BUCHER, WILLIS & RATLIFF
ENGINEERS ▮ PLANNERS ▮ ARCHITECTS

June 13, 1994

Salina Airport Authority
3237 Arnold Avenue
Salina, KS 67401

Attention: Mr. Timothy F. Rogers, AAE
Executive Director

Re: Pump House No. 305 Summary Report

Gentlemen:

Bucher, Willis & Ratliff is pleased to submit the enclosed summary report regarding the environmental conditions at Pump House No. 305. The report provides a synopsis of the activities involved in our compliance audit, limited environmental investigation, and remediation. The elements of the report include the following:

- Underground storage tank testing and compliance.
- Lead paint survey and abatement.
- Limited subsurface soil investigation.
- Short term remedial activities.
- Future rehabilitation activities.

The results of these activities are the basis for the Salina Airport Authority decision to accept ownership of Pump House No. 305 from the USACE - Kansas City District. The future rehabilitation activities provide the scope of work necessary to meet future Kansas Department of Health and Environment requirements.

We appreciate the opportunity to work with you, as well as the knowledgeable members of your staff and the board. We are pleased to have a part in this important project which will provide 300,000 gallons of fuel storage capacity to the airport.

Sincerely,

BUCHER, WILLIS & RATLIFF

John H. Bednarczyk, P.E.
Director, Hazardous Waste Services

JHB:dah

Enclosure

▮ 7920 WARD PARKWAY, SUITE 100 ▮ KANSAS CITY, MISSOURI 64114-2021 ▮ 816/363-2696 ▮

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1.0 INTRODUCTION

The Salina Airport Authority (SAA) contracted with Bucher, Willis & Ratliff (BWR) to perform environmental services related to the potential acquisition from the U.S. Army Corps of Engineers of twelve 25,000 gallon underground storage tanks (UST's) located at Pump House No. 305 at the Salina Municipal Airport. The environmental services have included an environmental compliance audit of the UST's and the oversight of UST tightness testing, UST visual inspection, a soil gas survey, lead paint survey and lead abatement in the pump house building.

The two Fixed Base Operators (FBO's) at the Salina Municipal Airport require storage of jet fuel and a smaller quantity of aviation gasoline. Together, they currently pump about 2.2 million gallons of fuel on an annual basis, using four of the twelve UST's for the necessary fuel storage capacity. Fuel quantities are projected to continue increasing, and there is a possible requirement for fuel storage for potential military operations.

Current airport usage projections indicate that future civilian fuel consumption will increase over the next ten to 20 years and require the storage capacity of more of the UST's, and potential military operations could potentially require all twelve of the UST's. The basis of the study considers the cost for environmental compliance for two of the UST's on a short term basis, five UST's over the next 10 to 20 years to accommodate anticipated future growth in the civilian operations, and twelve UST's for the potential military operations.

The schedule for providing UST capacity is accelerated because Pump House No. 305, along with seven other pump houses at the airport, is scheduled for demolition by the U.S. Army Corps of Engineers (USACE) Kansas City District under the Department of Defense Formerly Used Defense Site (FUDS) Program. The FUDS Program was first enacted in 1984, and requires the Department of Defense to review the environmental condition of formerly used sites in an effort to determine if deleterious conditions were caused by the past operations, and perform the necessary environmental remediation. Under the FUDS Program, the SAA has been given the option of assuming ownership of Pump House No. 305 and the UST's, and allowing USACE to demolish and remediate the remaining seven pump houses along with the hydrant fueling and defueling system.

The purpose of this report is to summarize the activities performed or managed by Bucher, Willis, & Ratliff to evaluate the feasibility of assuming ownership of Pump House No. 305. The conclusions of study and the recommendations for further work are included in the report.

2.0 SITE HISTORY

The construction of the military facilities at the Salina Municipal Airport was started in 1941, and the Smoky Hill U.S. Army Airfield was commissioned in 1942. The airfield was operated as an Army training facility until it was closed in 1946. The facilities underwent major reconstruction, and they were re-activated as a U.S. Air Force Strategic Air Command (SAC) facility which operated from 1952 through 1954. In 1957, the facility name was changed to Schilling Air Force Base, and it operated as such until it closed in 1965. From July 1966 through the present, the airport was operated as the Salina Municipal Airport.

Pump House No. 305 was constructed as part of the SAC expansion in about 1952. USACE-Kansas City District is currently reviewing the 95% submittal for the removal of the first of eight pump houses, Pump House No. 3, as part of the remediation under FUDS. It is anticipated that review and contracting will be completed in about two months, and the closing of the hydrant fueling and defueling pipelines, and first pump house will begin at that time. SAA has been given the option of retaining Pump House No. 305 to support its current and future fuel storage requirements, with the understanding that the costs associated with both current and future environmental compliance will be paid for by SAA. SAA had correctly foreseen the impact of the FUDS Program impact on their fuel storage capability, and had developed plans for installing a new aboveground storage tank (AST) system. Recent funding constraints, however, make that a less desirable option, and assuming ownership of Pump House No. 305 may have a net cost advantage after environmental compliance costs are included.

3.0 ENVIRONMENTAL COMPLIANCE AUDIT

An environmental compliance audit was performed to determine the environmental regulatory constraints and their costs as they impact the UST's at Pump House No. 305, to enable the SAA to evaluated the most economical means of meeting their current and projected fuel storage needs. A report of the environmental compliance audit was prepared and submitted to SAA in April, 1994. The report is included in Appendix A and is summarized below.

The compliance audit included of the following activities:

- A March 31, 1994 site visit by John Bednarczyk, P.E., Director of Hazardous Waste Services for BWR, The visit included a visual non-intrusive site survey in which the general environmental condition of the pump house was noted and the fuel storage equipment and appurtenances were reviewed in accordance with the requirements of the KDHE UST requirements. Pertinent records, correspondence, and drawings were also reviewed.

- Contractors were contacted from the KDHE list of licensed UST contractors to obtain budgetary cost information required for pending compliance requirements.

- KDHE Storage Tank Section was contacted to determine current permit status of the UST's at Pump House No. 305, and to discuss pending KDHE compliance requirements.

- Lee Furst, Program Manager of the U.S. Army Corps of Engineers, Kansas City District was contacted to discuss the FUDS schedule.

The report (Appendix A) includes a description of the facility and a discussion of the KDHE UST requirements. The identified KDHE requirements are as follows:

- Registration and fee.
- Operating permits.
- Release detection.
- Inventory Control.
- Corrosion protection.
- Spill and overfill protection.
- Underground storage tank closure.
- Reporting of releases.
- Insurance requirements.

Two scenarios were evaluated in the report. The first scenario was replacement of the Pump House No. 305 storage capacity with two 12,000-gallon above ground storage tanks and the second, upgrades and modifications to the Pump House No. 305 UST's to meet current and future KDHE UST regulations.

The recommendations of the UST compliance audit are reprinted from the report below.

> *The 12 existing 25,000 gallon UST's have been in operation since about 1952, and they have been cathodically protected since about 1961. They are registered with KDHE, and they currently satisfy all required KDHE environmental requirements. There have been no releases reported to KDHE, and the preliminary site visit did not indicate any evidence of a release. There appears to be no evidence supporting an imminent failure of the existing UST's.*
>
> *A proposal to install two packaged 12,000 gallon AST* [above ground storage tank] *units has been submitted. The approximate construction cost of $6.94 per gallon of*

storage capacity is high as compared to the cost to upgrade the 12 existing 25,000 gallon UST's. Further, the AST option will not provide sufficient fuel storage capacity for the anticipated growth in civilian operations, and will not support a potential military operation.

It is recommended that the integrity of the UST's be verified by an internal inspection, followed by a tightness test. If each UST passes the KDHE guidelines, it is recommended that the UST be retained for service by SAA, and notification given to USACE to isolate the fueling and defueling pipelines. For each retained UST, it is recommended that a replacement cathodic protection system be installed immediately. Although spill and overfill protection is not required until 1998, it is recommended that these modifications, including an environmental pad, collection system and oil/water separator, take place as the tanks are retained.

The USACE has allowed SAA 30 days to decide to retain the UST's or allow the USACE to close them under the FUDS Program. Since the USACE will not be responsible for the cost of UST closure after the 30 day period, it is imperative that SAA is reasonably assured that the UST's are not leaking. The recommended sequence for this determination is to perform internal inspection and tightness testing on the empty tanks within the 30-day period. The estimated construction cost for these tests is $1,500 per tank. The results would identify the potential risk, including possible future UST closure, and allow SAA to give their final determination to the USACE. If SAA decides to retain the UST's, subsequent UST modifications would continue at the construction costs indicated.

From the cost estimates in Section 7.0, it can be determined that the construction costs for implementing the recommendations noted above, including closure of the non-retained UST's, would be approximately:

UST's Retained	*Cost*
2-25,000 gallon UST's	*$120,734*
5-25,000 gallon UST's	*$103,934*
12-25,000 gallon UST's	*$ 69,734*

A breakdown of these construction costs is included in Appendix D [See Appendix A].

Lastly, it is recommended that SAA contact their insurance carrier to arrange for third party liability insurance if the decision to retain the UST's is concluded.

Mr. Tim Rogers, SAA Executive Director, presented the findings and recommendations of the Environmental Compliance Audit to the SAA Board on April 13, 1994. The Board provided BWR with the following direction.

- Proceed with tank tightness testing and visual inspection for all twelve UST's.
- Perform a limited subsurface soil investigation around the pump house to investigate the release of fuel from the UST system.
- Perform a lead-based paint survey of the pump house and vicinity.

4.0 REMOVAL OF CATHODIC PROTECTION RECTIFIER

Cathodic protection was installed on the UST's in 1961 and had functioned continuously until May, 1994 when the rectifier was removed because it contained Polychlorinated biphenyls (PCB's). The PCB containing rectifier has been removed from the site and disposed of. See Section 7.3 for a discussion of planned work to restore the cathodic protection to the UST's.

The April 1994 Compliance Audit noted that the KDHE requirement for cathodic protection does not take effect until December 23, 1998. The removal of the rectifier does not, therefore, constitute a violation of KDHE requirements. The audit did recommend the re-installation of replacement cathodic protection equipment on an expedited basis if the decision was made to accept ownership of the UST's from USACE-Kansas City District. The reason for the recommendation was to prevent the start of external corrosion of the UST's in the conditions found at Salina Airport.

Although the extent of external corrosion cannot be fully ascertained without excavating the UST's, it is worth noting that no corrosion was observed on the adjacent de-fueling lines when they were excavated on April 26, 1994. Further, as the USACE-Kansas City District begins the removal of UST's associated with seven other pump houses, no external corrosion has been observed. However, one of the cathodic protection vendors identified in Section 7.3 noted that the UST's had already lost polarity, indicating that the UST's were susceptible to external corrosion at any time, and re-installation of protective equipment should not be delayed.

5.0 LIMITED ENVIRONMENTAL INVESTIGATION

Following the direction provided to BWR by the SAA board subsequent to the April 13, 1994 meeting, a limited investigation was performed to assess:

- The integrity of the UST system,

- The presence of subsurface petroleum contamination of the soil in the immediate vicinity of the pump house, and

- The presence of lead-based paint and/or lead related hazards in and around the pump house.

Initially, tank tightness testing and internal visual inspections were planned to assess the UST system. However, the visual inspections were canceled after the tank tightness testing results indicated that the tanks were not leaking.

5.1 TANK TIGHTNESS TESTING

BWR contacted two contractors and requested proposals for tightness testing the 12 UST's. The contractors contacted were:

Dupree Testing Services
P.O. Box 364
Ulysses, Kansas 67880
(316) 356-5678

Tanknology Corporation International
404 N.W. Business Park Lane
Riverside, Missouri 64150
(816) 587-5556

The proposal of Dupree Testing Services was accepted. Dupree performed a tightness test using the Tracer Tight® method, which meets the criteria set forth in National Fire Protection Association (NFPA) 329 for a precision leak test and is accepted by KDHE. The Tracer Tight® method involves inoculating the tank with a volatile tracer substance and allowing the inoculant to remain for a two week period. At the end of the two week period, probes are installed outside of and adjacent to the tank and a gas sample is extracted from the probe. The gas sample is submitted to Tracer Research Corporation for gas chromatograph analysis. The sample is analyzed for the tracer inoculant chemicals and total volatile hydrocarbons. The fluid level in the tanks are also measured at the time of inoculation and again at the time of probe sampling. A final report provided by Dupree and Tracer Research Corporation was submitted to SAA and is included in Appendix B.

All the UST's except No. 4 and 5 were inoculated with tracer fluid and the probes were sampled on April 22, 1994. Gas samples were collected on May 6, 1994 from soil probes located as shown on Figure 1 in Appendix B. The samples were then submitted to the Tracer laboratory for analysis.

UST's No. 4 and 5 were not inoculated initially because they were found to be filled with water because the hydrant de-fueling lines serving the tank had been left open and water had entered the lines and drained to the tanks filling them. The SAA isolated UST's No. 4 and 5 from the hydrant de-fueling lines and emptied the UST's. Dupree then returned to the site on April 27, 1994 and measured the water level in Tanks No. 4 and 5. The water level was again measured on May 12, 1994. Because UST's No. 4 and 5 were empty and below the water table during testing, an ingress water test was performed. The ingress water test is based on the fact that groundwater will enter an empty tank located below the water table if openings are present in the tank. Tanks No. 4 and 5 were passed as not leaking solely on the results of the water ingress test.

All the inoculated UST's passed the criteria of not leaking in accordance with NFPA 329. No tracer was detected in the gas samples except samples 15 and 20 near the pump assembly for UST No. 6. Since the water level in Tank No. 6 did not vary during the test period, the tracer detections were discounted and the tank was passed on the criteria of the water ingress test. Mr. Brad Dupree was consulted on June 10, 1994 regarding the potential release point for the tracer detected in samples 15 and 20. After conferring with the SAA, he said the tracer fluid may have escaped the tank because the pump motor is product-cooled from the pump discharge line and the product returns to the tank by draining down through the outer pump casing which is threaded into the top of the tank but is not sealed to the atmosphere at the top of the casing. He said a minor vapor release point such as this could explain the detections of tracer.

Total Volatile Hydrocarbons were detected in all of the gas samples in levels ranging from 0.14 to 374 mg/l (gas). Soil gas sample results can not be directly correlated to concentrations by weight of hydrocarbons in soil or the KDHE UST action levels. The higher level of hydrocarbons in the soil gas appear to be located under the pump house.

5.2 Subsurface Soil Investigation

BWR contacted two vendors and requested proposals for performing a limited subsurface soil investigation in the vicinity of the pump house. The contractors are:

Plains Environmental Services
P.O. Box 6288
Salina, KS 67401-0288
(913) 827-4545

Terracon Environmental
7810 N.W. 100th Street
Kansas City, MO 64153
(816) 891-7717

Plains Environmental Services (PES) was retained to perform a limited subsurface soil investigation using a Geoprobe-type boring to collect soil samples. Soil samples were collected on April 26, 2994 at the six approximate locations indicated on Figure 1. Samples were collected by pushing a Geoprobe-type soil probe at each sampling location to a depth of two to three feet. A small soil sample was collected and the probe was advanced to a depth of about 11 to 12 feet. A second small soil sample was collected at that depth. The two soil samples from each boring were then analyzed in the PES analytical laboratory.

The data results are presented in the PES Laboratory Report that is included in Appendix C. The analytical procedure and interpretation of the data , as described in the PES Laboratory Report, is reprinted below.

> *All samples were soil samples that were analyzed by headspace analysis. Several grams of soil were accurately weighed in a 40-ml VOC vial. The sample vial was capped tightly and heated at 60 C for 30 minutes. This technique drives the volatile components from the soil material into the headspace. A sample of headspace was injected into the gas chromatograph for analysis.*
>
> *All Analyses were performed by Plains Environmental Services using GC/FID.*
>
> *All six (6) locations showed significant levels of contamination at the 11-12' interval. Of the shallow soil samples, only location number 2 (2-3') showed more than trace levels of hydrocarbon contamination.*

BWR received a preliminary data report from PES and contacted Scott Lang of KDHE to discuss the results on April 27, 1994. Mr. Lang's interpretation of the data is that the hydrocarbon contamination observed by PES may be attributable to spilled fuel or contaminated stormwater runoff from the aircraft ramp and not necessarily from a release associated with the UST's. The non-detection of TVHC in the soil gas samples collected by Dupree as well as the results of tank tightness testing supports KDHE's interpretation of the probable source of hydrocarbon contamination. KDHE also stated that the levels observed are such that significant migration in the subsurface is unlikely. Mr. Lang added that the USACE-Kansas City District may be required to install monitoring wells at 200 foot intervals to the east of the ramp area to determine the extent of groundwater contamination, if any, from spills during the military operation of the air base. Lastly, Mr. Lang said that any future costs which may be incurred by the SAA for cleanup of the hydrocarbon contamination would qualify for reimbursement under the Kansas Trust Fund.

The PES soil headspace data is somewhat comparable to the KDHE UST action levels in soil. More than 620 mg/Kg total volatile organics were measured in sample 2 (depth of 11 to 12 feet) near the de-fueling line gate valve for tank No. 8. Based on the total volatile organics level, soil in this area would probably exceed the KDHE UST action levels.

5.3 LEAD PAINT SURVEY

BWR contacted two vendors and requested proposals for performing a lead-based paint survey in and around the Pump House No. 305. The two contractors were:

Roth Asbestos and Environmental Consultants, Inc.
1900 West 47th Place
Westwood, Kansas 55205
(913) 831-4795

Ramsey-Schilling Consulting Group, Inc.
6400 West 95th, Suite 200
Overland Park, Kansas 66212
(913) 648-6000

Ramsey-Schilling was retained to perform the survey that included sampling, data evaluation, and providing recommendations for lead abatement as necessary. Lead-Based-Paint Survey for the Salina Airport Authority, prepared by Ramsey-Schilling is included in Appendix D. The field portion of the survey was performed on April 27, 1994. The survey included field screening the interior and exterior painted surfaces and collecting physical samples for laboratory analysis. Field screening was performed using X-ray fluorescence spectroscopy. The samples for laboratory analysis were external soil samples , interior wipe samples from the interior floor (for characterizing dust), and interior paint chip samples from the internal equipment and surfaces.

Lead was observed above established levels of concern in the field screening of painted surfaces, dust wipe samples, and paint chip samples. The specific results are presented in Appendix D. Ramsey-Schilling's recommendations are reprinted from their report below.

> *Lead was found in all the types of samples taken. However, the most immediate concern is lead dust found within the building.*
>
> *Ramsey-Schilling recommends that the lead be cleaned to a level below 200 $\mu g/ft^2$ immediately to prevent contamination or lead poisoning of any personnel entering the*

building. As an alternative, personnel could wear respirators and disposable coveralls in the building with proper decontamination when leaving. The cleaning of the building can be accomplished on a quick basis by having a lead abatement contractor start on the project with Ramsey-Schilling giving on-site abatement design instruction and providing air sampling monitoring checks as well as the required clearance wipe tests. The clearance wipe tests will indicate whether indeed the dust has been cleaned. If the Airport Authority has any personnel that are respiratory qualified; Ramsey-Schilling can give on-site instruction for them to safely remove the lead dust.

Once the existing dust is removed; the existing lead-based paint must be managed to prevent site from becoming contaminated again. Ramsey-Schilling can provide a management plan for the maintenance of the paint.

The walls of the facility did not contain lead in paint above the HUD action levels of 1.0 mg/cm^2 (XRF) or the 0.5% weight (laboratory). Therefore they are not a major potential source for lead exposure.

However, the items such as the piping doors, pump stand, fill cap, window sill and sash, pumps, door frame were positive (see schedule XRF measurements). This paint should be repaired wherever it is damaged and should be monitored on a periodic schedule to assure that any new damage is repaired. The repair work can be completed by the same lead abatement contractor while he is on site.

The soil lead is below the current EPA action level and requires no remediation or abatement.

Last, as a general recommendation, Ramsey-Schilling's experience on other military installations and similar facilities indicates that the lead hazard problems noted in this report are likely to be in other buildings and/or areas of this former military installation.

An environmental assessment and testing program is recommended if the other buildings and site areas of the Salina Airport Authority have not been environmentally tested and assessed for lead and/or other environmental hazards such as asbestos, PCB's, radon, indoor air quality and petroleum and/or aviation fuel related contaminates.

Following the recommendations of Ramsey-Schilling, SAA proceeded with performing lead abatement in the pump house. The lead abatement project is discussed in Section 7.1.

6.0 PRESENTATION TO SALINA AIRPORT AUTHORITY BOARD

Mr. John Bednarczyk of BWR presented the status of the environmental compliance audit and limited environmental investigation on Pump House No. 305 to the Salina Airport Authority Board on May 18, 1994. The Board members at the meeting concurred with the presented recommendation to accept ownership of Pump House No. 305 and the associated UST's from the USACE-Kansas City District. Following the meeting, Tim Rogers called Judy Meiers indicating SAA acceptance.

The Board meeting agenda is included in Appendix E. The agenda identified the recommended activities and associated costs necessary for assuming ownership of the UST's. The following three remedial activities were recommended for completion in a timely manner.

- Perform lead abatement in the pump house.
- Repair the leaking vent line for UST No. 6.
- Replace the cathodic protection to the UST's.

The lead abatement work had been recommended prior to the meeting and was underway at the time of the meeting. It was also recommended that a rehabilitation project be performed to bring the UST's into compliance with future KDHE UST regulations and to perform some needed maintenance to the pump house structure. The recommended rehabilitation project is to follow a traditional design-bid-construct schedule, with the design portion performed by an architect/engineer firm. The finalized elements of the recommended project are:

- Construct spill containment pads and associated piping modifications.
- Provide oil\water separator for environmental pad.
- Collect surface water in UST manway sumps as necessary.
- Provide static grounds at environmental pad.
- Provide construction management for cathodic protection turnkey contractor.
- Provide compliance with FAA, NFPA, and ATA standards as necessary.
- Submit UST modification permit to KDHE.
- Register the 2,000-gallon overflow UST with KDHE.

