 (Apr-2012)	10.77	-
CRA-741I	9.38	16.74	-
CRA-741M	7.60	9.78	-
CRA-742D	20.30	79.63	-
CRA-742I	8.83	18.69	-
CRA-743M	9.11	10.71	-
CRA-744M	7.11 (Apr-2013)	10.14	-
CRA-745M	7.33	9.96	-
CRA-749M	9.77	12.28	-
CRA-750M	9.16	10.63	-
CRA-751M	9.16	12.62	-
CRA-752M	9.54	13.69	-
CRA-753M	9.69	10.75	-
CRA-755M	8.39 (Apr-2013)	10.15	-
CRA-784I	10.31	20.54	-
CRA-785D	18.21	79.58	-
CRA-785I	5.43	21.16	-
CRA-791M	7.17	10.59	-

Note:

Measure depth to bottom of all installations and indicate whether hard or soft bottom.

Attachment A

Access Agreement with Township of Ypsilanti, Michigan

Supervisor
BRENDA L. STUMBO
Clerk
KAREN LOVEJOY ROE
Treasurer
LARRY J. DOE
Trustees
JEAN HALL CURRIE
STAN ELDRIDGE
MIKE MARTIN
SCOTT MARTIN



Charter Township of Ypsilanti

Clerk's Office

7200 S. Huron River
Drive
Ypsilanti, MI 48197
Phone: (734) 484-4700
Fax: (734) 484-5156

August 20, 2014

Grant Trigger
RACER Trust
500 Woodward Avenue, Ste. 1510
Detroit, MI 48226

Re: Access Agreement between Charter Township of Ypsilanti and RACER Trust

Dear Mr. Trigger:

At the regular meeting held on August 19, 2014, the Charter Township of Ypsilanti Board of Trustees approved the Access Agreement between Charter Township of Ypsilanti and RACER Trust. Enclosed is a signed agreement.

Should you have any questions, please contact Joe Lawson, Planning Director at 734.485.3943 or email at jlawson@ytown.org.

Sincerely,

Karen Lovejoy Roe
Clerk

Enclosure

cc: Joe Lawson, Planning Director
Mike Radzik, OCS Director
Brenda L. Stumbo, Supervisor
File

ACCESS AGREEMENT

This Access Agreement ("Agreement") is made between Charter Township of Ypsilanti, 7200 S. Huron River Drive, Ypsilanti, MI 48197 ("Grantor"), and Revitalizing Auto Communities Environmental Response Trust, 500 Woodward Avenue, Suite 1510, Detroit, MI 48226 (the "Trust") together with its wholly-owned affiliate RACER Properties LLC (collectively, "RACER"). Grantor and RACER may be referred to in this Agreement individually as "Party" and collectively as "Parties."

Grantor is the owner of property located along the north bank of Tyler Pond, south of Airport Road ("Property"), a depiction of which is attached as Exhibit 1. The Property is nearby property owned by RACER, on which RACER is conducting certain Environmental Actions. Grantor is willing to grant access to the Property to RACER and its successors, assigns, employees, consultants, contractors, subcontractors, and other agents (collectively, "Representatives") subject to the terms and conditions of this Agreement.

NOW THEREFORE, for good and valuable consideration, the Parties agree as follows:

1. **License:** Grantor grants to RACER and its Representatives a non-exclusive license to enter upon the Property solely to perform Permitted Activities, (as defined below). Nothing in this Agreement shall limit Grantor's rights to access (or provide others access) onto the Property.
2. **Permitted Activities:** RACER and its Representatives may access the Property to perform the scope of work is set forth in Exhibit 2. Modifications to the scope or work, if any, will be provided to Grantor for review prior to implementation. Permitted Activities shall include, but not be limited to: utility location, soil boring installation, monitoring well installation, surveying, and gauging and sampling of monitoring wells. Grantor agrees that the United States Environmental Protection Agency ("USEPA") or Michigan Department of Environmental Quality ("MDEQ") and their Representatives may access the Property for the purpose of overseeing or supervising Permitted Activities; subject to the provisions contained herein.
3. **Term:** This Agreement shall be effective on the date on which it is signed below by the latter of the two Parties ("the Effective Date"), and shall expire upon completion of the Permitted Activities or the passage of five (5) years, whichever is sooner, except for provisions expressly designated in this Agreement as surviving the expiration date. Except as otherwise provided in this Agreement, RACER may terminate its rights and obligations by providing ten (10) days' notice to Grantor.
4. **Operations:** In completing the Permitted Activities:
 - a. RACER shall use all commercially reasonable efforts to avoid: (i) damage to the Property (and persons and personal property thereon); (ii) interference with Grantor's or any other party's operations at the Property; and (iii) to the fullest extent possible, access to the Property by any unauthorized persons.
 - b. Grantor shall use all commercially reasonable efforts to avoid interference with RACER's operations at the Property.
 - c. RACER shall: (i) comply with all applicable laws, reasonable written procedures established in advance by Grantor and the requirements of any insurance carriers insuring the Property or any interests therein that are communicated to RACER in writing in advance; and (ii) obtain all permits required for the Permitted Activities and promptly deliver copies to Grantor at Grantor's request.

- d. RACER shall repair any damage to the Property resulting from the Permitted Activities within thirty (30) days before the expiration of this Agreement, and shall leave the Property in substantially the same condition it was on the date of the execution of this Agreement.
- e. Any equipment installed on the Property by RACER shall remain RACER's personal property. RACER shall promptly remove its personal property from the Property after the termination of this Agreement.

5. **Indemnification:**

- a. RACER shall release, indemnify, defend, and hold Grantor harmless from and against claims, losses, damage, injuries, liabilities, fines and penalties, (collectively, "Claims") to the proportionate extent arising from the negligence or willful misconduct in the performance of the Permitted Activities conducted by RACER or its Representatives. Nothing herein shall limit the obligations of RACER and its Representatives to maintain insurance under Paragraph 7 below, or affect Grantor's right and ability to recover under such insurance policies as an additional insured.
- b. Grantor shall indemnify, defend, and hold RACER and its Representatives harmless from and against all Claims arising out of: (i) the breach by Grantor of its obligations under this Agreement, or (ii) the negligence or willful misconduct of Grantor or any Representative thereof.
- c. Notwithstanding anything to the contrary set forth in this Agreement, in no event shall an indemnifying party be liable to the other for: (i) consequential damages or lost income, value or profits or punitive or treble damages of any type or manner, even if foreseeable; and (ii) any Claim arising from the act or omission of the indemnified party.

6. **LIMITATION OF LIABILITY:**

RACER'S OBLIGATIONS HEREUNDER SURVIVE EXPIRATION OF THIS AGREEMENT, PROVIDED THAT ANY INDEMNIFICATION OR OTHER OBLIGATIONS OF RACER ARE LIMITED BY THE TERMS OF THE SETTLEMENT AGREEMENT, NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY.

7. **Insurance:**

- a. Prior to entering the Property to conduct Permitted Activities, RACER shall obtain, and throughout the Term maintain, insurance against all claims for personal injury (including death), and property damage, under a policy or policies of comprehensive general liability insurance with limits at least equal to \$1,000,000 per occurrence from a reputable company or companies licensed to do business in the State of Michigan.
- b. RACER and its Representatives shall obtain, and throughout the Term maintain, workers' compensation insurance to cover any employees engaged in the Permitted Activities.
- c. RACER contractors and consultants that perform Permitted Activities on the Property shall obtain, and throughout the Term maintain, umbrella or excess liability insurance and contractor's general, professional, and pollution liability insurance providing not less than \$25,000,000 in aggregate coverage from a reputable company or companies licensed to do business in the State of Michigan. These policies shall name Grantor as an additional insured, and shall be primary to RACER's policies.

- d. RACER shall provide Grantor with a minimum of thirty (30) days' notice of cancellation of any insurance maintained under this paragraph. All policies of insurance maintained under this section shall be endorsed to provide a waiver of subrogation as to Grantor and its Representatives. The coverage must provide for separation of insureds and must not include a cross-suits exclusion. All such policies shall be primary to any other insurance coverage available to Grantor. RACER and its Representatives shall obtain and deliver to Grantor certificates of insurance evidencing the coverage required by this Section in advance of any access to the Property.

8. **Notice:**

- a. RACER or its Representatives will notify Grantor or Grantor's Representatives, a minimum of forty-eight (48) hours before accessing the Property to complete Permitted Activities. In the event of any emergency or where otherwise required by law, RACER shall make reasonable efforts to notify Grantor or Grantor's Representatives before accessing the Property. Notices regarding accessing the Property to complete Permitted Activities or in the event of an emergency or where otherwise required by law, shall be made by electronic mail or telephone.
- b. All other notices required to be given pursuant to this Agreement shall be sent by certified or registered mail, or by an overnight courier (Federal Express or U.P.S.), along with an electronic mail copy to the following addresses:

To RACER:

Grant Trigger
Cleanup Manager
RACER Trust
500 Woodward Avenue, Suite 1510
Detroit, MI 48226
Email: gtrigger@racertrust.org

and

To Grantor:

Name: _____
Title: _____
Charter Township of Ypsilanti
7200 S. Huron River Drive
Ypsilanti, MI 48197
Email: _____

9. **Governing Law:** Any legal suit, action or proceeding arising out of or based upon this Agreement may be instituted in courts of the State of Michigan, except to the extent that the United States Bankruptcy Court for the Southern District of New York, Case No. 09-50026 (REG), has exclusive jurisdiction over claims brought under Paragraph 102 of the Settlement Agreement. Service of process, summons, notice or other document sent to the address in Paragraph 8 is effective service of process for any suit, action or other proceeding brought in courts of the State of Michigan or in the Bankruptcy Court.

10. **Entire Agreement:** The terms and conditions of this Agreement shall not be modified other than by a written agreement signed by both parties, all of which together with this Agreement and Exhibits (and the Settlement Agreement) constitute a fully executed agreement.
11. **Severability:** If any term of this Agreement is found to be unenforceable in any jurisdiction, then such term shall be enforced to the maximum extent permitted by law, rather than voided, and the remaining terms of this Agreement shall remain in full force and effect.
12. **Assignability:** Neither this Agreement, nor any rights hereunder, may be assigned, whether voluntarily or by operation of law, except in strict compliance with the provisions hereof.
13. **Cost of Enforcement:** In the event any declaratory or other legal or equitable action is instituted between Grantor and RACER in connection with this Agreement, then the prevailing party shall be entitled to receive from the losing party all of its costs and expenses, including court costs and reasonable attorneys' fees and costs.
14. **Survival:** The terms and conditions provided herein survive the expiration of this Agreement.
15. **Environmental Report:** RACER shall provide to Grantor a copy of all final reports submitted to USEPA or MDEQ containing data or information from RACER's completion of Permitted Activities on the Property.

The Parties or their duly authorized representatives hereby represent and warrant that each has the requisite authority to execute this Agreement and has done so on the date specified below.

GRANTOR:

[]

By:

Dorenda L. Stumler

Karen Jennings Rap

RACER:

By:

Grant Trigger

Grant Trigger
Cleanup Manager

Date

8-20-14

8-20-14

Date

7-17-14

EXHIBIT 1
DEPICTION OF THE PROPERTY

Property located along the north side of Tyler Pond, south of Airport Road.