In addition to the elements included in the architect\engineer Scope of Services, SAA will directly contract with vendors for the following services.

- Isolate the Pump House No. 305 from the hydrant fueling and defueling system.
- Repair or replace the pump house roof.
- Perform tightness testing on the 2,000 gallon overflow UST.

- Add the 2,000 gallon overflow UST to the existing inventory control system.
- Add exterior lighting.
- Add level probes for the remaining eight UST's.
- Repair or replace the vent for UST No. 6.
- Install UST overflow alarm to existing inventory control system.
- Disconnect 12-inch hydrant fuel lines and 8-inch supply line.
- Disconnect 6-inch de-fuel lines.
- Paint interior and exterior walls and seal the floor.
- Tank and filter vessel cleaning.

7.0 REMEDIAL PROJECTS

Three remedial activities identified from the limited environmental investigation and environmental compliance audit are:

- Perform lead abatement in the pump house.
- Repair the leaking vent line for UST No. 6.
- Replace the cathodic protection to the UST's.

The status of these remedial activities is presented below.

7.1 LEAD ABATEMENT

Following the recommendations of the lead-based paint survey, SAA directed to BWR proceed with procuring a lead abatement contractor to remove the lead dust and encapsulate the lead-containing painted surfaces. Because of the exposure potential to workers and the need for continuous use of the facility, SAA requested that the abatement be performed as quickly as possible. SAA contracted with Remediation Contractors, Inc. of 900 E. Indianapolis, Wichita, Kansas 67211-2407 (316/269-1549) for the abatement work and with Ramsey-Schilling for the environmental monitoring and clearance sampling.

The work was begun on May 19, 1994 and consisted of vacuuming the interior building surfaces with a high efficiency particulate air (HEPA) filtered vacuum and wiping the surfaces with Ledizolv, a solvent for lead dust. The lead-containing painted surfaces were coated with Safe-T-Shield, a coating system used to encapsulate lead-based paint. Ramsey-Schilling provided on-site professional services including lead air quality sampling, contractor observation, and lead clearance wipe sampling analysis.

The initial work was completed on May 23, 1994 but the clearance wipe sample result was in excess of the 200 micrograms/ft^2 and the contractor returned to the site on May 27, 1994 to re-clean the interior surfaces. The second clearance wipe sample was taken on May 30, 1994 and it passed the clearance criteria. A summary report on the abatement work was provided by Ramsey-Schilling and is included in Appendix F.

7.2 VENT LINE REPAIR

The repair of the vent line for UST No. 6 will be completed by DNS Petroleum under contract to SAA, with SAA also providing construction management.

7.3 CATHODIC PROTECTION REPLACEMENT

KDHE regulations require that UST's have corrosion protection by December 23, 1998 and this protection can be either an internal corrosion resistant lining or an external impressed current cathodic protection system. In conversations with Juan Sexton of KDHE, it appears that they are formalizing their 1998 policy to require that cathodic protection systems be designed by a National Association of Corrosion Engineers (NACE) corrosion specialist. For this reason, the corrosion protection designer will be required to have NACE certification.

At the recommendation of BWR, SAA is pursuing the replacement of the cathodic protection system for all 12-UST's that was recently removed. BWR has requested proposals for the design and replacement (turnkey project) of the cathodic protection system from the following contractors:

Christensen Corrosion Consulting
6901 North Liberty Street
Kansas City, Missouri 64118
(816) 436-8560

Visual Inspections, Inc.
P.O. Box 596
Independence, Kansas 67301
(800) 352-2496

Tanknology Corporation International
5225 Hollister Street
Houston, Texas 77040-6294
(800) 888-8563

The contractor's proposals are included in Appendix G. The proposal, received June 3, 1994, from Christensen is summarized as follows:

- Lump sum cost to design and install cathodic protection is $12,807.

- Lead time for rectifier is four weeks.
- Design conforms to the NACE and American Society of Testing of Materials (ASTM) standards.
- Design based on field obtained soil resistivities and on-site visit to observe general conditions and includes parameters of 2.0 milliamps/ft^2 of tank surface area and a design life of 20 years.
- Interference provisions for a nearby natural gas pipeline and water line is included.
- KDHE license not mentioned in proposal.
- Layout drawings, bills of materials, installation specifications, operating manual, final report and certification included.
- System includes new anodes, wiring, rectifier, and ground cables.
- System includes test portals in pump house concrete floor.

The proposal, received May 27, 1994, from Visual Inspections is summarized as follows:

- Lump sum cost to design and install cathodic protection is $7,880.
- Lead time for rectifier is 6 to 8 weeks. Earliest available installation dates for Visual Inspections is September, then not until early 1995, and they require 10 to 12 weeks notice for scheduling.
- No design information or conformance to standards provided in proposal.
- System includes new anodes, wiring, rectifiers, and ground cables.
- Includes a post-installation survey to ascertain correct operation of the system and make a joint interference test with the nearby natural gas line.
- 50 years of corrosion experience and members of the NACE.
- No mention of operator's manual, layout drawings, or installation certification.
- No mention of test portals in pump house floor.
- No mention of design and installation to be supervised by a NACE corrosion specialist.

The proposal, received June 9, 1994, from Tanknology Corporation International is summarized as follows:

- Lump sum cost to design and install cathodic protection is $26,440.
- Lead time for the major equipment items and installation schedule is not provided.
- The design includes control units, electrodes, test stations, new anode wire, and existing tank wiring.
- Includes a post-installation test of the completed installation.

- Layout drawings, and operations and maintenance manual provided.
- Technical services to be supervised by a NACE corrosion specialist.
- Design conforms to NACE, API, STI, NFPA, and ASTM.

The vendor submittals for corrosion protection were reviewed for price, NACE certification, delivery, and technical content. Following discussions with Tim Rogers, John Bednarczyk authorized Christensen Corrosion Consultants to immediately proceed with the design indicated in their proposal.

8.0 REHABILITATION PROJECT

On May 31, 1994, Salina Airport Authority requested a proposal to provide design, bidding, and engineering services during construction for the rehabilitation of Pump House No. 305. The request for proposal is included in Appendix H. The requested elements of the rehabilitation project are.

- Tanks to be placed or to remain in service are No. 1, 2, 3, 10, 11, and 12.
- Two environmental pads for transport unloading and refueling loading including grounding.
- Piping modifications for unloading and re-fueler loading including hose racks and meters.
- Sump system for the manway for 12 UST's.
- Oil/water separator to serve pump house and environmental pads.
- Construction management for cathodic protection turnkey contractor.
- Submit UST modification permit to KDHE.
- If separately identified, provide modifications required for FAA, NFPA, and ATA standards.

Bucher, Willis & Ratliff will separately submit a cost proposal by June 14, 1994.

9.0 SUMMARY

The findings of the environmental compliance audit and limited environmental investigation do not indicate any deleterious environmental conditions that would cause the acquisition of Pump House No. 305 to be less cost effective than constructing new AST storage. The environmental conditions that were identified as a concern are manageable and will be addressed by the planned remedial activities and rehabilitation project. The UST's will be in compliance with current KDHE regulations (including those standards that become effective in 1998) once the remedial activities and the rehabilitation project are complete.

APPENDIX A
UST ENVIRONMENTAL COMPLIANCE ASSESSMENT

SALINA AIRPORT AUTHORITY

Environmental Compliance Audit
Underground Storage Tanks
Pump House No. 305

April, 1994

1.0 INTRODUCTION

The Salina Airport Authority (SAA) contracted with Bucher, Willis & Ratliff (BWR) to perform an environmental compliance audit of the twelve 25,000 gallon underground storage tanks (UST's) located at Pump House No. 305 at the Salina Municipal Airport. The two Fixed Base Operators (FBO's) at the Salina Municipal Airport require storage of jet fuel and a smaller quantity of aviation gasoline. Together, they currently pump about 2.2 million gallons of fuel on an annual basis, using two of the twelve UST's for the necessary fuel storage capacity. Fuel quantities are projected to continue increasing, and there is a possible requirement for fuel storage for potential military operations.

Current airport usage projections indicate that future civilian fuel consumption will increase over the next ten to 20 years and require the storage capacity of five of the UST's, and potential military operations could potentially require all twelve of the UST's. The basis of the study considers the cost for environmental compliance for two of the UST's on a short term basis, five UST's over the next 10 to 20 years to accommodate anticipated future growth in the civilian operations, and twelve UST's for the potential military operations.

The schedule for providing UST capacity is accelerated because Pump House No. 305, along with seven other pump houses at the airport, is scheduled for demolition by the U.S. Army Corps of Engineers (USACE) Kansas City District under the Department of Defense Formerly Used Defense Site (FUDS) Program. The FUDS Program was first enacted in 1984, and requires the Department of Defense to review the environmental condition of formerly used sites in an effort to determine if deleterious conditions were caused by the past operations, and perform the necessary environmental remediation.

Under the FUDS Program, the SAA has been given the option of assuming ownership of Pump House No. 305 and the UST's, and allowing USACE to demolish and remediate the remaining seven pump houses along with the hydrant fueling and defueling system. The purpose of the audit is to determine the regulatory constraints and their costs, to enable the SAA to determine the most economical means of providing for the current and projected fuel storage capacity.

2.0 SITE HISTORY

The construction of the military facilities at the Salina Municipal Airport was started in 1941, and the Smoky Hill U.S. Army Airfield was commissioned in 1942. The airfield was operated as an Army training facility until it was closed in 1946. The facilities underwent major reconstruction, and they were re-activated as a U.S. Air Force Strategic Air Command (SAC) facility which operated from 1952 through 1954. In 1957, the facility name was changed to Schilling Air Force Base, and it operated as such until it closed in 1965. From July 1966 through the present, the airport was operated as the Salina Municipal Airport.

Pump House 305 was constructed as part of the SAC expansion in about 1952. USACE-Kansas City District is currently reviewing the 95% submittal for the removal of the first of eight pump houses, Pump House No. 3, as part of the remediation under FUDS. It is anticipated that review and contracting will be completed in about two months, and the closing of the hydrant fueling and defueling pipelines, and first pump house will begin at that time. SAA has been given the option of retaining Pump House No. 305 to support its current and future fuel storage requirements, with the understanding that the costs associated with both current and future environmental compliance will be paid for by SAA. SAA had correctly foreseen the impact of the FUDS Program impact on their fuel storage capability, and had developed plans for installing a new aboveground storage tank (AST) system. Recent funding constraints, however, make that a less desirable option, and assuming ownership of Pump House No. 305 may have a net cost advantage after environmental compliance costs are included.

3.0 METHODOLOGY

The initial site visit took place on March 31, 1994 at the Salina Airport, 3237 Arnold Road, Salina, KS 67401. John Bednarczyk, P.E., Director of Hazardous Waste Services for BWR was escorted by Tim Rogers, Salina Airport Director, and Don Kneubuhl, Salina Airport Operations Director. A visual non-intrusive site survey was performed, and a cursory review of the environmental condition was noted. The condition of Pump House No. 305 and the fuel storage equipment and appurtenances were reviewed in accordance with the requirements of the KDHE UST requirements.

SAA provided original design drawings which dated back to the 1952 installation as a basis for determining subsequent modifications. SAA provided proposal for the two scenarios described in Section 6.0. SAA also provided samples of monthly UST compliance tests, and KDHE correspondence regarding permits and UST upgrade/modification plans. These were discussed and reviewed, and no violations or deleterious conditions were noted. Photographs were taken and selected copies are included in Appendix A.

Beginning on April 4, 1994, John Bednarczyk began calling contractors from the KDHE list of licensed UST contractors in an effort to develop budgetary cost information required for pending compliance requirements. The contractors providing information include the following.

Ray's Petroleum Equipment, Inc.
1355 South Young
Wichita, KS 67209
(316) 942-4268

P.B. Hoidale Co.
3737 West Harry
Wichita, KS 67277
(316) 942-1361

AES-Mid America, Inc.
82 North James
Kansas City, KS 66118
(913) 342-1554

EnviroQuest Technologies
4501 Madison Avenue, Suite 200
Kansas City, MO 64111
(816) 756-0774

Argus Consulting, Inc.
601 Jefferson, Suite 4
Blue Springs, MO 64014
(816) 228-7500

Christensen Corrosion Consulting
6901 North Liberty Street
Kansas City, MO 64118
(816) 436-8560

On April 4, 1994, John Bednarczyk called Juan Sexton, Environmental Geologist of the KDHE Storage Tank Section to determine current permit status of the UST's at Pump House No. 305, and to discuss pending KDHE compliance requirements. KDHE may be contacted as follows:

State of Kansas
Department of Health and Environment
Forbes Field, Building 740
Topeka, KS 66620-0001
(913) 296-1685

On April 7, 1994, John Bednarczyk called Lee Furst, Program Manager of the U.S. Army Corps of Engineers, Kansas City District to discuss the FUDS schedule. USACE-K.C. District may be contacted as follows:

U.S. Army Corps of Engineers, Kansas City District
Toxic & Hazardous Waste Management Branch
601 East 12th Street
Kansas City, MO 64106-2896
(816) 426-3896

The scope of the Pump House No. 305 UST environmental compliance audit was limited to the KDHE UST constraints necessary to provide comparative costs. It does not include those items which may be applicable to other items which may be necessary for rehabilitation of Pump House No. 305, such as the condition of the roof, or the necessary interior modifications. Since the purpose of the audit is to provide a cost comparison, it was not deemed necessary to include those costs that may be common to the UST or AST options. Once a decision for providing fuel storage capacity is determined on the basis of relative costs, the following regulations should be included in the design of the facilities.

Air Transportation Association (ATA) Standard 103
National Fire Protection Association (NFPA) Articles 30 and 407
Federal Aviation Administration (FAA) Advisory Circular No. 150/5230-4

4.0 FACILITY DESCRIPTION

Pump House No. 305 is a rectangular structure located east of the airport apron at Fifth Street, with the major dimension oriented in an east-west direction. Photographs are provided in Appendix A, and a section drawing is included in Appendix B. The building dimensions are 98.5 by 30.0 feet. It is constructed of concrete masonry blocks with a flat roof and slab foundation. The roof is a built-up construction with insulation, and contains exhaust fan vents, and 12 scuttles for removal of the vertical turbine pumps.

The interior space is divided into two sections which are separated by a masonry block wall. The largest portion contains the pumps, filters, fuel metering, and valves and headers for both fueling and defueling. The electrical equipment for power, lighting, heating and conduit all appeared to be explosion-proof. The smaller building portion contains the electrical power and control equipment, including the Veeder-Root automatic tank gauging and cathodic protection units. The interior spaces are separated, and there is no internal door.

The UST's are cylindrical and they are constructed of 3/8-inch steel shell and headers, and measure 39.0 feet long by 8.5 feet in diameter. They are arranged perpendicularly to the building alignment in two rows of six, and extend under the building for approximately one-third of their length, with the remainder extending outside the building. Fueling and defueling headers, valves and filler hose racks are located externally on the north and south sides of the building.

5.0 KDHE REQUIREMENTS

This section considers the KDHE UST requirements and their impact on the UST's at Pump House No. 305.

5.1 OVERVIEW

The U.S. Environmental Protection Agency (USEPA) enacted the Oil Pollution Act in 1988 under Title 40, Code of Federal Regulations, Part 280 (40 CFR 280). The purpose of the legislation was to prevent petroleum and petroleum products from leaking into the environment. This Federal legislation empowered the states to develop and implement statewide programs to permit and mitigate UST's in their jurisdictions. On October 12, 1992, Kansas promulgated their Underground Storage Tank Statutes and Regulations under Article 44 of the Kansas Administrative Regulations. On June 28, 1993, Kansas issued their Corrective Action Policy which prescribes the requirements necessary to mitigate a leaking UST.

The Kansas UST program is implemented by the Kansas Department of Health and Environment (KDHE) which is headquartered at Forbes Field in Topeka, Kansas. In general, the program requires UST owners or operators to register their tanks, to pay a fee, and to obtain a permit to operate the UST's. The following is a discussion of the specific requirements for each of these areas.

5.2 REGISTRATION AND FEE

During the initial site visit, it was noted that the KDHE UST permit was prominently displayed at Pump House No. 305. A copy of the KDHE UST registration file was requested, and is included in Appendix C. Ten of the 25,000 gallon UST's are registered to SAA, with Don Kneubuhl listed as the contact person. The remaining two 25,000 gallon UST's are registered to Midway Aviation, with Jerry Moore listed as the contact person. A fee of $120.00 has been paid to permit the UST's through 1994.

5.3 OPERATING PERMIT

The KDHE UST regulations apply to UST's containing petroleum that have a capacity of greater than 660 gallons. The regulations specifically require the following:

* Release Detection
* Inventory Control
* Corrosion Protection
* Spill and Overfill Protection
* UST Closure
* Reporting of UST System Releases
* Financial Responsibility Requirements

5.4 RELEASE DETECTION

The KDHE allows for a number of release detection methods that are appropriate to certain UST construction, site characteristics, and usage conditions, and each is subject to KDHE approval.

The release detection method employed for the Pump House No. 305 UST's is an automatic tank gauging system. KDHE requires that this method be capable of detecting a release of 0.2 gallons per hour, and must also provide inventory control. Discussion with Juan Sexton of KDHE on April 4, 1994 indicated that KDHE had approved the automatic tank gauging system which had been detailed with the UST permit applications.

Pump House No. 305 is equipped with a Veeder-Root model TLS-250 automatic tank gauging system, and it is reported that the system has been in service since 1990. The system provides

release detection and inventory control, and features include water detection, fuel temperature compensation and printed reports.

The leak detection portion of the automatic tank gauging system is exercised on a monthly basis by the FBO, as part of the rental agreement with SAA. The Veeder-Root equipment takes approximately five hours to complete the test for each tank, and provides a report indicating the tank integrity as compared to a maximum allowable leak rate of 0.2 gallons per hour. The FBO files the original report and provides a copy for SAA files.

The Veeder-Root equipment is currently installed on the two UST's that are used to dispense fuel. The controller has a total of eight points, leaving spare points to monitor six additional UST's. There is also a second Veeder-Root controller available which is ready for installation at Pump House No. 305, that will provide for a total of 16 available monitoring points.

The controller points are hard-wired to sensor probes which are installed in each tank. Currently, there is a sensor probe installed in each of the two UST's that is used to dispense fuel. Two sensor probes have been removed from UST's scheduled for closure under the FUDS Program, and are scheduled for installation in UST's at Pump House No. 305 in about one week. One additional sensor probe will be removed from another UST designated for closure, and will be installed for use at Pump House No. 305 in about two weeks.

In summary, the automatic tank gauging system has been approved for use by KDHE. It is suitable for both release detection and inventory control. Following currently scheduled modifications, Pump House No. 305 controller units will have capability for monitoring up to 16 UST's, and the necessary sensor probes to monitor five UST's.

5.5 INVENTORY CONTROL

KDHE requires that daily inventory control be performed on all tanks which store or dispense fuel. If fuel is not being dispensed on a regular basis, inventory reconciliation must be performed at least once per month.

The inventory control portion of the Veeder-Root automatic tank gauging system is reported to be accurate by the Fixed Base Operator, to the extent that it is used to verify the accuracy of bulk fuel deliveries of up to 5,000 gallons each. Interviews with SAA personnel on March 31, 1994 did not indicate the procedures followed or the frequency of calibration of the Veeder-Root equipment, but it was noted that there has not been a need to reconcile irregularities in delivered, dispensed and remaining fuel volumes. Discussion with KDHE on April 4, 1994 indicated that there have been no fuel shortages reported to them.

As with the release detection system, the inventory control equipment has been approved for use by KDHE. Currently scheduled modifications will provide controllers for up to 16 UST's, and sensor probes for up to five UST's.

5.6 CORROSION PROTECTION

KDHE will require that corrosion protection be provided for all metallic UST's and their product lines by December 23, 1998. To satisfy this criteria, KDHE currently allows either an external cathodic protection system, or an internal corrosion-resistant lining system. For either method, the system design must be submitted to KDHE for approval. Considering the age of the UST's at Pump House No. 305, the following would be required for each of these methods.

CATHODIC PROTECTION

* Internal Inspection
* Tightness Test
* Cathodic Protection Installation
* Tightness Test in Six Months
* Monthly Monitoring

INTERNAL LINING

* Internal Lining Installation
* Internal Inspection in 10 Years
* Internal Inspections every 5 Yrs

The UST's and product piping at Pump House No. 305 are currently cathodically protected by an impressed current system which has been operating since its installation in approximately 1961. The rectifier operates at 30 volts d.c., at approximately 15 amps, with a remote anode buried to the west. Discussion with Juan Sexton of KDHE on April 4, 1994 indicates that they are aware of the installed corrosion protection system, as reported to them with permitting documents, and they consider it to be approved for its use. Further, KDHE recommended that the system be maintained regularly, and monthly operating records be kept to assure that the system is turned-on and functioning properly.

Although interviews with SAA personnel indicate that the system is serviceable, it is reported that the magnitude of impressed current has been slowly dropping over the years. The SAA personnel suspect that the conductor, connections or anode may be beginning to deteriorate, and preliminary plans for replacement are being considered.

It has recently been determined that the transformer\rectifier assembly dielectric fluid is marginally contaminated with polychlorinated biphenyl. Under a separate project, plans have been developed for removal and disposal of the PCB fluids and PCB Items in accordance with Title 40, Code of Federal Regulations, Part 761.

If cathodic protection is the selected method for the December 23, 1998 corrosion protection requirements, replacement of the transformer/rectifier assembly, and possibly the conductor and anodes will be required. Although the steel UST's were reportedly coated with a bitumen

material when installed, that coating has probably developed multiple holidays over the years. A prudent cathodic protection design would be to size the necessary equipment for capacities necessary for a bare steel UST. The design would require a rectifier sized to provide about five amps per UST, and new buried anodes at each end of each UST.

5.7 SPILL AND OVERFILL PROTECTION

KDHE will require the installation of spill and overfill prevention equipment by December 23, 1998 for all UST's that receive more than 25 gallons of fuel at one time. Approved options for spill protection include spill containment buckets, and an environmental pad constructed of materials that are impervious to fuels, and suitable to prevent releases caused by the spillage from the fuel transporter hose.

5.8 UNDERGROUND STORAGE TANK CLOSURE

This section gives consideration to the possibility of closure in the event that SAA decides to assume ownership of the UST's, and needs to close them at some time in the future.

The Kansas statutes require the involvement of KDHE for all permanent UST closures, including both removal and in-place abandonment. A 30-day notification must be provided to KDHE and accompanied by closure plans of a licensed Kansas contractor. An Environmental Assessment by a qualified professional must be completed prior to closure, and submitted to KDHE for their approval. During the closure process, KDHE requires that soil and groundwater samples be taken in a prescribed manner, and sent to a KDHE certified laboratory for analysis. KDHE may also require TPH vapor screening for excavated materials. The contaminants of concern for soil and groundwater are Total Petroleum Hydrocarbon (TPH) and Benzene.

5.9 REPORTING OF RELEASES

Many other state jurisdictions define a minimum reportable quantity for fuel releases. KDHE is of the opinion that it is very difficult to accurately estimate the quantity of an underground release, and it is required that all releases from a UST system and the associated piping be reported to KDHE immediately after discovery. Aboveground releases which may occur at Salina Municipal Airport during a FBO fueling or defueling operation must be reported if water or soil pollution is caused or threatened. Applicable fuel releases should be reported to Tom Winn at the KDHE Bureau of Environmental Remediation, Forbes Field, Topeka, at telephone number (913) 296-1684, or the North Central District Office in Salina at (913) 827-9639.

5.10 INSURANCE REQUIREMENTS

Currently, KDHE requires that all owners of UST's meet certain financial requirements necessary to indicate their ability to pay for remediation in the event of a release. In accordance with

applicable Kansas regulations, the tank registration includes access to the pollution liability coverage of the Kansas Petroleum Storage Tank Release Trust Fund in the event of a fuel release. In general, this coverage includes a maximum site liability per release, of $1,000,000, less deductibles. The deductibles for each release include $3,000 per release, plus $500 for each aboveground and underground storage tank at the site.

The Trust Fund does not include third party bodily injury or property damage. However, discussions with the SAA indicate that their insurance carrier has been approached regarding third party liability coverage in the event that SAA assumes ownership of the UST's in Pump House No. 305.

6.0 SCENARIOS CONSIDERED

This section describes two possible scenarios for providing some of the required fuel storage capacity which had been previously considered by SAA.

6.1 REPLACEMENT WITH AST'S

SAA had considered allowing USACE-Kansas City District to remove the UST's under the FUDS Program, and had developed plans for installing a new aboveground storage tank (AST) system. As previously noted, funding constraints now make that a less desirable option.

These tentative plans included two packaged 12,000 gallon AST units for each of two FBO's with environmental containment pad and collection system, fire protection system, and automatic tank gauging system. On February 4, 1993, KDHE approved the submitted plans, and forwarded them to the State Fire Marshall's office for further review.

6.2 UPGRADE/MODIFY UST'S

SAA had considered upgrading of all 12 UST's in Pump House No. 305, and developed plans accordingly. These included tightness testing of the UST's followed by the installation of an internal liner, additional automatic tank gauge sensor probes, environmental containment pad and collection system, and isolation of the UST system from the fueling and defueling systems.

These plans were submitted to KDHE and approved on February 4, 1993. KDHE then submitted them to the State Fire Marshall's office for further review.

7.0 COST ESTIMATES

This section summarizes the estimated construction costs described in this report which address the options available to SAA for environmentally compliant solutions to their fuel storage requirements. Each total estimated cost is shown along with the approximate cost per gallon of storage capacity which may be used for comparison purposes.

ITEM	COST	COST PER GALLON
Replacement with 4-12,000 gallon AST's as described in Section 6.1	$333,140	$6.94
Upgrade/Modify 12-25,000 gallon UST's as described in Section 6.2 Base Bid 6 flow meters Fiberglass lining Cathodic protection Total	 45,051 20,872 198,866 17,000 289,789	 $0.97
The following incremental estimated costs are provided for comparative purposes by the contractors previously noted.		
Release detection and inventory control using the existing Veeder-Root system on the existing tanks. For 2-25,000 gallon USTs For 5-25,000 gallon USTs For 12-25,000 gallon USTs add 7 sensor probes	 0 0 7,000	 0.00 0.00 0.04
Annual Tightness Test, approximate cost per UST	750	
Soil vapor monitoring, approximate cost per UST	1,500	
Groundwater monitoring, approximate cost per UST	8,800	
Statistical inventory reconciliation, approximate annual cost per UST	325	
Complete cathodic protection for existing USTs For 2-25,000 gallon USTs For 5-25,000 gallon USTs For 12-25,000 gallon USTS	 12,000 12,000 17,000	 0.24 0.10 0.06
Spill and overfill protection for existing USTs approximate cost per UST Auto shut-off, or Operator alert	 1,400 1,500	 0.06 0.06
Environmental Pad and oil/water separator, approximate cost for 12 existing USTs	17,934	0.06
UST closure, approximate cost per UST Removal Abandon in place	 10,500 8,500	

8.0 RECOMMENDATIONS

The 12 existing 25,000 gallon UST's have been in operation since about 1952, and they have been cathodically protected since about 1961. They are registered with KDHE, and they currently satisfy all required KDHE environmental requirements. There have been no releases reported to KDHE, and the preliminary site visit did not indicate any evidence of a release. There appears to be no evidence supporting an imminent failure of the existing UST's.

A proposal to install two packaged 12,000 gallon AST units has been submitted. The approximate construction cost of $6.94 per gallon of storage capacity is high as compared to the cost to upgrade the 12 existing 25,000 gallon UST's. Further, the AST option will not provide sufficient fuel storage capacity for the anticipated growth in civilian operations, and will not support a potential military operation.

It is recommended that the integrity of the UST's be verified by an internal inspection, followed by a tightness test. If each UST passes the KDHE guidelines, it is recommended that the UST be retained for service by SAA, and notification given to USACE to isolate the fueling and defueling pipelines. For each retained UST, it is recommended that a replacement cathodic protection system be installed immediately. Although spill and overfill protection is not required until 1998, it is recommended that these modifications, including an environmental pad, collection system and oil/water separator, take place as the tanks are retained.

The USACE has allowed SAA 30 days to decide to retain the UST's or allow the USACE to close them under the FUDS Program. Since the USACE will not be responsible for the cost of UST closure after the 30 day period, it is imperative that SAA is reasonably assured that the USTs are not leaking. The recommended sequence for this determination is to perform internal inspection and tightness testing on the empty tanks within the 30-day period. The estimated construction cost for these tests is $1,500 per tank. The results would identify the potential risk, including possible future UST closure, and allow SAA to give their final determination to the USACE. If SAA decides to retain the UST's, subsequent UST modifications would continue at the construction costs indicated.

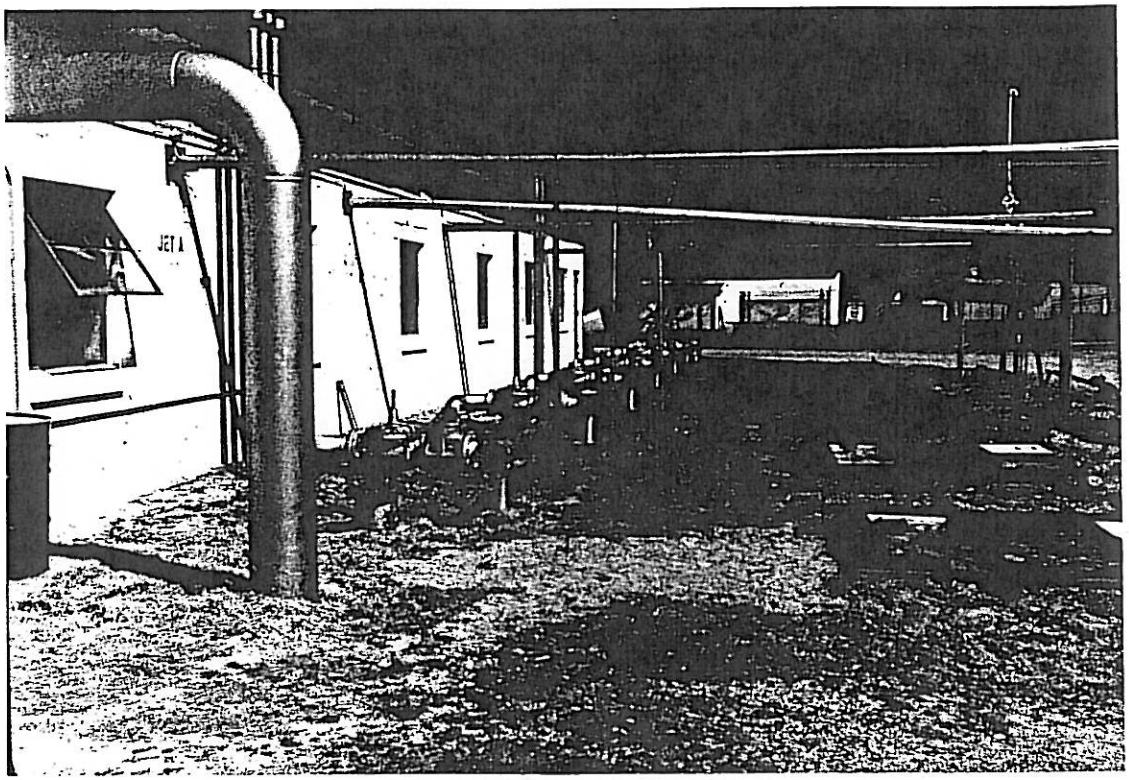
From the cost estimates in Section 7.0, it can be determined that the construction costs for implementing the recommendations noted above, including closure of the non-retained UST's, would be approximately:

UST's Retained	Cost
2-25,000 gallon UST's	$120,734
5-25,000 gallon UST's	$103,934
12-25,000 gallon UST's	$ 69,734

A breakdown of these construction costs is included in Appendix D.

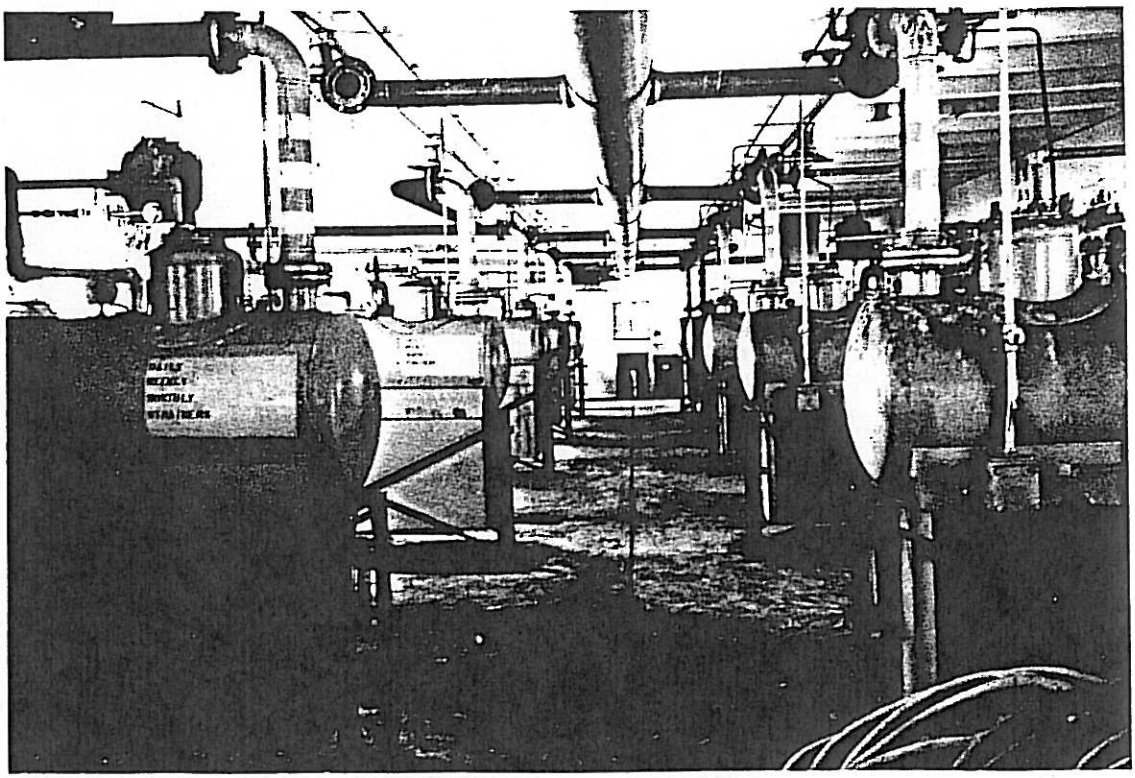
Lastly, it is recommended that SAA contact their insurance carrier to arrange for third party liability insurance if the decision to retain the UST's is concluded.

APPENDIX A



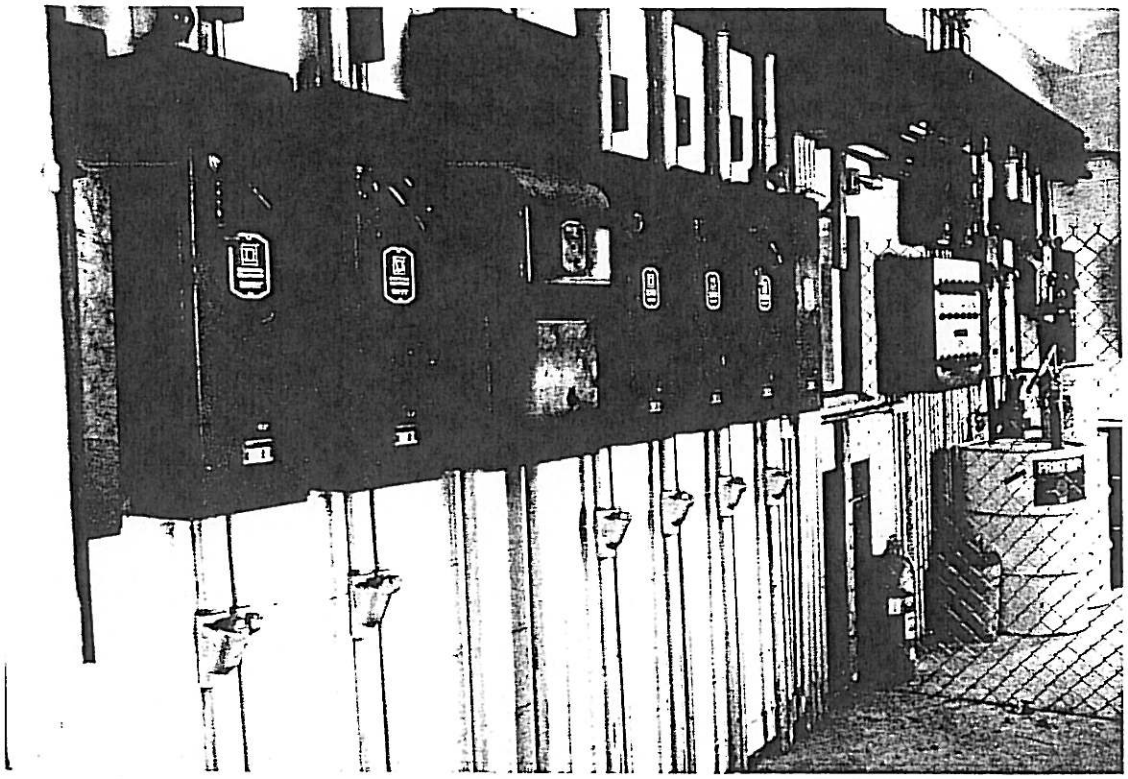
PUMP HOUSE NO. 305

EXTERIOR, SOUTH SIDE, LOOKING EAST



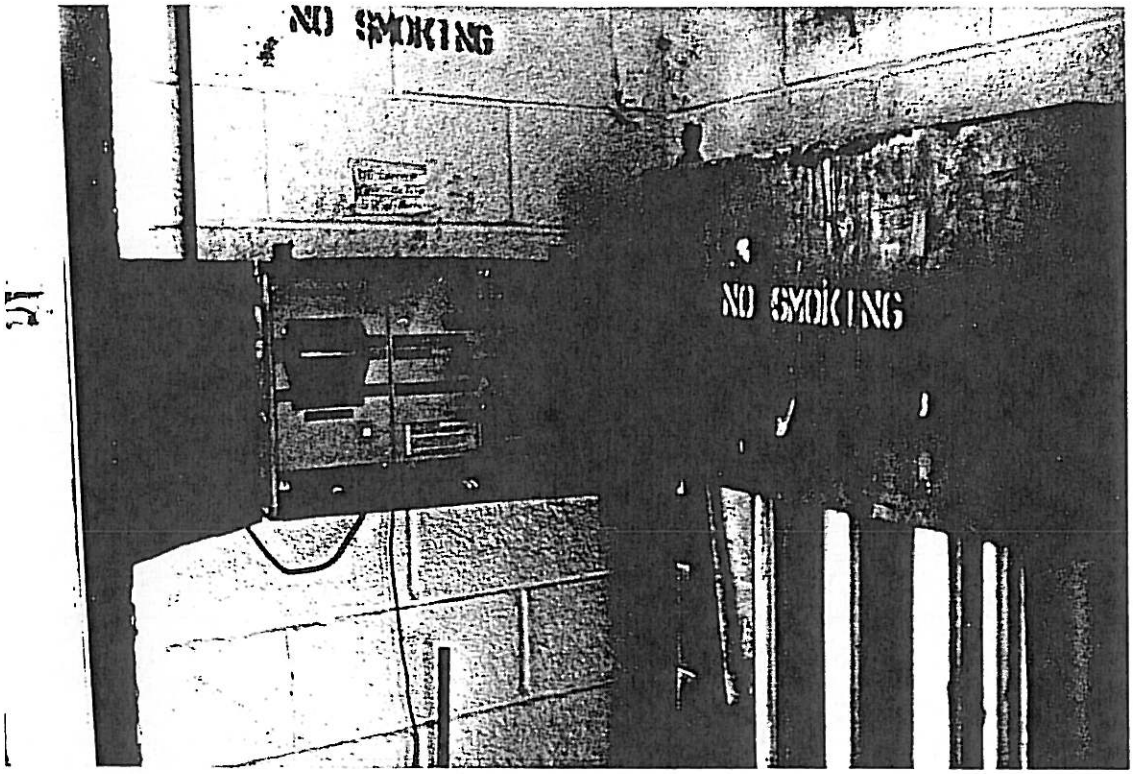
PUMP HOUSE NO. 305

INTERIOR, LOOKING WEST



PUMP HOUSE NO. 305

INTERIOR, ELECTRICAL ROOM, LOOKING S/E



PUMP HOUSE NO. 305

INTERIOR, ELECTRICAL ROOM, VEEDER-ROOT

APPENDIX B

APPENDIX C

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
1994 UST ANNUAL REGISTRATION RETURN FORM AND
THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT SPECIAL UST TIER II FORM

RETAIN FOR YOUR RECORDS

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE) RECORDS INDICATE THAT YOU HAVE 10 ACTIVE TANK(S) REGISTERED AT THE FACILITY LISTED BELOW.

OWNER	FACILITY
OWNER I.D. :27195	FACILITY I.D. :27196 SIC:_____
SALINA AIRPORT AUTHORITY	SALINA AIRPORT AUTH-BLDG 305
3237 ARNOLD AVENUE	SALINA AIRPORT
SALINA KS 67401	SALINA KS 67401

TANK INFORMATION

TANK NUMBER	27196-001	27196-002	27196-003	27196-004	27196-005
STATUS OF TANKS	TEMP. OUT	TEMP. OUT	TEMP. OUT	TEMP. OUT	TEMP. OUT
YEAR INSTALLED	1956	1956	1956	1956	1956
CAPACITY (GALLONS)	25000	25000	25000	25000	25000
AVERAGE DAILY AMT *					
# OF DAYS ON SITE**	365	365	365	365	365
PRODUCT STORED	KEROSENE	KEROSENE	KEROSENE	KEROSENE	KEROSENE
CAS NUMBER	8008-20-6	8008-20-6	8008-20-6	8008-20-6	8008-20-6
PHYSICAL/HEALTH HAZARDS ***	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)
PHYSICAL STATE	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX
TANK REL. DETECT.					
PIPING TYPE	PRESSURE	PRESSURE	PRESSURE	PRESSURE	PRESSURE
SHUTOFF/ALARM/FR					
PIPE REL. DETECT.					
FINANCIAL RESPON.					