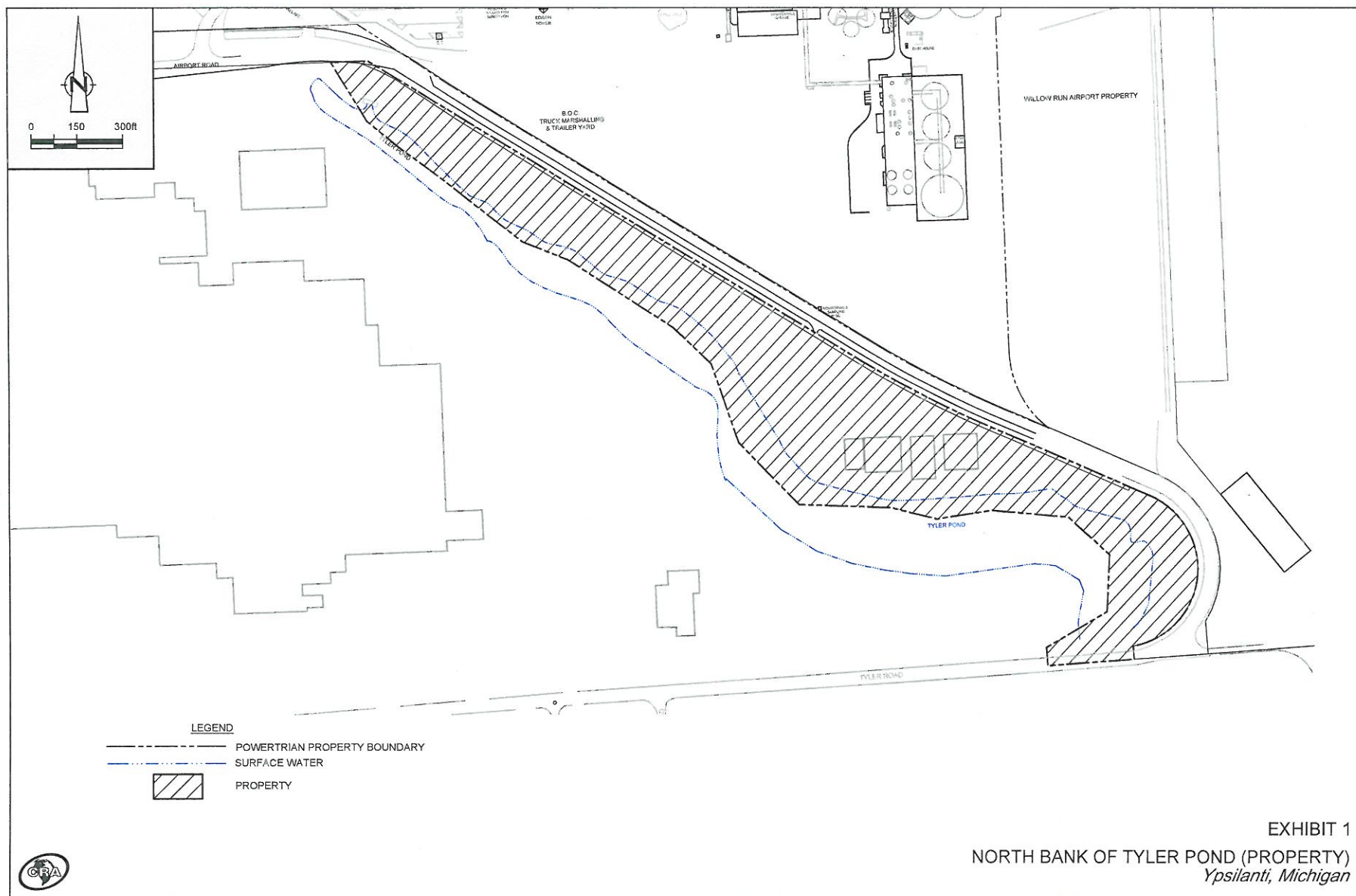


EXHIBIT 2
SCOPE OF WORK



**CONESTOGA-ROVERS
& ASSOCIATES**

14496 Sheldon Road, Suite #200

Plymouth, Michigan 48170

Telephone: (734) 453-5123

www.CRAworld.com

Fax: (734) 453-5201

MEMORANDUM

To: Grant Trigger
REF. NO.: 017358-T01

FROM: Beth Landale/Heather Hutchinson/bw/127/Det.
DATE: July 8, 2014

CC: Tom Kinney, CRA
Scott Adamowski, CRA
Laina Jerdon, CRA

RE: **SCOPE OF WORK – Off-Site Investigation – Groundwater Monitoring Piezometer Installation
Along North Bank of Tyler Pond**

1.0 Introduction

Conestoga-Rovers & Associates, Inc. (CRA) is presenting this Scope of Work (SOW) for the installation of groundwater monitoring piezometers on Ypsilanti Township property located south of Airport Road and north of Tyler Pond in Ypsilanti, Michigan (Property) as shown on Figure 1.

2.0 Scope of Work

CRA has identified the following scope of work:

- Install 6 pairs of wells (piezometers) along the north bank of Tyler Pond to monitor groundwater flow

Based on the issues identified, the following tasks will be completed:

Task 1.0: Project Planning
Task 2.0: Monitoring Well Installation
Task 3.0: Monitoring Well Gauging

Task 1.0: Project Planning

CRA will complete all necessary project management and coordination; including third party utility locator and drilling subcontractor procurement. Access to the property will be coordinated through the township.

Task 2.0: Monitoring Well Installation

CRA will install 6 pairs of piezometer wells along the north bank of Tyler Pond. Up to two wells will be installed at each of the 6 locations, one screened within the shallow aquifer and one screened within the

intermediate aquifer, depending on geology encountered. Three of the pairs of wells will be located at the top of the bank and the other three pairs of wells will be located at the bottom of the bank. Figure 2 presents the proposed locations, which are subject to field modification based on utilities and access. Based on the geology encountered and/or the gauging data (discussed below), additional locations may be required on the Property.

Soil borings will be advanced using a Geoprobe drill rig with auger capabilities. All drilling equipment will arrive at the Property clean and all drilling equipment will be cleaned between locations. A 1-inch diameter, polyvinyl chloride (PVC) well screen and associated riser pipe will be installed and completed at the surface with a flush mount and/or 2 foot stick up.

Waste generated will be drummed and properly labeled. CRA will coordinate with YCUA and/or township for proper staging location for characterization and disposal.

Task 3.0: Monitoring Well Gauging

Following the completion and development of each well, monitoring wells will be surveyed and gauged to characterize groundwater flow to Tyler Pond. Samples for laboratory analysis will not be collected, with the exception of waste characterization samples.