TANK NUMBER	27196-006	27196-007	27196-008	27196-009	27196-010
STATUS OF TANKS	TEMP. OUT	TEMP. OUT	TEMP. OUT	TEMP. OUT	TEMP. OUT
YEAR INSTALLED	1956	1956	1956	1956	1956
CAPACITY (GALLONS)	25000	25000	25000	25000	25000
AVERAGE DAILY AMT *					
# OF DAYS ON SITE**	365	365	365	365	365
PRODUCT STORED	KEROSENE	KEROSENE	KEROSENE	KEROSENE	KEROSENE
CAS NUMBER	8008-20-6	8008-20-6	8008-20-6	8008-20-6	8008-20-6
PHYSICAL/HEALTH HAZARDS ***	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)	(F)(C)(A)
PHYSICAL STATE	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX	LIQUID,MIX
TANK REL. DETECT.					
PIPING TYPE	PRESSURE	PRESSURE	PRESSURE	PRESSURE	PRESSURE
SHUTOFF/ALARM/FR					
PIPE REL. DETECT.					
FINANCIAL RESPON.					

* ASSUMED TO BE 1/2 THE TOTAL CAPACITY UNLESS OTHERWISE STATED.
** ASSUME 365 DAYS
*** FIRE (F), CHRONIC (C), ACUTE (A)

--CONTINUED--

OWNER	FACILITY
OWNER I.D. :27195	FACILITY I.D. :27196 SIC:_____
SALINA AIRPORT AUTHORITY	SALINA AIRPORT AUTH-BLDG 305
3237 ARNOLD AVENUE	SALINA AIRPORT
SALINA KS 67401	SALINA KS 67401

TANK INFORMATION

IF ANY OF THE ABOVE INFORMATION IS NOT CORRECT, SUCH AS THE OWNER'S MAILING ADDRESS, PROVIDE A WRITTEN DESCRIPTION OF ANY NEEDED CHANGES ON THE RETURN FORM AND SUBMIT IT WITH YOUR PAYMENT. IF AN INCORRECT MAILING ADDRESS IS LISTED AND CORRECTIONS ARE NOT MADE, YOUR UST PERMIT MAY BE DELAYED.

RETAIN THIS FORM FOR YOUR RECORDS. THE TANK NUMBERS AS ASSIGNED ABOVE MUST BE PROVIDED TO THE DEPARTMENT WITH ANY FUTURE TANK TESTING OR UPGRADES TO EQUIPMENT IN ORDER FOR ACCURATE RECORDS TO BE MAINTAINED FOR EACH TANK.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
1994 UST ANNUAL REGISTRATION RETURN FORM AND
THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT SPECIAL UST TIER II FORM

RETAIN FOR YOUR RECORDS

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT (KDHE) RECORDS INDICATE THAT YOU HAVE __2 ACTIVE TANK(S) REGISTERED AT THE FACILITY LISTED BELOW.

OWNER	FACILITY
OWNER I.D. :27195	FACILITY I.D. :27202 SIC:_____
SALINA AIRPORT AUTHORITY	JERRY MOORE'S MIDWAY AVIA #305
3237 ARNOLD AVENUE	SALINA AIRPORT
SALINA KS 67401	SALINA KS 67401

TANK INFORMATION

TANK NUMBER	27202-001	27202-002			
STATUS OF TANKS	IN USE	IN USE			
YEAR INSTALLED	1956	1956			
CAPACITY (GALLONS)	25000	25000			
AVERAGE DAILY AMT *	12500	12500			
# OF DAYS ON SITE**	365	365			
PRODUCT STORED	100 LL	JET FUEL			
CAS NUMBER					
PHYSICAL/HEALTH HAZARDS ***	(F)(C)(A)	(F)(C)(A)			
PHYSICAL STATE	LIQUID,MIX	LIQUID,MIX			
TANK REL. DETECT.	AG	AG			
PIPING TYPE	PRESSURE	PRESSURE			
SHUTOFF/ALARM/FR					
PIPE REL. DETECT.	OT	OT			
FINANCIAL RESPON.	SI	SI			

* ASSUMED TO BE 1/2 THE TOTAL CAPACITY UNLESS OTHERWISE STATED.
** ASSUME 365 DAYS
*** FIRE (F), CHRONIC (C), ACUTE (A)

IF ANY OF THE ABOVE INFORMATION IS NOT CORRECT, SUCH AS THE OWNER'S MAILING ADDRESS, PROVIDE A WRITTEN DESCRIPTION OF ANY NEEDED CHANGES ON THE RETURN FORM AND SUBMIT IT WITH YOUR PAYMENT. IF AN INCORRECT MAILING ADDRESS IS LISTED AND CORRECTIONS ARE NOT MADE, YOUR UST PERMIT MAY BE DELAYED.

RETAIN THIS FORM FOR YOUR RECORDS. THE TANK NUMBERS AS ASSIGNED ABOVE MUST BE PROVIDED TO THE DEPARTMENT WITH ANY FUTURE TANK TESTING OR UPGRADES TO EQUIPMENT IN ORDER FOR ACCURATE RECORDS TO BE MAINTAINED FOR EACH TANK.

APPENDIX D

SAA PUMP HOUSE NO. 305
CONSTRUCTION COST BREAKDOWN
TO UPGRADE UST'S

2-25,000 GALLON UST'S

Internal Inspection	2 x $750	$1,500
Tightness Test	2 x $750	1,500
Cathodic Protection		12,000
Spill/Overfill (Auto Shut-Off)	2 x $1,400	2,800
Environmental Pad		17,934
Close 10 UST's	10, x $8,500	85,000
		$120,734

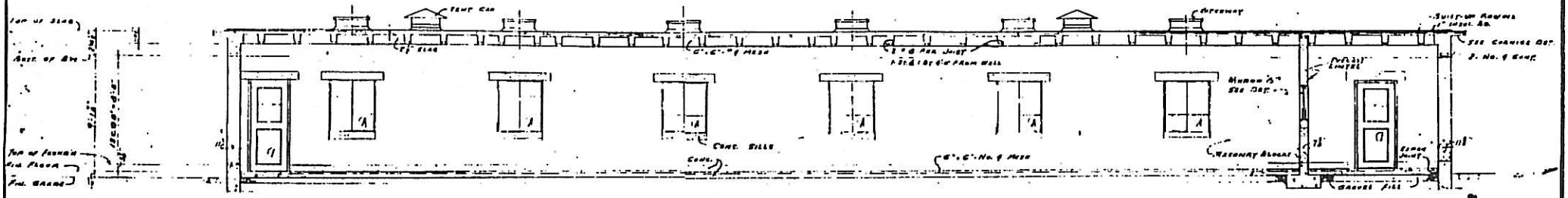
5-25,000 GALLON UST'S

Internal Inspection	5 x $750	$3,750
Tightness Test	5 X $750	3,750
Cathodic Protection		12,000
Spill/Overfill (Auto Shut-Off)	5 x $1,400	7,000
Environmental Pad		17,934
Close 7 UST's	7 x $8,500	59,500
		$103,934

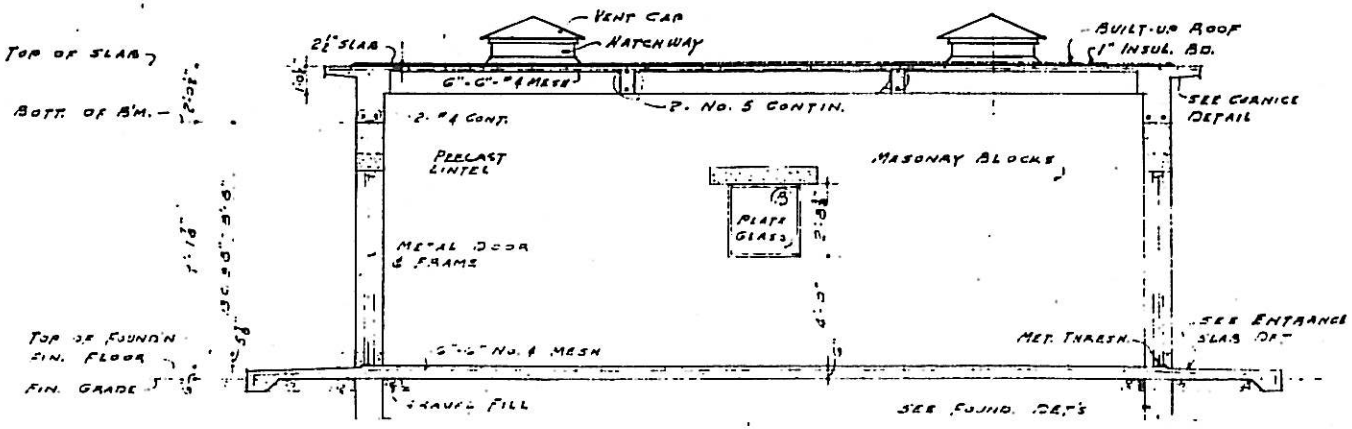
12-25,000 GALLON UST'S

Internal Inspection	12 x $750	$9,000
Tightness Test	12 x $750	9,000
Cathodic Protection		17,000
Spill/Overfill (auto Shut-Off)	12 x $1,400	16,800
Environmental Pad		17,934
		$69,734

APPENDIX B
TRACER TEST REPORTS



SECTION Y-Y



SECTION Z-Z

SYMBOL	DESCRIPTION	DATE	APPROVAL
	Revised Drawing to Show "As Built" Conditions	Dec. 55	

REVISIONS

WILSON — SHAVER — MANN
ARCHITECTS - ENGINEERS SALINA, KAN.
WILSON & COMPANY

CORPS OF ENGINEERS U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.

DRAWN BY W H C
TRACED BY W H C
CHECKED BY G L G
SUBMITTED Harry H. Kimell
APPROVED CHIEF DESIGN BRANCH
APPROVED Louis G. Feil CHIEF ENGINEERING DIVISION
APPROVED L. J. Lincoln COLONEL DISTRICT ENGINEER

SMOKY HILL A F B SALINA KAN

HYDRANT TYPE FUELING SYSTEM
ARCHITECTURAL
FUELING PUMP HOUSE NO. 2
PLANS, ELEV. & SECTIONS

DATE OCTOBER 1951
SCALE AS SHOWN
SPEC NO
DRAWING NUMBER 78-01-01-04
SHEET 4 OF 32

Tracer Research Corporation

PREPARED FOR:

DuPree Testing Services
P.O. Box 364
Ulysses, KS 67880

Tracer Tight® Test
of
10 Underground Storage Tanks
at the
Salina Airport Authority site
3237 Arnold
Salina, KS
May 12, 1994

SUBMITTED BY:

Cindy Stivers
TRACER RESEARCH CORPORATION

JOB # 230354

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INTRODUCTION

DuPree Testing Services and Tracer Research Corporation performed Tracer Tight® leak testing of 10 underground storage tanks at the Salina Airport Authority site in Salina, KS. The tanks were inoculated with tracer on April 22, 1994. Samples were collected on May 6, 1994 with sample vacuums of 2-3 inches Hg. The following table shows the tank size, type of tracer in each tank, and the product through put factor in the first 72 hours after inoculation.

SYSTEM#	SIZE	TRACER	FACTOR
Tank 01	25,000	D	1
Tank 02	25,000	C	1
Tank 03	25,000	F	1
Tank 06	25,000	C	1
Tank 07	25,000	D	1
Tank 08	25,000	F	1
Tank 09	25,000	D	1
Tank 10	25,000	F	1
Tank 11	25,000	D	1
Tank 12	25,000	F	1

The following table shows the type of product in the tank, the product level and the water level in each tank measured in inches at time of inoculation and sampling.

		AT INOCULATION		AT SAMPLING	
SYSTEM#	PRODUCT	H_2O	PRODUCT	H_2O	PRODUCT
Tank 01	Empty	0.00	0.00	0.00	0.00
Tank 02	Jet A	0.00	24.00	0.00	24.00
Tank 03	Empty	0.00	0.00	0.00	0.00
Tank 06	100 Oct. Unl	0.50	35.00	0.50	19.00
Tank 07	Empty	0.00	0.00	0.00	0.00
Tank 08	Empty	0.00	0.00	0.00	0.00
Tank 09	Empty	0.00	0.00	0.00	0.00
Tank 10	Empty	0.00	0.00	0.00	0.00
Tank 11	100 Oct. Unl	0.00	12.00	0.00	18.00
Tank 12	Jet A	0.00	38.00	0.00	34.00

The depth to water in the tank pit was determined to be 5.5 feet below grade.

CONCEPT OF OPERATION AND IMPLEMENTATION

The tracer leak detection method relies upon the addition of a highly volatile liquid chemical to the product in the tank. If a leak occurs in the underground storage system, product is released into the surrounding soil. The tracer escapes from the product by vaporization and disperses into the soil by molecular diffusion. Various means are used to sample the soil vapors in the immediate vicinity of the underground storage tanks and associated piping. Each probe has an effective detection radius of approximately 10 feet. This means that a given probe should detect a leak anywhere within the area described by the 10 foot radius around the probe. The tracer must be placed in the tank at least two weeks prior to the probe sampling for this method to be effective. This process of leak detection by placing a liquid or gas tracer in a liquid product followed by detection of the tracer underground in the vapor phase is protected under *TRACER* patents.

PRODUCT THROUGHPUT FACTOR

The throughput factor is used to determine the amount of tracer chemical used to inoculate a given tank. The throughput factor is a multiplier and is based on the number of tank refills expected within the first three days after inoculation. Tracer is added to the tank in an amount that will insure adequate tracer concentration after receiving all product deliveries scheduled for the first three days after inoculation.

LEAK DETECTION CRITERIA

The classification of leakage is based on the presence or absence of tracer.

PASS	FAIL
Criteria:	Criteria:
NO tracer detected	tracer detected

If requested, total volatile hydrocarbon (TVHC) concentrations are measured to give additional information about site conditions. The TVHC data provide information about the severity of the leakage, and the degree of any possible environmental damage that may have occurred. The TVHC data is not used as a criterion factor to determine the status of a particular tank(s) or piping and is provided as supplemental information only.

CERTIFICATION

Job Number : 230354

Date : May 12, 1994

Location: Salina Airport Authority
3237 Arnold
Salina, KS

SYSTEM#	PRODUCT	SIZE	TRACER	LEAK STATUS *TANK*	*LINE*
Tank 01	Empty	25,000	D	Pass	N/A
Tank 02	Jet A	25,000	C	Pass	N/A
Tank 03	Empty	25,000	F	Pass	N/A
Tank 06	100 Oct. Unl	25,000	C	Pass	N/A
Tank 07	Empty	25,000	D	Pass	N/A
Tank 08	Empty	25,000	F	Pass	N/A
Tank 09	Empty	25,000	D	Pass	N/A
Tank 10	Empty	25,000	F	Pass	N/A
Tank 11	100 Oct. Unl	25,000	D	Pass	N/A
Tank 12	Jet A	25,000	F	Pass	N/A

Tracer Research Corporation certifies that the tanks and product distribution lines listed in the above table have been tested by means of Tracer Tight®, which meets the criteria set forth in NFPA 329 for a precision leak test. According to EPA standard test procedures for evaluating leak detection methods, the Tracer Tight® method is capable of detecting leaks of 0.05 gallons per hour with a Probability of Detection (P_D) of 0.97 and Probability of False Alarm (P_{FA}) of 0.029.

Submitted by: Cindy Stivers

Cindy Stivers
Tracer Research Corporation

Testers State License Number: COO22 KS

The following criteria are used for the classification of leakage based on the presence or absence of tracer.

PASS

Criteria:

No tracer detected

FAIL

Criteria:

tracer detected

APPENDIX A - Results of U.S. EPA Test Evaluation

Results of U.S. EPA Standard Evaluation

Nonvolumetric Tank Tightness Testing Method

This form tells whether the tank tightness testing method described below complies with the performance requirements of the federal underground storage tank regulation. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA "Standard Test Procedure for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection system should keep this form on file to prove compliance with the federal regulations. Tank owners should check with State and local agencies to make sure this form satisfies their requirements.

Method Description

Name: Tracer Tight®

Version:

Vendor: Tracer Research Corporation

(address) 3855 North Business Center Drive

(city) Tucson (state) Arizona (zip) 85705 (phone) 602/888-9400

Evaluation Results

This method, which declares a tank to be leaking when tracer is detected outside the tank at concentrations greater than 3×10^{-5} times the tracer concentration in the tank has an estimated probability of false alarms [P(FA)] of a 0.0 % based on the test results of 0 false alarms out of 22 tests. A 95% confidence interval for P(FA) is from 0 % to 13 %

The corresponding probability of detection [P(D)] of a 0.05 gallon per hour leak is 100 % based on the test results of 45 detections out of 45 simulated leak tests. A 95% confidence interval for P(D) is from 92.4 % to 100 %

The corresponding probability of detection [P(D)] of a 0.1 gallon per hour leak is 100 % based on the test results of 93 detections out of 93 simulated leak tests. A 95% confidence interval for P(D) is from 96.2 % to 100 %

Does this method use additional modes of leak detection? ☒ Yes ☐ No If Yes, complete additional evaluation results on page 3 of this form.

Based on the results above, and on page 3 if applicable, this method ☒ does ☐ does not meet the federal performance standards established by the U.S. Environmental Protection Agency (0.10 gallon per hour at P(D) of 95% and P(FA) of 5%).

Test Conditions During Evaluation

The evaluation testing was conducted outside a 55 -gallon ☒ steel ☐ fiberglass tank that was 22 inches in diameter and 34 inches long, installed in silty clay native soil backfill.

The ground-water level was 0 inches above the bottom of the tank.

Nonvolumetric TTT Method Tracer Tight®
Version

Test Conditions During Evaluation (continued)

The tests were conducted with the tank 38/0.0 percent full.

The temperature difference between product added to fill the tank and product already in the tank ranged from NA °F to NA °F,
with a standard deviation of NA °F.

The product used in the evaluation was regular leaded gasoline

This method may be affected by other sources of interference. List these interferences below and give the ranges of conditions under which the evaluation was done. (Check None if not applicable.)

☒ None

Interferences	Range of Test Conditions

Limitations on the Results

The performance estimates above are only valid when:

- The method has not been substantially changed.
- The vendors instructions for using the method are followed.
- The tank contains a product identified on the method description form.
- The tank capacity is NA gallons or smaller. *NO SIZE LIMITATION*
- The difference between added and in-tank product temperatures is no greater than + or - NA degrees Fahrenheit.

☒ Check if applicable:

Temperature is not a factor because Tracer Tight is an external leak detection method

- The waiting time between the end of filling the test tank and the start of the test data colleciton is at least NA hours.
- The waiting time between the end of "topping off" to final testing level and the start of the test data collection is at least NA hours.
- The total data collection time for the test is at least NA hours.
- The product volume in the tank during testing is NA % full.
- This method ☒ can ☐ cannot be used if the ground-water level is above the bottom of the tank.

Other limitations specified by the vendor or determined during testing:

Soil must be permeable enough to yield at least 0.15 cfm of air through a 3/4" nominal diameter probe under a vacuum of 15" of Hg

Nonvolumetric TTT Method Tracer Tight®
Version

>Safety disclaimer: This test procedure only addresses the issue of the methods ability to detect leaks. It does not test the equipment for safety hazards.

Additional Evaluation Results (if applicable)

This method, which declares a tank to be leaking when water ingress is detected has an estimated probability of false alarms [P(FA)] of N/A % based on the test results of false alarms out of N/A tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(FA) is from 0 % to N/A %.

The corresponding probability of detetection [P(D)] of a N/A gallon per hour leak is N/A % based on the test results of N/A detections out of N/A simulated leak tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(D) is from N/A % to 100 %.

>Water detection mode (if applicable)

Using a false alarm rate of 0% the minimum water level that the water sensor can detect with a 100% probability of detection is 0.008 inches.

Using a false alarm rate of 5% the minimum change in water level that the water sensor can detect with a 95% probability of detection is 0.19 inches.

Based on the minimum water level and change in water level that the water sensor can detect with a false alarm rate of 5% and a 95% probability of detection, the minimum time for the system to detect an increase in water level at an incursion rate of 0.10 gallon per hour is 1836 minutes in a 75,000 - gallon tank.

Certification of Results

I certify that the nonvolumetric tank tightness testing method was installed and operated according the the vendors instructions. I also certify that the evaluation was performed according to the standard EPA test procedure for nonvolumetric tank tightness testing methods and that the results presented above are those obtained during the evaluation.

Curtis W. Bryant
(printed name)

Curtis W. Bryant
(signature)

May 20, 1992
(date)

Control Strategies Engineering
(organization performing evaluation)

12550 West Manville Road
Tucson, Arizona 85743
(city, state, zip)

(602) 682-8725
(phone number)

APPENDIX B - ANALYTICAL DATA

Tracer Research Corporation

DuPree/Salina Airport Authority
3237 Arnold, Salina, KS

230354

5/11/94 CONDENSED DATA

Location	Compound	Concentration
001-5	C	0.0000
001-5	D	0.0000
001-5	F	0.0000
001-5	TVHC	.1440
002-5	C	0.0000
002-5	D	0.0000
002-5	F	0.0000
002-5	TVHC	10.6180
003-5	C	0.0000
003-5	D	0.0000
003-5	F	0.0000
003-5	TVHC	1.3030
004-5	C	0.0000
004-5	D	0.0000
004-5	F	0.0000
004-5	TVHC	1.0010
005-5	C	0.0000
005-5	D	0.0000
005-5	F	0.0000
005-5	TVHC	74.2670
006-5	C	0.0000
006-5	D	0.0000
006-5	F	0.0000
006-5	TVHC	1.2630
007-5	C	0.0000
007-5	D	0.0000
007-5	F	0.0000
007-5	TVHC	1.6040

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected
-99999999999 = No sample

Tracer Research Corporation

DuPree/Salina Airport Authority
3237 Arnold, Salina, KS

230354

5/11/94 CONDENSED DATA

Location	Compound	Concentration
008-5	C	0.0000
008-5	D	0.0000
008-5	F	0.0000
008-5	TVHC	1.0040
009-5	C	0.0000
009-5	D	0.0000
009-5	F	0.0000
009-5	TVHC	.3080
010-5	C	0.0000
010-5	D	0.0000
010-5	F	0.0000
010-5	TVHC	1.4370
013-5	C	0.0000
013-5	D	0.0000
013-5	F	0.0000
013-5	TVHC	1.3020
014-5	C	0.0000
014-5	D	0.0000
014-5	F	0.0000
014-5	TVHC	.4490
015-5	C	.0009
015-5	D	0.0000
015-5	F	0.0000
015-5	TVHC	374.2850
016-5	C	0.0000
016-5	D	0.0000
016-5	F	0.0000
016-5	TVHC	192.5820
017-5	C	0.0000

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected
-99999999999 = No sample

DuPree/Salina Airport Authority
3237 Arnold, Salina, KS

230354

5/11/94 CONDENSED DATA

Location	Compound	Concentration
017-5	D	0.0000
017-5	F	0.0000
017-5	TVHC	7.3520
018-5	C	0.0000
018-5	D	0.0000
018-5	F	0.0000
018-5	TVHC	2.8600
019-5	C	0.0000
019-5	D	0.0000
019-5	F	0.0000
019-5	TVHC	151.4750
020-5	C	.0003
020-5	D	0.0000
020-5	F	0.0000
020-5	TVHC	247.2360
021-5	C	0.0000
021-5	D	0.0000
021-5	F	0.0000
021-5	TVHC	4.6600
022-5	C	0.0000
022-5	D	0.0000
022-5	F	0.0000
022-5	TVHC	9.4670
023-5	C	0.0000
023-5	D	0.0000
023-5	F	0.0000
023-5	TVHC	26.1100
024-5	C	0.0000
024-5	D	0.0000

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected
-99999999999 = No sample

DuPree/Salina Airport Authority
3237 Arnold, Salina, KS

230354:

5/11/94 CONDENSED DATA

Location	Compound	Concentration
024-5	F	0.0000
024-5	TVHC	102.1500
025-5	C	0.0000
025-5	D	0.0000
025-5	F	0.0000
025-5	TVHC	172.5060
026-5	C	0.0000
026-5	D	0.0000
026-5	F	0.0000
026-5	TVHC	10.4650
027-5	C	0.0000
027-5	D	0.0000
027-5	F	0.0000
027-5	TVHC	17.2490
028-5	C	0.0000
028-5	D	0.0000
028-5	F	0.0000
028-5	TVHC	9.2160
029-5	C	0.0000
029-5	D	0.0000
029-5	F	0.0000
029-5	TVHC	48.5640
030-5	C	0.0000
030-5	D	0.0000
030-5	F	0.0000
030-5	TVHC	235.9900
031-5	C	0.0000
031-5	D	0.0000
031-5	F	0.0000

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected
-99999999999 = No sample

Tracer Research Corporation

DuPree/Salina Airport Authority
3237 Arnold, Salina, KS

230354

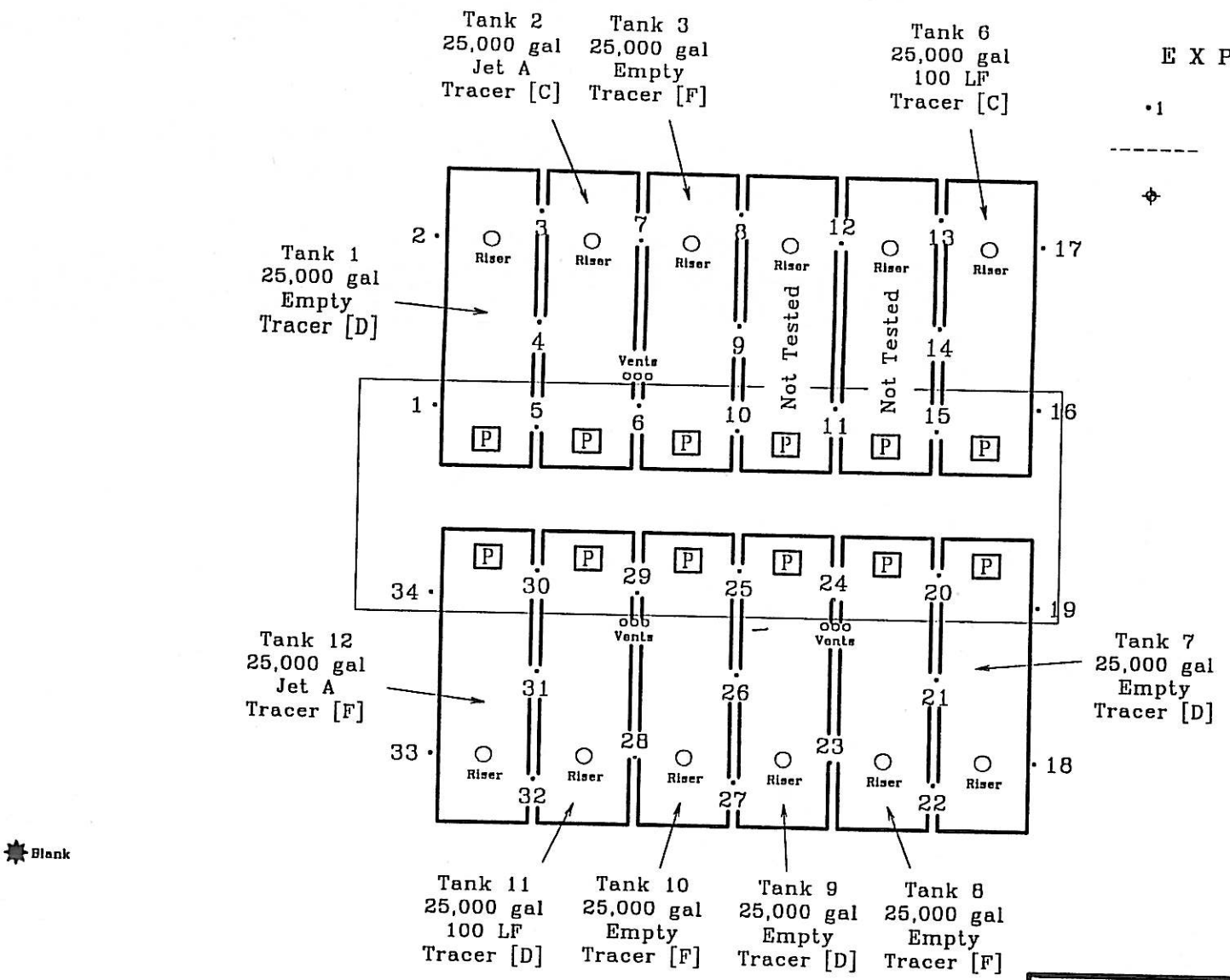
5/11/94 CONDENSED DATA

Location	Compound	Concentration
031-5	TVHC	7.0000
032-5	C	0.0000
032-5	D	0.0000
032-5	F	0.0000
032-5	TVHC	19.8890
033-5	C	0.0000
033-5	D	0.0000
033-5	F	0.0000
033-5	TVHC	.4700
034-5	C	0.0000
034-5	D	0.0000
034-5	F	0.0000
034-5	TVHC	13.0630
BLANK01	C	0.0000
BLANK01	D	0.0000
BLANK01	F	0.0000
BLANK01	TVHC	1.8280
BLANK02	C	0.0000
BLANK02	D	0.0000
BLANK02	F	0.0000
BLANK02	TVHC	.1310

TVHC in mg/L, Tracers in mg/L
0.0000 = Not detected
-99999999999 = No sample

APPENDIX C - FIGURES

Tracer Research Corporation



EXPLANATION

•1 Sampling Probe Location

------- Approximate Pipeline Location

⌖ Monitoring Well Location

N

0 10 20

feet

230354

SALINA AIRPORT AUTHORITY

3237 ARNOLD
SALINA, KANSAS

SAMPLING LOCATIONS

Figure 1

Tracer Research Corporation

PREPARED FOR:

DuPree Testing Services
P.O. Box 364
Ulysses, KS 67880

Tracer Tight® Test
of
2 Underground Storage Tanks
at the
Salina Airport Authority site
3237 Arnold
Salina, KS
May 19, 1994

SUBMITTED BY:

Rob Griffin

TRACER RESEARCH CORPORATION

JOB # 230354a

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INTRODUCTION

DuPree Testing Services and Tracer Research Corporation performed Tracer Tight® leak testing of 2 underground storage tanks at the Salina Airport Authority site in Salina, KS. The water level in the tanks was measured on April 27, 1994 and on May 12, 1994. The following table shows the tank size, type of tracer in each tank, and the product through put factor in the first 72 hours after inoculation.

SYSTEM#	SIZE	TRACER	FACTOR
Tank 4	25,000	C	1
Tank 5	25,000	A	1

The following table shows the type of product in the tank, the product level and the water level in each tank measured in inches at time of inoculation and sampling.

		AT INOCULATION		AT SAMPLING	
SYSTEM#	PRODUCT	H_2O	PRODUCT	H_2O	PRODUCT
Tank 4	Empty	1.25	0.00	1.25	0.00
Tank 5	Empty	2.25	0.00	2.25	0.00

The depth to water in the tank pit was determined to be 5 feet below grade.

CONCEPT OF OPERATION AND IMPLEMENTATION

The detection of water ingress relies on measurements of the level of water in the tank. A change in the water level indicates possible leakage. The water level is measured by placing water indicating paste on the lower end of a stick used to measure the product level.

The typical waiting period between measurements is 14-30 days as part of a Tracer Tight® test. The minimum required waiting period between water level measurements is the time required for a 0.1 gph ingress or leakage of water to produce a change in the water level of 0.25 inches. The waiting period is greater than 14 days for underground storage tanks with volumes more than 60,000 gallons

LEAK DETECTION CRITERIA

The following criteria are used for the classification of leakage based on the ingress of water.

PASS	FAIL
Criteria:	Criteria:
Water level change <0.25"	Water level change ≥0.25"

CERTIFICATION

Job Number : 230354a

Date : May 19, 1994

Location: Salina Airport Authority
3237 Arnold
Salina, KS

SYSTEM#	PRODUCT	SIZE	TRACER	LEAK STATUS *TANK*
Tank 4	Empty	25,000	C	Pass
Tank 5	Empty	25,000	A	Pass

Tracer Research Corporation certifies that the tanks listed in the above table have been tested by means of Tracer Tight®, which meets the criteria set forth in NFPA 329 for a precision leak test. According to EPA standard test procedures for evaluating leak detection methods, the Tracer Tight® method is capable of detecting leaks of 0.05 gallons per hour with a Probability of Detection (P_D) of 0.97 and Probability of False Alarm (P_{FA}) of 0.029.

Submitted by:

Rob Griffin
Tracer Research Corporation

Testers State License Number: COO22

The following criteria are used for the classification of leakage based on the presence or absence of tracer.

PASS

Criteria:

Water level change <0.25"

FAIL

Criteria:

Water level change ≥0.25"

APPENDIX A - Results of U.S. EPA Test Evaluation

Results of U.S. EPA Standard Evaluation

Nonvolumetric Tank Tightness Testing Method

This form tells whether the tank tightness testing method described below complies with the performance requirements of the federal underground storage tank regulation. The evaluation was conducted by the equipment manufacturer or a consultant to the manufacturer according to the U.S. EPA "Standard Test Procedure for Evaluating Leak Detection Methods: Nonvolumetric Tank Tightness Testing Methods." The full evaluation report also includes a form describing the method and a form summarizing the test data.

Tank owners using this leak detection system should keep this form on file to prove compliance with the federal regulations. Tank owners should check with State and local agencies to make sure this form satisfies their requirements.

Method Description

Name: Tracer Tight®

Version:

Vendor: Tracer Research Corporation

(address) 3855 North Business Center Drive

(city) Tucson (state) Arizona (zip) 85705 (phone) 602/888-9400

Evaluation Results

This method, which declares a tank to be leaking when tracer is detected outside the tank at concentrations greater than 3×10^{-5} times the tracer concentration in the tank has an estimated probability of false alarms [P(FA)] of a 0.0 % based on the test results of 0 false alarms out of 22 tests. A 95% confidence interval for P(FA) is from 0 % to 13 %

The corresponding probability of detection [P(D)] of a 0.05 gallon per hour leak is 100 % based on the test results of 45 detections out of 45 simulated leak tests. A 95% confidence interval for P(D) is from 92.4 % to 100 %

The corresponding probability of detection [P(D)] of a 0.1 gallon per hour leak is 100 % based on the test results of 93 detections out of 93 simulated leak tests. A 95% confidence interval for P(D) is from 96.2 % to 100 %

Does this method use additional modes of leak detection? ☒ Yes ☐ No If Yes, complete additional evaluation results on page 3 of this form.

Based on the results above, and on page 3 if applicable, this method ☒ does ☐ does not meet the federal performance standards established by the U.S. Environmental Protection Agency (0.10 gallon per hour at P(D) of 95% and P(FA) of 5%).

Test Conditions During Evaluation

The evaluation testing was conducted outside a 55 -gallon ☒ steel ☐ fiberglass tank that was 22 inches in diameter and 34 inches long, installed in silty clay native soil backfill.

The ground-water level was 0 inches above the bottom of the tank.

Nonvolumetric TTT Method Tracer Tight®
Version

Test Conditions During Evaluation (continued)

The tests were conducted with the tank 38/0.0 percent full.

The temperature difference between product added to fill the tank and product already in the tank ranged from NA °F to NA °F,
with a standard deviation of NA °F.

The product used in the evaluation was regular leaded gasoline

This method may be affected by other sources of interference. List these interferences below and give the ranges of conditions under which the evaluation was done. (Check None if not applicable.)

☒ None

Interferences	Range of Test Conditions

Limitations on the Results

The performance estimates above are only valid when:

- The method has not been substantially changed.
- The vendors instructions for using the method are followed.
- The tank contains a product identified on the method description form.
- The tank capacity is NA gallons or smaller. *NO SIZE LIMITATION*
- The difference between added and in-tank product temperatures is no greater than + or - NA degrees Fahrenheit.

☒ Check if applicable:

Temperature is not a factor because Tracer Tight is an external leak detection method

- The waiting time between the end of filling the test tank and the start of the test data colleciton is at least NA hours.
- The waiting time between the end of "topping off" to final testing level and the start of the test data collection is at least NA hours.
- The total data collection time for the test is at least NA hours.
- The product volume in the tank during testing is NA % full.
- This method ☒ can ☐ cannot be used if the ground-water level is above the bottom of the tank.

Other limitations specified by the vendor or determined during testing:

Soil must be permeable enough to yield at least 0.15 cfm of air through a 3/4" nominal diameter probe under a vacuum of 15" of Hg.

Nonvolumetric TTT Method Tracer Tight®
Version

>Safety disclaimer: This test procedure only addresses the issue of the methods ability to detect leaks. It does not test the equipment for safety hazards.

Additional Evaluation Results (if applicable)

This method, which declares a tank to be leaking when water ingress is detected has an estimated probability of false alarms [P(FA)] of N/A % based on the test results of false alarms out of N/A tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(FA) is from 0 % to N/A %.

The corresponding probability of detetecton [P(D)] of a N/A gallon per hour leak is N/A % based on the test results of N/A detections out of N/A simulated leak tests. Note: A perfect score during testing does not mean that the method is perfect. Based on the observed results, a 95% confidence interval for P(D) is from N/A % to 100 %.

>Water detection mode (if applicable)

Using a false alarm rate of 0% the minimum water level that the water sensor can detect with a 100% probability of detection is 0.008 inches.

Using a false alarm rate of 5% the minimum change in water level that the water sensor can detect with a 95% probability of detection is 0.19 inches.

Based on the minimum water level and change in water level that the water sensor can detect with a false alarm rate of 5% and a 95% probability of detection, the minimum time for the system to detect an increase in water level at an incursion rate of 0.10 gallon per hour is 1836 minutes in a 75,000 - gallon tank.

Certification of Results

I certify that the nonvolumetric tank tightness testing method was installed and operated according the the vendors instructions. I also certify that the evaluation was performed according to the standard EPA test procedure for nonvolumetric tank tightness testing methods and that the results presented above are those obtained during the evaluation.

Curtis W. Bryant
(printed name)

Curtis W. Bryant
(signature)

May 20, 1992
(date)

Control Strategies Engineering
(organization performing evaluation)

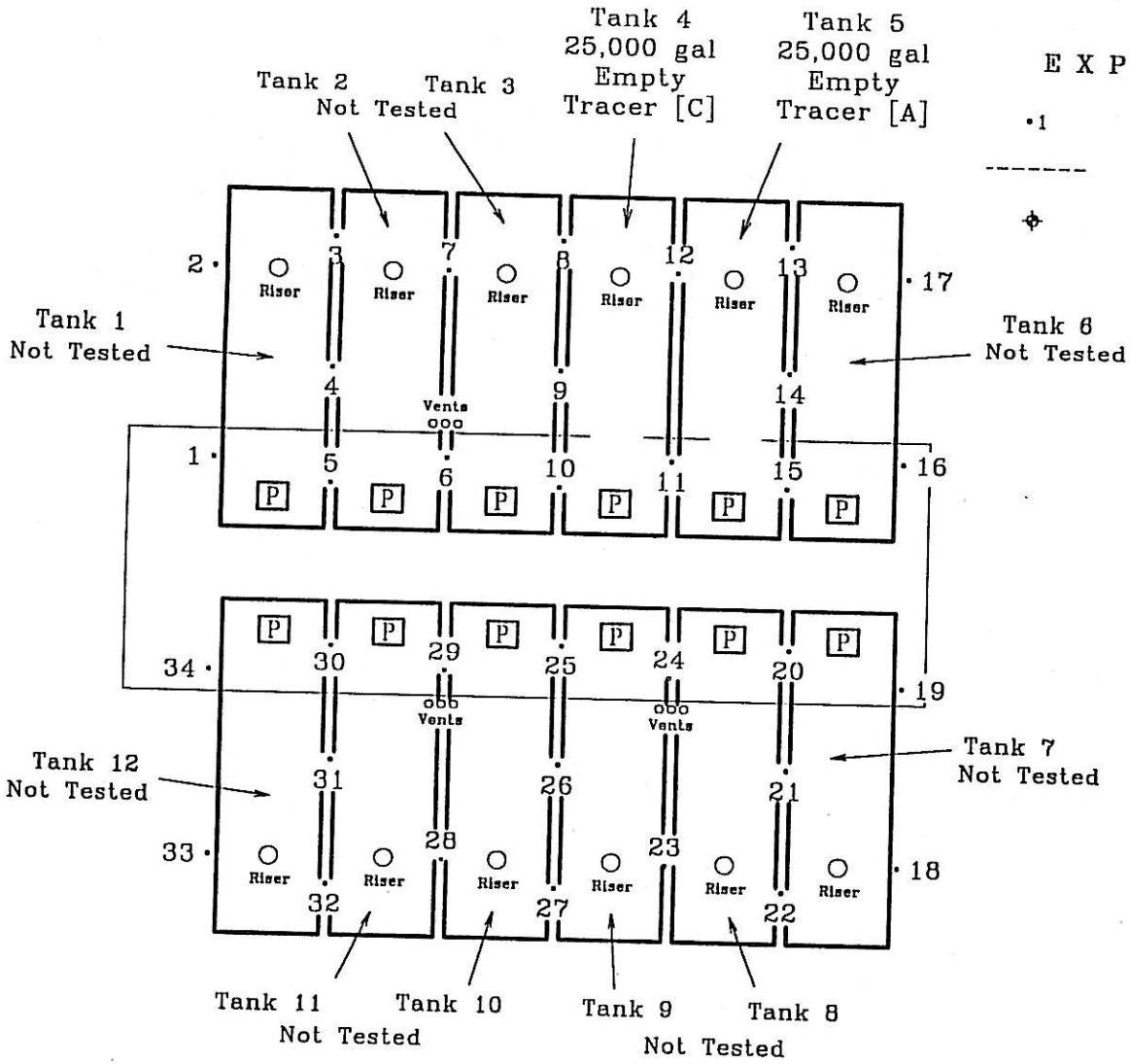
12550 West Manville Road
Tucson, Arizona 85743
(city, state, zip)

(602) 682-8725
(phone number)

APPENDIX B - ANALYTICAL DATA

APPENDIX C - FIGURES

Tracer Research Corporation



EXPLANATION

•1	Sampling Probe Location
-------	Approximate Pipeline Location
⌖	Monitoring Well Location

N

0 10 20
feet

230354aW

Blank

Dirt

SALINA AIRPORT AUTHORITY

3237 ARNOLD
SALINA, KANSAS

SAMPLING LOCATIONS

APPENDIX C
PLAINS ENVIRONMENTAL SERVICES REPORT

P·E·S

Plains Environmental Services
P.O. Box 6288 • Salina, KS 67401-0288 • (913) 827-4545
Environmental Consulting & Mobile Laboratory Services

LABORATORY REPORT

CLIENT: Bucher, Willis & Ratliff
7920 Ward Parkway
Suite 100
Kansas City, MO 64114

DATE REPORTED: 04-27-94

PROJECT LOCATION:
Salina Airport
Salina, Kansas

ATTN: John H. Bednarczyk

SAMPLE NO: 01-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	40.	ug/Kg	20.
TOLUENE	ND	ug/Kg	30.
ETHYLBENZENE	ND	ug/Kg	40.
XYLENES, TOTAL	ND	ug/Kg	40.
TOTAL VOLATILE ORGANICS	650.	ug/Kg	100.

SAMPLE NO: 01-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	>140000.	ug/Kg	20.
TOLUENE	39900.	ug/Kg	30.
ETHYLBENZENE	3920.	ug/Kg	40.
XYLENES, TOTAL	2300.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	>780000.	ug/Kg	100.

SAMPLE NO: 02-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	111000.	ug/Kg	20.
TOLUENE	19000.	ug/Kg	30.
ETHYLBENZENE	2990.	ug/Kg	40.
XYLENES, TOTAL	3620.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	420000.	ug/Kg	100.

SAMPLE NO: 02-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	>120000.	ug/Kg	20.
TOLUENE	15100.	ug/Kg	30.
ETHYLBENZENE	1030.	ug/Kg	40.
XYLENES, TOTAL	515.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	>620000.	ug/Kg	100.

PLAINS ENVIRONMENTAL SERVICES
PO Box 6288 Salina, KS 67401-0288 (913) 827-4545

SAMPLE NO: 03-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	1750.	ug/Kg	20.
TOLUENE	32.	ug/Kg	30.
ETHYLBENZENE	ND	ug/Kg	40.
XYLENES, TOTAL	ND	ug/Kg	40.
TOTAL VOLATILE ORGANICS	8000.	ug/Kg	100.

SAMPLE NO: 03-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	38500.	ug/Kg	20.
TOLUENE	7210.	ug/Kg	30.
ETHYLBENZENE	828.	ug/Kg	40.
XYLENES, TOTAL	518.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	140000.	ug/Kg	100.

SAMPLE NO: 04-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	218.	ug/Kg	20.
TOLUENE	ND	ug/Kg	30.
ETHYLBENZENE	ND	ug/Kg	40.
XYLENES, TOTAL	ND	ug/Kg	40.
TOTAL VOLATILE ORGANICS	1700.	ug/Kg	100.

SAMPLE NO: 04-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	>110000.	ug/Kg	20.
TOLUENE	37800.	ug/Kg	30.
ETHYLBENZENE	3450.	ug/Kg	40.
XYLENES, TOTAL	940.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	>1100000.	ug/Kg	100.

SAMPLE NO: 05-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	54.	ug/Kg	20.
TOLUENE	ND	ug/Kg	30.
ETHYLBENZENE	ND	ug/Kg	40.
XYLENES, TOTAL	ND	ug/Kg	40.
TOTAL VOLATILE ORGANICS	550.	ug/Kg	100.

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PO Box 6288 Salina, KS 67401-0288 (913) 827-4545

SAMPLE NO: 05-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	49300.	ug/Kg	20.
TOLUENE	8110.	ug/Kg	30.
ETHYLBENZENE	1050.	ug/Kg	40.
XYLENES, TOTAL	516.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	280000.	ug/Kg	100.

SAMPLE NO: 06-(2-3') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	ND	ug/Kg	20.
TOLUENE	ND	ug/Kg	30.
ETHYLBENZENE	ND	ug/Kg	40.
XYLENES, TOTAL	ND	ug/Kg	40.
TOTAL VOLATILE ORGANICS	270.	ug/Kg	100.

SAMPLE NO: 06-(11-12') DATE SAMPLED AND ANALYZED: 04-26-93

ANALYSES	RESULTS	UNITS	R.L.
BENZENE	>180000.	ug/Kg	20.
TOLUENE	27000.	ug/Kg	30.
ETHYLBENZENE	1850.	ug/Kg	40.
XYLENES, TOTAL	980.	ug/Kg	40.
TOTAL VOLATILE ORGANICS	>950000.	ug/Kg	100.

R.L. = reporting limit
ND = not detected
ug/Kg = micrograms per kilogram

> Detector saturation occurred during the analysis of these compounds. The values reported represent minimum values of the analytes present in the sample.

All samples were soil samples that were analyzed by headspace analysis. Several grams of soil were accurately weighed in a 40-mL VOC vial. The sample vial was capped tightly and heated at 60 C for 30 minutes. This technique drives the volatile components from the soil material into the headspace. A sample of headspace was injected into the gas chromatograph for analysis.

All analyses were performed by Plains Environmental Services using GC/FID.

PLAINS ENVIRONMENTAL SERVICES
PO Box 6288 Salina, KS 67401-0288 (913) 827-4545

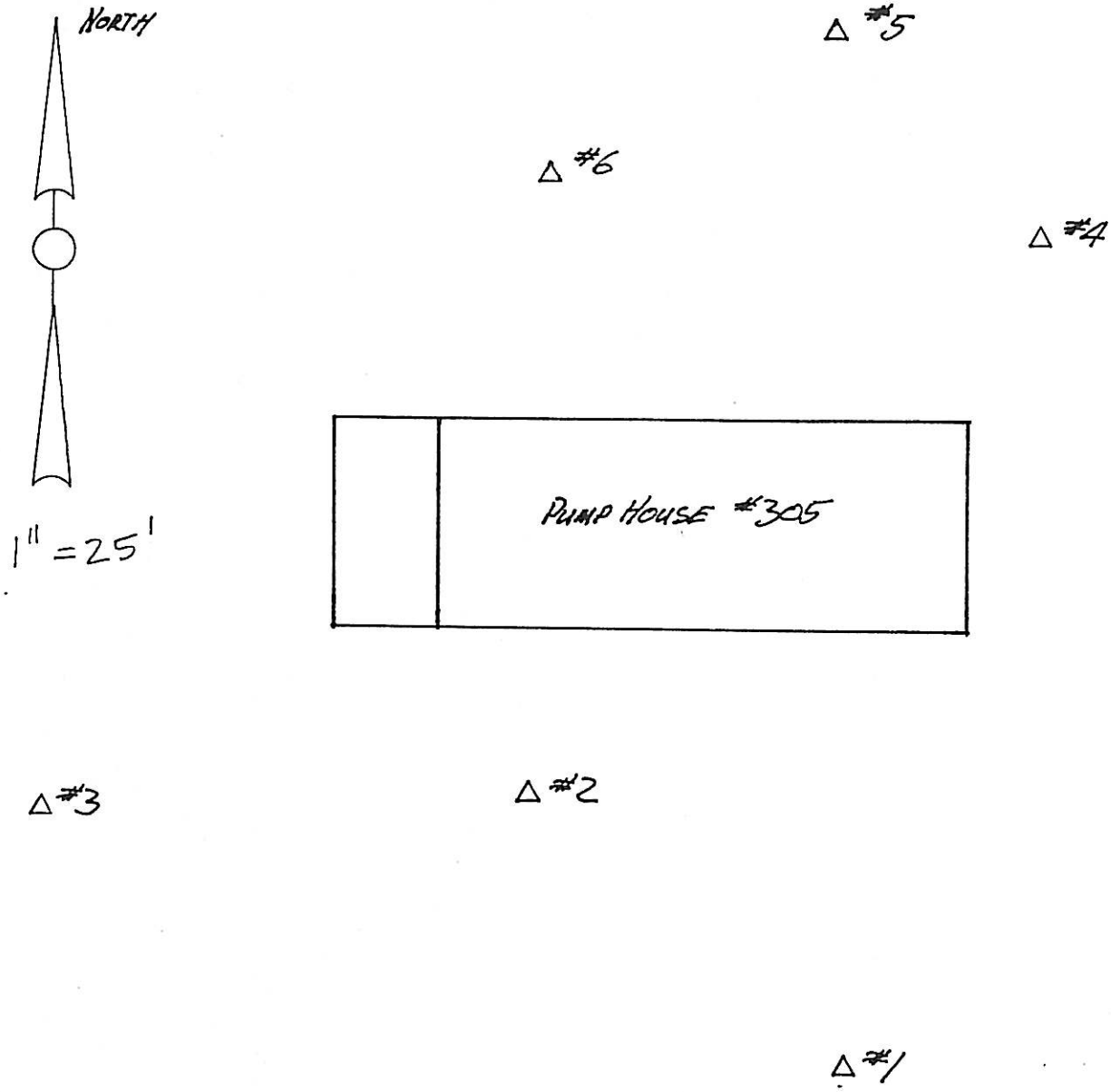
All six (6) locations showed significant levels of contamination at the 11-12' interval. Of the shallow soil samples, only location number 2 (2-3') showed more than trace levels of hydrocarbon contamination.

PLAINS ENVIRONMENTAL SERVICES

Lynn R. Newcomer

Lynn R. Newcomer
President

PROJECT. SALINA AIRPORT AUTHORITY NO.
DESCRIPTION. SUBSURFACE INVESTIGATION DESIGNED. DATE 28 APR '94
SAMPLES 26 APR 94 CHECKED. DATE.
SHEET. 1 OF.



△ Indicates GeoProbe Location

All samples composited at 2-3' & 11-12'
Analysis for BTEX & VOCs in soils

BUCHER, WILLIS & RATLIFF
ENGINEERS ▪ PLANNERS ▪ ARCHITECTS

APPENDIX D
LEAD-BASED PAINT SURVEY REPORT

RAMSEY·SCHILLING Consulting Group, Inc.

RS

6400 W. 95th • Suite 200 • Overland Park, Kansas 66212 • (913) 648-6000 • FAX (913) 648-7881

LEAD-BASED-PAINT SURVEY

for

Salina Airport Authority
3237 Arnold Avenue
Salina, Kansas 67401

by

RAMSEY·SCHILLING CONSULTING GROUP, Inc.
6400 w. 95th ST., SUITE 200
Overland Park, Kansas 66212
(913) 648-6000

May 4, 1994

Project No. 500494

Contents of this Report:

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Ramsey·Schilling Consulting Group, Inc.
6400 W. 95th Street, Suite 200
Overland Park, Kansas 66212

913-648-6000

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Survey Discussion	4.0
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Recommendations	6.0

1.0 INTRODUCTION

Curtis Hallier, Chemist/Industrial Hygienist of Ramsey-Schilling Consulting Group, Inc., conducted a limited lead survey at Pump House #305 located at the Salina Municipal Airport on April 27, 1994. The survey included a field screening of interior and exterior painted surfaces as well as the collection of physical samples representing the soil, dust and paint in and around the Pump House.

The field screening was completed using x-ray fluorescence spectroscopy. Measurements were made of each visible paint color at the Pump House (see attached XRF results). Physical samples of paint were taken representing each color of the surface paint. Soil samples were collected at the northwest and southeast corner of the building to characterize the soil lead concentration. Lead dust wipe samples were collected on the floor at the northwest and southeast corners of the building to determine the general presence of lead particles in the settled dust.

Mr. Hallier was escorted to the building by a representative of the airport authority.

This investigation is not all inclusive and the results do not apply to any surface or material not specifically tested. The purpose of the investigation was to develop a basic understanding of the general presence of lead-based paint and/or lead related hazards in or on the building components and building.

2.0 Site Description

Pump House #305 is a single-story concrete block building approximately 30 feet x 70 feet constructed in the 1960's. The building is used to house 12 fuel pumps that service the fuel storage tanks located outside the building.

The floor construction is concrete slab on grade. The roof is constructed with precast concrete tees. All windows and doors are metal with a metal frame.

3.0 Environmental Concern

Lead-Based Paint

According to the Federal Centers for Disease Control and Prevention (CDC) and the United States Department of Housing and Urban Development, adults and children may suffer ailments due to excessive lead in their blood, caused from exposure to lead-based paint and other lead sources. Federal Health Officials have determined that lead exposure is the number one environmental health hazard for children. The Occupational Safety and Health Administration (OSHA) has determined that lead represents a major safety and health hazard for workers.

Research in the 1980's showed that lead dust from paint is of special concern and is the most significant contributor to lead exposure.

According to the CDC and US Department of Labor, Occupational Safety and Health Administration (OSHA), lead can be absorbed into the body by inhalation (breathing) and by ingestion (eating). CDC and OSHA state that exposure to lead can result in a number of health problems ranging from headache, dizziness, nausea, vomiting, sleep disturbances, hyperactivity, high blood pressure, coma and death. A new OSHA regulation 1926.62 entitled "Lead in Construction" requires an employer to take specific actions to protect his workers from the hazards of lead exposure when working with anything that contains lead. This new law is similar to a OSHA law for General Industry 1910.1025 which was enacted some time ago.

4.0 Survey Discussion

Surface Paint Sampling

This survey was performed using the Scitec MAP 3 XRF Spectrum Analyzer. According to a limited and independent study conducted by the National Institute of Science and Technology (NIST), the MAP XRF offers superior precision and accuracy over the other x-ray fluorescence (XRF) instruments currently and most frequently used for these investigation. The XRF is said to be able to differentiate lead content in paint with an assumed accuracy level of +/- .15 mg/cm^2, which would represent the best precision of any XRF instrument currently being used for field investigations.

Survey measurements were taken in order to characterize the general presence of lead-based paint. Readings were taken on interior and exterior finished surfaces.

Soil Sampling

Two soil samples were collected from the soil surrounding the building. The samples were collected to characterize the lead content of the soil around the building. The sample results are helpful in evaluating the potential contamination that sometimes occurs around structures painted with lead-based paint or near areas where leaded fuels are used.

Wipe Sampling

Two wipe samples were collected from the floor area in the Pump House area. These samples were collected to determine the amount of lead in the dust on the floor. Typically, lead in dust in a building is a result of lead-based paint in a building which has been disturbed and/or is deteriorated and/or is lead from the outside that has been tracked in. These samples are used to determine the pre-cautionary and safety measures that are necessary for workers because of the re-entrainment of these dusts into the air and opportunity to get the dust on hands, food, drinking water etc.., that present an opportunity for the lead to be ingested. OSHA has recently implemented a new lead in Construction Standard, CFR 1926.62, which places extra emphasis that the employer ensure that their workers are not exposed to airborne lead concentrations greater than 30.0$\mu g/m^3$, the OSHA action level.

Paint Chip Sampling

Eight paint chip samples were collected from the building materials and piping to determine the lead content. These samples were collected to verify the field screening measurements taken using the XRF. It is important to be aware of lead-containing surfaces to determine the application and implication of OSHA's "Lead in General Industry" 1910.1025 or OSHA's "Lead in Construction" 1926.62 requirements. Also it is important to know prior to any renovation or demolition activity to ensure that no one is exposed to airborne lead concentrations nor the building or adjacent soil is contaminated.

4.0 Survey Findings

4.1 Paint Chip Results

All paint readings were taken with a Scitec MAP XRF Spectrum Analyzer, Serial # AS 103. The MAP XRF is designed to measure the lead content of paint on building surfaces. The measurement is rapid and non-destructive and is said to be capable of detecting lead-in-paint concentrations that are buried within 25 layers of paint.

For Multi-Family Housing, HUD has determined that the following survey results would relate to the indicated classification: The HUD standard is presently considered "state of the art" in determining lead-based paint contamination and management responses.

Results (mg/cm^2)	Classification
less than 0.8 mg/cm^2	Negative
0.4 mg/cm^2 - 1.2 mg/cm^2	Inconclusive
greater than 1.3 mg/cm^2	Positive

These guidelines are recommended protocols which assist housing authorities in implementing section 302 of the Lead-Based Paint Poisoning Prevention Act, as mandated by Congress.

HUD recommends abatement to be performed on surfaces containing lead levels that are considered positive. This can include any of a variety of methods, such as, but not limited to removal, replacement, chemical stripping and encapsulation. Results of the survey are listed in the following tables. The measured values in the right column are noted as "K-Shell". HUD utilizes the "K-Shell" values for the determination of lead-based paint. This measurement is said to represent the total amount of lead present in paint layers, on the measured surface.

When physical samples of paint are collected HUD used 0.5% by weight as the abatement action level.

4.2 Soil Sample Results

EPA has set a goal of lead in soil to be no more than 500 part per million (PPM). The samples at the Pump House #305 fall below this level.

4.3 Dust Sample Results

Clearance levels for dust after lead abatement has been set at 200 $\mu g/sq/ft^2$ by the United States Department of Housing and Urban Development HUD. The standard was set after extensive research and is a health based standard.

The U.S. Army in its recent "Lead-Based Paint Management Program" draft states that all lead dust levels in any military installation shall be managed at a level no greater than 200 $\mu g/sq\ ft^2$.

The dust sample results at Pump House #305 exceeded this level approximately 5 times. The values of the dust wipe samples were 1037.6 $\mu g/ft^2$ in the northwest corner and 982.0 in the southwest corner.

Lead-Based Paint - XRF Measurements

Table 1.

Sample #	Location/Description	Result mg/cm^2
1	Block Wall W. End of Pump Room, White	0.0
2	Vent duct (Metal) Center of Pump Room, Grey	0.3
3	Pump Housing Pump Room, Grey	0.0
4	Pump Stand Pump Room, Black	0.0
5	Pump Stand Pump Room, Yellow	1.6

6	North Entry Door Jamb to Pump Room, Green	0.6
7	Utility Box Northwest Corner, Silver	1.4
8	Pump Room Main Entry Door, Green	1.8
9	Exterior Window Sill, White	1.4
10	North Exterior Wall Pump House, White	0.5
11	Exterior Process Piping Fill Cap, Silver	4.3
12	Pump Room Window Sill, White	0.6
13	Pump Room East Wall, White	0.2
14	Exterior Pump Room East Wall, White	0.0
15	Exterior Process Piping Fill Cap, Silver	6.6
16	Exterior Door to Electrical Room, Green	3.8
17	Exterior South Window Sill, White	0.0
18	Exterior South Wall, White	0.0
19	West Interior Wall Electrical Room	0.2
20	Black Cabinet on South Wall of Electrical Room	0.4
21	Interior Wall, Electrical Room, White	0.0

Soil Sampling

Table 2.

Sample #	Description/Location	Result mg/Kg
S-1	Northwest Corner of Pump House Building	171.9
S-2	Southeast Corner of Pump House Building	70.9

Paint Chip Samples

Table 3.

Sample #	Location/Description	Result %by Wt
PS-1	Northwest Window Sash, (Green)	2.92
PS-2	North Pump Room Entry Door Frame, (Green)	0.721
PS-3	North Interior Wall (White)	0.0561
PS-4	Pump #1 (Black) Metal	0.548
PS-5	Pump #12 (Grey) Metal	0.528
PS-6	Pump #12 (Silver) Metal	1.26
PS-7	Pump #11 (Yellow) Metal	9.92
PS-8	Exterior Wall South Side (White)	0.0668

Dust Wipe Samples

Table 4.

Sample #	Location/Description	Result $\mu g/ft^2$
W-1	Northwest Corner of Pump Room Floor	1037.6
W-2	Southeast Corner of Pump Room Floor	982.0

5.0 Recommendations:

Lead was found in all the types of samples taken. However, the most immediate concern is the lead dust found within the building.

Ramsey-Schilling recommends that the lead be cleaned to a level below 200 $\mu g/ft^2$ immediately to prevent contamination or lead poisoning of any personnel entering the building. As an alternative, personnel could wear respirators and disposable coveralls in the building with proper decontamination when leaving. The cleaning of the building can be accomplished on a quick basis by having a lead abatement contractor start on the project with Ramsey-Schilling giving on-site abatement design instruction and providing air sampling monitoring checks as well as the required clearance wipe tests. The clearance wipe tests will indicate whether indeed the dust has been cleaned. If the Airport Authority has any personnel they are respiratory qualified; Ramsey-Schilling can give on-site instruction for them to safely remove the lead dust.

Once the existing dust is removed; the existing lead-based paint must be managed to prevent the site from becoming contaminated again. Ramsey-Schilling can provide a management plan for the maintenance of the paint.

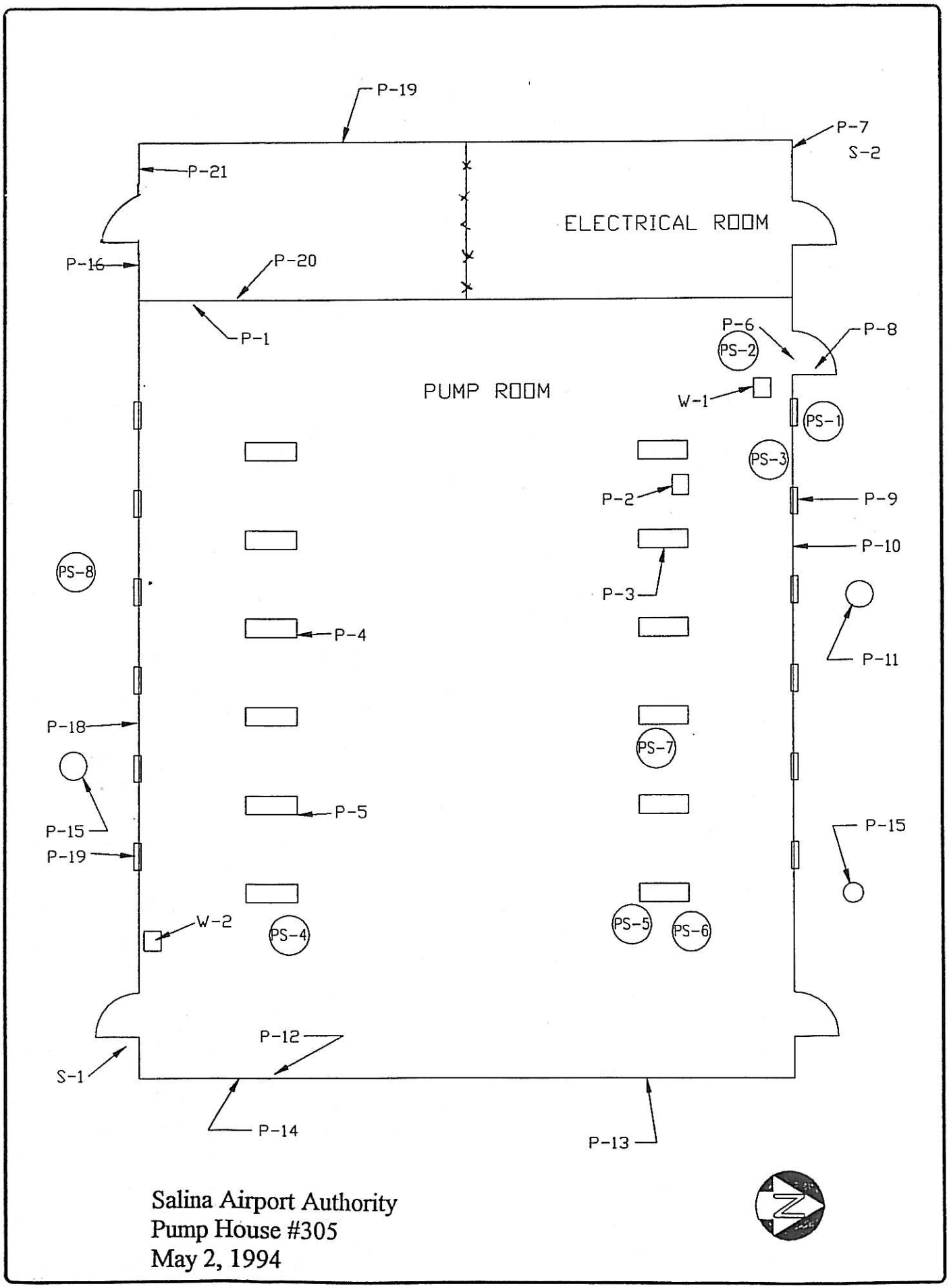
The walls of the facility did not contain lead in paint above the HUD action levels of 1.0 mg/cm^2 (XRF) or the 0.5% weight (laboratory). Therefore they are not a major potential source for lead exposure.

However, the items such as the piping doors, pump stand, fill cap, window sill and sash, pumps, door frame were positive (see schedule XRF measurements). This paint should be repaired were ever it is damaged and should be monitored on a periodic schedule to assure that any new damage is repaired. The repair work can be completed by the same lead abatement contractor while he is on site.

The soil lead is below the current EPA action level and requires no remediation or abatement.

Last, as a general recommendation, Ramsey-Schilling's experience on other military installations and similar facilities indicates that the lead hazard problems noted in this report are likely to be in other buildings and/or areas of this former military installation.

An environmental assessment and testing program is recommended if the other buildings and site areas of the Salina Airport Authority have not been environmental tested and assessed for lead and/or other environmental hazards such as asbestos, PCB's, radon, indoor air quality and petroleum and/or aviation fuel related contaminates.



Salina Airport Authority
Pump House #305
May 2, 1994

Ramsey-Schilling Consulting Group, Inc.

APPENDIX E
SAA PRESENTATION AGENDA

SALINA AIRPORT AUTHORITY
PUMP HOUSE NO. 305
ENVIRONMENTAL COMPLIANCE AUDIT AND INVESTIGATION
May 18, 1994

Existing 12-25,000 gallon Underground Storage Tanks (UST)
US Army Corps of Engineers closing UST's Under FUDS
Question: Does SAA want to accept UST's?

1. UST COMPLIANCE AUDIT 3/31/94

Purpose:	To determine the current environmental compliance status, and the cost for modifications which may be necessary for compliance.
KDHE Requirements:	* Registration * Permit * Release Detection Corrosion Protection - 12/23/98, removed due to PCB's Spill/Overfill Protection - 12/23/98 * Financial Responsibility - need third party liability
Cost to Retain:	2-25,000 gallon UST's - $121,000 5-25,000 gallon UST's - $104,000 12-25,000 gallon UST's - $70,000
Replacement Cost:	4-12,000 gallon AST's - $333,000
Recommendation:	Tank Tightness Test Internal Inspection Soil Investigation Lead Paint Screening

2. LIMITED ENVIRONMENTAL INVESTIGATION 4/22/94

Tank Tightness:	DuPree Testing Services All Tanks Passed, possible leak in vent above product in UST #6.
Internal Inspection:	On hold.
Soil Investigation:	Plains Environmental Services Six locations, two samples each. Significant VOC's at depth.
KDHE:	VOC's not that high, and won't migrate. Probable spills from ramp to entire east side. SAA cost, if any, Kansas UST Trust Fund.

Lead Paint:

Ramsey-Schilling
Interior walls, equipment and dust.
Exterior walls, soil and equipment.
Found lead paint on equipment and lead in dust.

3. REMEDIATION OF LEAD PAINT, VENT LINE, AND CATHODIC PROTECTION

Lead Paint:
Remediation Contractors, Inc.
Ramsey-Schilling

Vent line in UST #6.

Re-install Cathodic Protection System.

4. DESIGN PHASE

Separate Pump House from Fueling and De-fueling Lines.
ATA, NFPA, and FAA Requirements.
Spill/Overfill Protection.
Environmental Spill Containment Pads.
Repair/Replace Roof.
Cost Estimate.

APPENDIX F
LEAD DUST CLEARANCE SAMPLING REPORT

RAMSEY·SCHILLING Consulting Group, Inc.

RS

6400 W. 95th • Suite 200 • Overland Park, Kansas 66212 • (913) 648-6000 • FAX (913) 648-7881

LEAD DUST CLEARANCE SAMPLING REPORT

BUILDING 305

SALINA AIRPORT AUTHORITY
SALINA, KANSAS

JUNE 6, 1994

RAMSEY-SCHILLING CONSULTING GROUP, INC.
6400 WEST 95TH STREET, SUITE 200
OVERLAND PARK, KANSAS 66212
(913) 648-6000

RS

1.0 INTRODUCTION

Dust clearance wipe samples were taken for a lead dust abatement project at Building 305 (Pump House) for the Salina Airport Authority on May 30, 1994. The samples were taken by Mr. Carl Ramsey, Industrial Hygienist and Architect with Ramsey-Schilling Consulting Group. The samples passed clearance abatement levels and verbal instructions was given on May 31, 1994 that the lead dust had been abated.

2.0 SAMPLING PROTOCOL

The lead dust clearance wipe samples were taken in accordance with the industry recommended sampling protocol.

The floor area to be sampled is measured for a one foot square area. Laboratory sampling paper, which is selected for its durability and easy acid digestion is used to wipe the one foot square area. The sampling paper is wetted with ionized water and is wiped across the square foot sampling area in a "s" motion in one direction and is folded over on itself and wiped across the sample area in a "s" motion in the other direction and again is folded over itself so the dirty sides are in. Wiping pressure used as necessary to clean up all visible dust in the square foot sample area. Gloves shall be worn by the sampler which are thoroughly cleaned between samples or are changed to new gloves.

3.0 CLEARANCE LEVELS

The clearance dust lead level for dust on floors is 200 μg/ft micrograms per square foot, this is a health based number which was developed by the Department of Housing and Urban Design (HUD). The military and numerous other agencies have adopted this value pending the outcome of a new study by EPA (mandated by Congress through Title X legislation) for a health based number for lead dust.

4.0 LEAD HEALTH CONCERN AND HISTORY OF REGULATOR REQUIREMENTS

According to the Federal Centers for Disease Control and Prevention (CDC) adults and children suffer ailments due to exposure to lead resulting in excessive lead in their blood. This problem is primarily caused from exposure to lead dust which results from wear and tear, chalking, or other damage to lead-based paint. Another primary source of lead is combustion of lead containing fuels, which causes lead fallout onto soil or other surfaces and again contributes to the dust problem. CDC has called lead exposure the number one environmental health hazard for children. The hazard involves exposure of children directly to a lead source as well as exposure to "take home lead" which is lead brought home by the children's parents or other adults from the work

RS

place. Excessive lead exposure can result in damage to the brain, nervous system, kidney, heart and reproductive system and may even result in death.

In response to the adverse health affects of lead exposure, Congress passed the current lead law that is directing most of the response to the hazard. The law, which is called, "Title X - Residential Lead-Based Paint Hazard Reduction Act of 1992" was signed into law in October, 1992. "Title X" requires numerous federal agencies to complete a variety of tasks to prevent exposure to lead and its adverse health effects.

One requirement of the new law was that the Occupational Safety and Health Administration (OSHA) develop a standard for "Lead in Construction". The interest in the new standard caused employers to become more aware and concerned with the current OSHA standard for lead in General Industry.

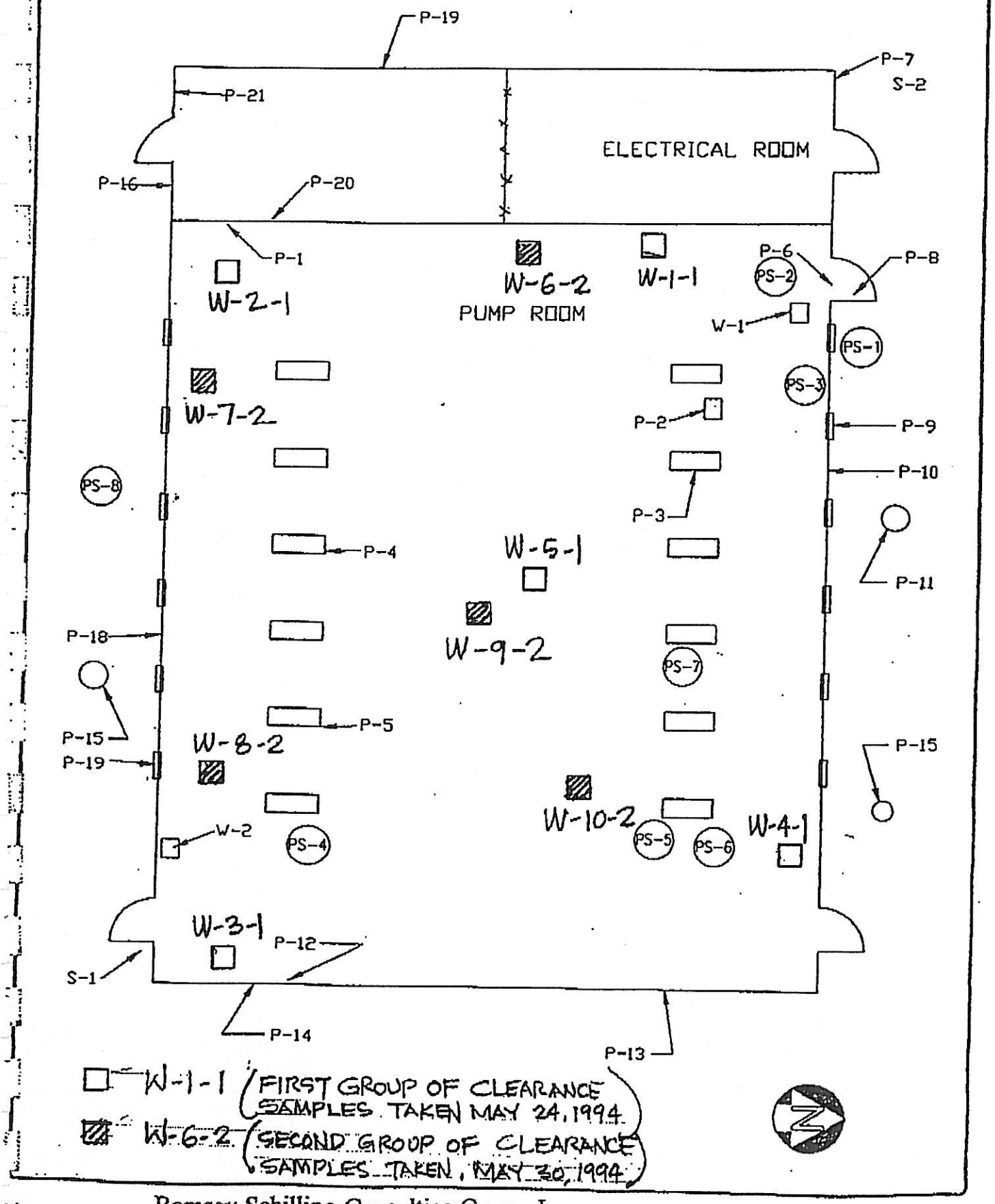
The new Lead in Construction law went into affect in August of 1993 and requires employers to protect their employees from exposure to lead in any form.

The primary areas of lead exposure for a worker are:

1. Working on or with lead-based paint surfaces or items;
2. Working on surfaces that contain leaded dust; and,
3. Working on lead contaminated soil.

5.0 SAMPLING RESULTS

The sampling results of the two different sampling periods are attached one for May 24, 1994 and one for May 30, 1994.



Ramsey-Schilling Consulting Group, Inc.

BUILDING 305 - SALINA AIRPORT AUTHORITY

RS RAMSEY•SCHILLING Consulting Group, Inc.

6400 W. 95th • Suite 200 • Overland Park, Kansas 66212 • (913) 648-6000 • FAX (913) 648-7881

METALS ANALYTICAL REPORT

CLIENT: Salina Airport Authority
PROJECT NAME AND #: 500494

SAMPLE TYPE: Wipe

SAMPLE DATE: 5/24/94
ANALYSIS DATE: 5/25/94
REPORT DATE: 5/25/94
ANALYTICAL METHOD: SW846-3050\7420

LAB #	SAMPLE #	SAMPLE DESCRIPTION/LOCATION	RESULT	UNIT
940653	W-1	N.W. corner of pump house	67.0	µg/ft²
940654	W-2	S.W. corner of pump house	328	µg/ft²
940655	W-3	N.E. corner of pump house	730	µg/ft²
940656	W-4	S.E. corner of pump house	281	µg/ft²
940657	W-5	Center corner of pump house	713	µg/ft²
940658	QC	Blank	<50.0	µg
940659	QC	Control	98.2	% recovery

LABORATORY NAME: Ramsey•Schilling Analytical Laboratory, 6400 W. 95th St. Suite 200, Overland Park, KS 66212

ANALYTICAL TECHNIQUE: FAAS
DETECTION LIMIT: .5 mg/kg

ANALYZED BY: Curtis Hallier APPROVED BY: Carl C. Ramsey

Note: All wipe, paint and soil samples are analyzed using methods recommended by the Department of Housing and Urban Development. Samples other than these are analyzed using the most applicable analytical technique and method. This laboratory participates in the AIHA/NIOSH sponsored EL PAT program. This report shall not be reproduced except in full.
All sample batches have had quality control checks ensuring analytical reliability. QA/QC information is available upon request.

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METALS ANALYTICAL REPORT

CLIENT: Salina Airport Authority
PROJECT NAME AND #: 500594

SAMPLE TYPE: Lead Dust Wipe

SAMPLE DATE: 5/30/94
ANALYSIS DATE: 5/31/94
REPORT DATE: 6/2/94
ANALYTICAL METHOD: SW846-3050-7420

LAB #	SAMPLE #	SAMPLE DESCRIPTION/LOCATION	RESULT	UNIT
940671	W-6-2	West side of building - center	209	µg/ft²
940672	W-7-2	Southwest corner of building	108	µg/ft²
940673	W-8-2	South side of building - center	81.3	µg/ft²
940674	W-9-2	Center of building	154	µg/ft²
940675	W-10-2	Northeast corner of building	172	µg/ft²
940676	Field Blank	Blank	<50.0	µg
940677	QC	Reagent Blank	<50.0	µg
940678	QC	Control	96.2	% recovery

LABORATORY NAME: Ramsey•Schilling Analytical Laboratory, 6400 W. 95th St. Suite 200, Overland Park, KS 66212

ANALYTICAL TECHNIQUE: FAAS
DETECTION LIMIT: 0.5 mg/kg

ANALYZED BY: David Nold

APPROVED BY: Carl C. Ramsey

Note: All wipe, paint and soil samples are analyzed using methods recommended by the Department of Housing and Urban Development. Samples other than these are analyzed using the most applicable analytical technique and method. This laboratory participates in the AIHA/NIOSH sponsored EL PAT program. This report shall not be reproduced except in full.
All sample batches have had quality control checks ensuring analytical reliability. QA/QC information is available upon request.

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METALS ANALYTICAL REPORT

CLIENT: Salina Airport Authority
PROJECT NAME AND #: 500494\ Pump House #305

SAMPLE TYPE: Air Lead

SAMPLE DATE: 5/18/94
ANALYSIS DATE: 5/25/94
REPORT DATE: 5/26/94
ANALYTICAL METHOD: SW846-3050\7420

LAB #	SAMPLE #	SAMPLE DESCRIPTION/LOCATION	RESULT	UNIT
940660	#1	Tim Dinkle - Personal air monitoring	<0.0362	mg/m^3
940661	#2	Field Blank	<5.0	µg
940662	#3	Field Blank	<5.0	µg
940669	QC	Reagent Blank	<5.0	µg
940670	QC	Control	94.8	% recovery

LABORATORY NAME: Ramsey-Schilling Analytical Laboratory, 6400 W. 95th St. Suite 200, Overland Park, KS 66212

ANALYTICAL TECHNIQUE: FAAS
DETECTION LIMIT: .5 mg/kg

ANALYZED BY: David Nold APPROVED BY: Carl C. Ramsey

Note: All wipe, paint and soil samples are analyzed using methods recommended by the Department of Housing and Urban Development. Samples other than these are analyzed using the most applicable analytical technique and method. This laboratory participates in the AIHA/NIOSH sponsored EL PAT program. This report shall not be reproduced except in full.
All sample batches have had quality control checks ensuring analytical reliability. QA/QC information is available upon request.

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METALS ANALYTICAL REPORT

CLIENT: Saline Airport Authority
PROJECT NAME AND #: 500494\ Pump House #305

SAMPLE TYPE: Air Lead

SAMPLE DATE: 5/19/94
ANALYSIS DATE: 5/25/94
REPORT DATE: 5/26/94
ANALYTICAL METHOD: SW846-3050\7420

LAB #	SAMPLE #	SAMPLE DESCRIPTION/LOCATION	RESULT	UNIT
940663	#4	Bret Harding-Personal air monitoring	0.0450	mg/m^3
940664	#5	Field Blank	<5.0	µg
940665	#6	Field Blank	<5.0	µg
940669	QC	Reagent Blank	<5.0	µg
940670	QC	Control	94.8	% recovery

LABORATORY NAME: Ramsey-Schilling Analytical Laboratory, 6400 W. 95th St. Suite 200, Overland Park, KS 66212

ANALYTICAL TECHNIQUE: FAAS
DETECTION LIMIT: .5 mg/kg

ANALYZED BY: David Nold APPROVED BY: Carl C. Ramsey

Note: All wipe, paint and soil samples are analyzed using methods recommended by the Department of Housing and Urban Development. Samples other than these are analyzed using the most applicable analytical technique and method. This laboratory participates in the AIHA/NIOSH sponsored EL PAT program. This report shall not be reproduced except in full.
All sample batches have had quality control checks ensuring analytical reliability. QA/QC information is available upon request.

RAMSEY•SCHILLING Consulting Group, Inc.

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METALS ANALYTICAL REPORT

CLIENT: Salina Airport Authority
PROJECT NAME AND #: 500494\ Pump House #305

SAMPLE TYPE: Air Lead

SAMPLE DATE: 5/20/94
ANALYSIS DATE: 5/25/94
REPORT DATE: 5/26/94
ANALYTICAL METHOD: SW846-3050\7420

LAB #	SAMPLE #	SAMPLE DESCRIPTION/LOCATION	RESULT	UNIT
940666	#7	Tim Dinkle - Personal air monitoring	0.00941	mg/m^3
940667	#8	Field Blank	<5.0	µg
940668	#9	Field Blank	<5.0	µg
940669	QC	Reagent Blank	<5.0	µg
940670	QC	Control	94.8	% recovery

LABORATORY NAME: Ramsey•Schilling Analytical Laboratory, 6400 W. 95th St. Suite 200, Overland Park, KS 66212

ANALYTICAL TECHNIQUE: FAAS
DETECTION LIMIT: .5 mg/kg

ANALYZED BY: David Nold APPROVED BY: Carl C. Ramsey

Note: All wipe, paint and soil samples are analyzed using methods recommended by the Department of Housing and Urban Development. Samples other than these are analyzed using the most applicable analytical technique and method. This laboratory participates in the AIHA/NIOSH sponsored EL PAT program. This report shall not be reproduced except in full.
All sample batches have had quality control checks ensuring analytical reliability. QA/QC information is available upon request.

APPENDIX G
CATHODIC PROTECTION PROPOSALS

CHRISTENSEN CORROSION CONSULTING

6901 N.LIBERTY ST. KANSAS CITY, MO 64118 816 436 8560

June 3, 1994

FAX MESSAGE

Mr. John Bednarczyk
BUCHER, WILLIS & RATLIFF
7920 Ward Parkway, Suite 100
Kansas City, MO 64114

COPY TO: MR. TIM ROGERS
SALINA AIRPORT DIRECTOR
SALINA, KANSAS

REF: CATHODIC PROTECTION: 12-25000 GAL. UNDERGROUND FUEL STORAGE TANKS. SALINA, KANSAS AIRPORT

Dear Mr. Bednarczyk:

I am pleased to confirm my May 23rd quotation for the referenced project as follows:

The design would be based on field acquired soil resistivities and onsite visit to observe general conditions and would include parameters of 2.0 Ma/Ft^2 of tank surface area and a design life of 20 years. The tank ground rods, ground wiring, conduit and other appurtenances in the immediate tank area will be included in the system. Interference provisions for a nearby natural gas pipeline and water line would be included in the design. Special consideration would be given to the unusual situation of the tanks being positioned partially under the pump and control building. The design would conform to the National Association of Corrosion Engineers standards as well as A.S.T.M. standards. Layout drawings, detail drawings, bill-of-materials and installation specifications would be included. The design would be prepared by an N.A.C.E. Corrosion specialist with a P.E. license.

Cost to design and install the cathodic protection system would be $12807.00. The price includes all materials, equipment, labor and engineering supervision to install the cathodic protection system per the design specifications as outlined above. Included also would be an operating manual, final report and certification. The installation would be supervised on site by an N.A.C.E. certified Corrosion Specialist with a professional license. Many states (Missouri included) require a Corrosion specialist rather than corrosion technicians, technologists or CP testers since these designations are easily obtained and they are not required to have the years of experience that a corrosion specialist acquires.

Materials and installation procedures would conform to the design and would include all new equipment including new cables. The existing cables and perhaps some other components may be in serviceable condition at this time but we feel it would be false economy to install new anodes, wiring, and rectifier and then depend on underground used cables for the next 20 years. A separate cable would be trenched to the nearby water line and an interference station installed to preclude future interference from the new system. Test portals would be installed inside the building, through the concrete floor, to allow for monitoring the cathodic levels at the inside tank perimeters. These test points are very important since there is presently no way to obtain tank-to-soil potential measurements inside the building. Future regulations will probably require these potential measurements at both ends of the tanks verses readings acquired outside on only one end.

It would be necessary for the Owner to provide electrical power connections to the new rectifier which would be installed at the old rectifier location near the breaker panel in the control building.

In the unlikely event that the drilling or trenching procedures would unearth hazardous soils which cause a cleanup situation and tank removal, we would require that materials and time spent on the project be reimbursed to our firm.

If we are awarded the project, anodes can be fabricated and onsite within two -three weeks after notice-to-proceed and the rectifier will require a minimum of four weeks to fabricate and deliver.

Thank you for allowing us to provide this quotation and if you have any questions or desire additional information, please do not hesitate to contact me.

Sincerely,

Robert Christensen

Robert Christensen, PE

FAX COVER SHEET

ROBERT CHRISTENSEN
CORROSION CONSULTANT
6901 N. LIBERTY ST.
KANSAS CITY, MO 64118
TELE NO: 816 436 8560

DATE: 06/03/94
FROM: BOB CHRISTENSEN
NO. OF PAGES INCLUDING COVER 3

TO: MR. JOHN BEDNARCZYK
COMPANY: BWR
FAX 363 ~~2696~~ 0027

MESSAGE:

ATTACHED FIND OUR CATHODIC PROTECTION QUOTATION FOR 12-25000 U.S.T. AT THE SALINA, KANSAS AIRPORT.

CHRISTENSEN CORROSION CONSULTING

6901 N.LIBERTY ST. KANSAS CITY, MO 64118 816 436 8560

June 13, 1994 FAX FAX FAX FAX

Mr. John Bednarczyk
BUCHER, WILLIS & RATLIFF
7920 Ward Parkway, Suite 100
Kansas City, MO 64114

REF: CERTIFICATION REQUIREMENTS - CATHODIC PROTECTION
U.S.T. - SALINA, KS AIRPORT

Dear Mr. Bednarczyk:

This letter is to state our compliance with existing state and federal regulations as qualified to design, install, test and certify the cathodic protection system proposed by us for the referenced U.S.T. at Salina. The installing firm, Northland Corrosion Services and myself, qualify under the Kansas Regulations per direct communication with Mr. Jaun Sexton of the Kansas Department of Health Environment (KDHE).

However, the cathodic protection system requires a final certification by KDHE which entails the completion of the attached form "UNDERGROUND STORAGE TANK SYSTEM UPGRADING/MODIFICATION APPLICATION".

The application is rather extensive and requests information such as ownership, legal description, type of product, etc., that I do not have available. The application must be accompanied by the cathodic protection design and an 8½" x 11" layout drawing of the proposed system.

I respectfully suggest that the formal application be completed by the owner or BWR. We can provide the pertinent data, design and layout sketch to accompany the application. We can have the design and layout sketch prepared by Thursday, June 16, 1994.

Please let me know how you wish us to proceed. In the meantime, I will began preparation of the design and sketch.

Sincerely,

Bob Christensen

Robert Christensen, PE

UNDERGROUND STORAGE TANK SYSTEM UPGRADING/MODIFICATION APPLICATION

[PETROLEUM PRODUCTS AND HAZARDOUS SUBSTANCES]

NOTE: Approval is required for the Upgrading/Modification of U.S.T Systems

SUBMIT TO: KANSAS DEPT. OF HEALTH & ENVIRONMENT
BUREAU OF ENVIRONMENTAL REMEDIATION
STORAGE TANK SECTION
FORBES FIELD, BLDG. 740
TOPEKA, KANSAS 66620

Please Print Clearly or Type Owner I.D._____ Facility I.D._____
(IF KNOWN)

Proposed Upgrading/Modification Date _____

I. FACILITY INFORMATION

A. Facility Name_____

B. Address_____
(street) (city) (state) (zip)

C. Contact_____ Phone(_____)_____-_____

D. Legal Location_____

E. Section_____ 'Township_____S 'Range_____E/W County_____

II. TANK OWNER INFORMATION

A. Owner Name_____

B. Address_____
(street) (city) (state) (zip)

C. Contact_____ Phone(_____)_____-_____

III. INSTALLER INFORMATION (GENERAL CONTRACTOR)

A. Contractor Name_____

B. Address_____
(street) (city) (state) (zip)

C. Contact_____ Phone(_____)_____-_____

IV. TANK UPGRADE / MODIFICATION INFORMATION

(any release of regulated substance or removal of an underground tank must be reported to the department in accordance with state and federal regulations)

A. PLEASE DESCRIBE ALL TANK SYSTEMS TO BE UPGRADED OR MODIFIED

	TANK____	TANK____	TANK____	TANK____
Tank Capacities				
Product Stored				
Tank Material				

Fill out all applicable sections for the upgrading to be performed at this facility. Be certain that the application clearly describes which tanks will be upgraded.

B. CORROSION PROTECTION

☐ 1. Cathodic Protection (Describe method and provide design and construction details from a corrosion expert)

☐ 2. Cathodic protection is not necessary (Attach test results. Maintain test results for life of U.S.T. System).

☐ 3. Internal Lining (Attach details for products to be used and the lining specifications.)

Describe the work to be performed _____

_____

_____

C. SPILL AND OVERFILL PREVENTION

☐ 1. Describe spill prevention equipment to be used (manufacturer, brand and model no.). _____

_____

☐ 2. Describe the overfill prevention equipment to be used (manufacturer, brand and model no.). _____

_____

D. LEAK DETECTION FOR TANKS

Release detection methods must meet the requirements of 40 CFR parts 280.41 and 280.43. Please describe the release detection method with adequate details so compliance with the regulations can be determined. (manufacturer, brand and model no.) _____

_____

_____

V. BURIED LINE UPGRADE / MODIFICATION INFORMATION

A. LINE DETAILS (PRODUCT LINES)

Provide information about the lines to be upgraded and which tank each is attached to as described in section IV.

	TANK____	TANK____	TANK____	TANK____
Line Material				
Line Diameter				
Line Length				

Fuel Distribution System (safe suction, conventional suction or pressure)

Dispenser type				
Leak Detector type				

B. LEAK DETECTION FOR LINES

Describe the type of line leak detectors to be added to each set of fuel distribution lines. Release detection methods must meet the requirements of 40 CFR parts 280.44.

_____

_____

_____

_____

C. CORROSION PROTECTION FOR LINES

☐ 1. Cathodic Protection (Describe method and provide design and construction details from a corrosion expert)

☐ 2. Cathodic protection is not necessary (Attach test results. Maintain test results for life of U.S.T. System).

Describe the work to be performed_____

_____

_____

VI. SYSTEM TEST

A. SYSTEM TIGHTNESS

A tightness test must be performed within 30 days of upgrading any fuel system, if the integrity of that system may have been compromised by the upgrade. (For details see the instruction manual). Only the portion of the system upgraded must be tested. An automated monthly monitoring device may be substituted for a tightness test.
Name test method _____.

B. CATHODIC PROTECTION UPGRADES

If Cathodic protection system has been installed, a system test must be performed. Test stations must be provided.

Name test method _____.

VII. APPLICANTS CERTIFICATION

I certify that the information above is true to the best of my knowledge and that all equipment will be installed in compliance with the manufacturers' installation instructions if applicable. The installation will be performed in compliance with all federal, state, and local regulations.

_____ _____
Installer's Signature Date

_____ _____
Owner's Signature Date

VIII. APPROVAL

_____ _____
Reviewer's signature Date

2/91

TANKNOLOGY™

TECHNOLOGY FOR TANKS AND THEIR ENVIRONMENT

CATHODIC PROTECTION FOR UST's
TCI/EZ-SS SYSTEM PROPOSAL

PROPOSAL NO. BWR-490160-1 DATE: June 9, 1994

TO: Bucher, Willis & Ratliff
7920 Ward Parkway - Suite 100
Kansas City, MO 64114

Attention: Mr. John Bednarczyk

(hereinafter called the "Purchaser")

TANKNOLOGY CORPORATION INTERNATIONAL (hereinafter called "TCI") proposes to provide specialized C.P. engineering services, labor and equipment for a TCI EZ-SS SYSTEM(S) of cathodic protection as set forth herein.

1.0 LOCATION/STRUCTURE: The Purchaser stipulates the following to be the location and general description of the UST System(s) to be cathodically protected by the proposed TCI EZ-SS SYSTEM(S):

Twelve 25,000-gallon (10.5' diameter x 39' long) steel USTs and associated (connected) pipes at the fueling pump house located at the Salina, Kansas Airport.

2.0 C.P. ENGINEERING SERVICES: TCI shall provide the services of experienced cathodic protection technicians to accomplish the following:

- Pre-Installation Site Survey
- Design/Layout of TCI EZ-SS SYSTEM
- Pre-Installation Review of Work (with Purchaser)
- Supervision of Installation Work
- Testing of Completed Installations
- Energizing & Adjusting Completed System
- Final Report with System Layout Schematics
- Operating & Maintenance Manual

Technical services shall be performed under the supervision of a Registered Professional Engineer and/or NACE certified "Corrosion Specialist." All work shall be done in strict accordance with applicable Standards & Recommended Practices as established by NACE, API, STI, NFPA and ASTM, to meet EPA and State requirements.

3.0 EQUIPMENT: TCI shall provide specialized cathodic protection equipment which consists of TCI "EZ-SS" anodes, TCI "Sentinel" rectifier/transformer control unit(s), TCI "Watch Guard" reference electrodes, TCI "T-Box", flush mount test station receptacles and other associated equipment as listed below.

The design of this system is dependant upon specific test data obtained at the site. All system will utilize four (4) TCI standard constant current auto controlled "Sentinel" rectifier units. The number of EZ-SS anodes per site will not be less than 24, based on actual requirements as determined at the site prior to the start of installation. Each system will consist of:

4	-	Rectifier Control Unit: Sentinel
4	-	Reference Electrode: Watch Guard
24 (min.)	-	Anodes: TCI EZ-SS-64
8	-	Test Station Boxes: T-Box
Job	-	All necessary wire, splices, conduit, clamps, etc. for a complete system.

Major system components are shown on attached drawings, as follows:

Dwg. Nº CP-1013-A . "WATCH GUARD" Reference Electrode
Dwg. Nº CP-1014-A . "SENTINEL" Rectifier Cabinet
Dwg. Nº CP-1015-A . "SENTINEL" Rectifier Unit
Dwg. Nº CP-1016-A . "EZ-SS" Anode Installation
Dwg. Nº CP-172-A . . "T-BOX" Test Station

Note: Tanks (ends within central area) are situated beneath the Fueling Pump House building. Therefore, this proposal is contingent on:

(1) Being able to use existing negative (-) wiring to accommodate connection of tanks to the negative terminal of the rectifier/control unit.

(2) All tanks are electrically bonded together to insure continuity throughout the UST facilities to be protected.

(3) Existing 6" lines on each side of the UST facilities are to be electrical separated (valves removed) from the UST facilities and abandoned. It is understood that these abandoned lines may be subject to corrosion attach and, therefore, may not be suitable for any future reinstatement.

4.0 INSTALLATION: This proposal includes labor to install the SYSTEM. The System shall be installed by qualified TCI Technicians, in compliance with all applicable codes and regulations. The installation shall be made in accordance with owner approved TCI standard drawings and installation instructions.

In the event that the owner/purchaser cannot provide the precise location of the underground fueling facilities (i.e., tanks, piping & electrical) to TCI, appropriate safety tag and lockout precautions will be enacted.

5.0 STANDARD EQUIPMENT: Miscellaneous fittings, fasteners, conduit, condulets, clamps, wire, splice kits, junction boxes, masking tape, patch materials, etc., are to be provided by TCI as part of this proposal. All standard equipment so provided shall be new and meet with applicable building codes. AC power service to the rectifier control unit is to be provided by the Purchaser, as per instruction from TCI. This service shall be standard 110 volt, single phase, 60 Hz A.C. available from a circuit breaker dedicated to the CP system.

6.0 PRICE: The lump-sum price for the proposed TCI / EZ-SS SYSTEM as described herein is **$26,440.00** (U.S. Dollars), F.O.B.: Job Site.

This price includes all living, travel and incidental expenses incurred by TCI's engineers/technicians while executing the proposed work. The price also includes the cost of drawings, reports and manuals, and includes use of specialized test instruments and laboratory tests, as may be needed to accomplish the proposed work. No additional charges will be made by TCI. However, the above price does not include any duties or applicable sales or use taxes, nor does the price include any fees, permits, licenses or the like, which shall be borne by the Purchaser.

7.0 TERMS: Upon completion of the work, TCI will submit an invoice to the Purchaser in the full amount of this contract. Terms are net 30 days after the date of this invoice.

In the event payment is delayed beyond 30 days, the Purchaser agrees to pay a penalty in the amount of 1% of the contract amount per month until the full contract account is paid.

8.0 SCHEDULE: The Purchaser (and/or Owner) and TCI shall, within 30 days after acceptance of this Proposal, develop a mutually acceptable work schedule. However, in no event, shall the commencement of the Engineering Services (Section 2.0, above) be more than 60 days after the Proposal acceptance date.

9.0 WARRANTY: All equipment provided by TCI as part of this proposal is warranted against defective manufacturing workmanship or materials for a period of one year after final acceptance of the installation. This warranty, unless otherwise amended in writing by TCI, does not extend to other miscellaneous products which may be used in conjunction with the TCI / EZ-SS SYSTEM.

TCI shall be immediately notified of any claim in writing and given adequate and reasonable information and opportunity to evaluate the claim and recommend appropriate corrective action. Any notice to be given hereunder may be given orally provided that within not more than five days thereafter it is fully confirmed in writing.

In the event corrective action is deemed to be TCI's responsibility, parts or replacement units for necessary repairs shall be provided by TCI, at no cost to the Purchaser (or Owner). Although no billing will be submitted on such parts or replacement units, cost shall be based as per standard pricing schedules. Materials and replacement equipment plus reasonable associated labor costs shall not, in aggregate, exceed the total lump-sum price of this proposal/contract. TCI's total liability under this warranty is limited to the proposal amount and the warranty does not extend to any subsequent or consequential damages or claims, whatsoever.

The description of the structures to be cathodically protected does not provide a comprehensive evaluation of the structures' present condition nor loss from corrosion. Therefore, TCI DOES NOT WARRANT THE STRUCTURAL INTEGRITY OF THE STRUCTURES NOR THAT THE APPLICATION OF THE C.P. ENGINEERING SERVICES AND EQUIPMENT DESCRIBED IN THIS PROPOSAL WILL INSURE STRUCTURAL INTEGRITY NOR PRECLUDE FAILURE AND/OR LEAKS DUE TO CORROSION IN THE FUTURE.

10.0 INSURANCE: Upon acceptance of this proposal, at the request of the Purchaser, TCI will provide the Purchaser with a Standard Certificate of Insurance which delineates its normal insurance coverage, applicable to the proposed work (Workman's Compensation, General Liability and Auto Liability). Such insurance is continuously in force and is characteristically applicable to the technical/engineering services proposed. In the event the Purchaser requires additional or special insurance coverage, over and above TCI's normal coverage, applicable short term additional coverage will be obtained for this purpose by TCI, the premium cost of such additional insurance to be borne by the Purchaser. In the event the Purchaser requires a Performance Bond, such a bond shall be secured by TCI. Cost of the bond shall be borne by the Purchaser.

11.0 ACCEPTANCE: This proposal is subject to acceptance by the Purchaser within thirty days from the date appearing at the top of this proposal and thereafter at TCI's option, and when so accepted and thereafter approved by an authorized official of TCI, it shall constitute a contract between the Purchaser and TCI, and shall be binding upon the heirs, executors, successors in interest, assigns and representatives of both parties. No charges, modifications, or revision of this proposal, once accepted by Purchaser and approved by TCI, shall be valid unless in writing and signed by TCI.

12.0 LAW GOVERNING: This contract may not be modified or terminated orally, and shall be construed and interpreted according to the law of the State of Texas.

13.0 FORCED MAJEURE: The furnishing of the services and equipment under this contract may be subject to delay caused by war, accidents, strikes, inability to secure labor or raw materials, fires, embargoes, delays in transportation, governmental restrictions of any kind, riots, civil disorders, or any other cause whatsoever outside the control of TCI. If such delay shall occur and shall continue for more than thirty days, this contract

may thereafter be canceled by either party. However, the Purchaser shall be liable for payment of all work done by TCI up to, and including, the day of cancellation.

14.0 LIMITATION OF LIABILITY: ANY LIABILITY OF TANKNOLOGY CORPORATION INTERNATIONAL (TCI) IN CONNECTION WITH THE RENDERING OF SERVICES OR PROVIDING EQUIPMENT HEREIN DESCRIBED SHALL BE LIMITED TO THE AMOUNT OF COMPENSATION RECEIVED BY TANKNOLOGY CORPORATION INTERNATIONAL FOR PERFORMING THE SERVICES HEREIN DESCRIBED. EXCEPT AS ABOVE PROVIDED IN THIS SECTION 14.0 AND SECTION 9.0, ABOVE, THERE IS NO WARRANTY, REPRESENTATION OR CONDITION OF ANY KIND, EXPRESSED OR IMPLIED, WITH RESPECT TO THE SERVICES RENDERED AND/OR EQUIPMENT PROVIDED PURSUANT HERETO.

15.0 GENERAL: This proposal is subject to the terms and conditions set forth above which are hereby made a part of this proposal and when accepted by the Purchaser and approved by an authorized official of TCI, this proposal then becomes a binding contract between TCI and the Purchaser.

Proposal made by:

PROPOSAL NO. BWR-490160-1

Joseph A. Lehmann
Vice President, Corrosion Protection
(NACE Certified Corrosion Specialist)

June 9, 1994

PURCHASER ACCEPTANCE

Bucher, Willis & Ratliff
Purchaser

Authorized Official

Title

Date

cc: Tim Rogers, Executive Director
Salina Kansas Airport

TANKNOLOGY™

TECHNOLOGY FOR TANKS AND THEIR ENVIRONMENT

CORROSION PROTECTION for UNDERGROUND STORAGE TANKS

(UST - Cathodic Protection)

EZ-SS System .... Designed Specifically for USTs

1.0 UST Design Concept:

During 1968-1980 many service stations were retrofitted with "old fashion" cathodic protection systems (large cast-iron anodes, No. 8 AWG-HMWPE cable trenched below pavement, no permanent reference electrodes, no test stations, etc., etc.). It was common practice to shut stations down for 3 or 4 days to accommodate installation work. Large excavations (for anodes and cable) resulted in pavement settling problems .... which in turn caused damage to the cable insulation .... and system failure. This caused repeated store shut downs for repairs. Rectifier control units did not have the advanced electronics available today. Many rectifiers were "over-designed" complex "star-war" gadgets .... very difficult to operate and maintain. Testing techniques were, at best, adaptions from the "pipeline industry" (where CP was started).

In the late 1980's it became evident that UST - CP was going to be big business. A new improved approach was needed.

ICI (second only to DuPont in size and technology), being a leader in electro chemistry, established an engineering group to study the UST needs. It became evident that small, compact system components would enable engineers to design better CP for USTs. ICI developed a small, high efficiency, long-life anode .... as did Dow Chemical, Eltech and others. Similarly, new rectifier designs were established .... new electrical cables and splice techniques were developed .... special anode backfills, test stations, reference electrodes, and test instruments emerged. All such innovations or adaptations were specifically for UST facilities .... so CP could be installed easier, better and last longer under a wide range of physical and environmental conditions.

Tanknology's cathodic protection (solely for USTs) is an outgrowth of this initial work. TCI is the leader in UST corrosion control, ... providing the most advanced, proven technology. The EZ-SS system is specifically designed for USTs. It's easy to install and easy to operate and maintain.

The TCI EZ-SS System can be installed in one day, without shut-down. We re-

check systems 3 times after installations are completed. Most importantly .... if anything does go wrong (due to defective materials or workmanship), we correct it without cost to the UST owner .... and we don't make a bid deal about it. Frequently customers are unaware that we discovered a problem and corrected it .... just as a matter of our normal business.

2.0 Wiring Size & Insulation:

Considering the D.C. electrical characteristics of UST/CP systems, it is not necessary to employ large cables (traditionally used on pipeline or marine CP systems). UST current requirements are relatively low (1.5 to 6.0 amperes, maximum). Most systems employ an anode/wire loop configuration .... and seldom use more than 800 feet of wire. Therefore, maximum current would be 3.0 amperes going a maximum of 400 feet. Wire IR drop is not a concernable problem. Using No. 14 AWG stranded wire (resistance = 3.05 ohms per 1,000 feet @ 20°C with current rated at 15 amperes, @ 90°C, buried) having Exane insulation + nylon jacket, the maximum IR drop is 7.6 volts .... typical IR drop during normal (polarized) operation is 1.8 volts. Moreover, placing the wire in a 3" deep x ¼" wide pavement saw-cut, reduces excavation and installation time .... resulting in NO SHUT DOWN of store operations. Patched pavement is not a problem. Exane (vs HMWPE) is a superior insulator and can withstand a wide variety of hydrocarbons, acid, alkali, solvents, halogens, etc. The outer jacket (nylon) does not adhere to pavement patch or grout materials .... allowing for expansion and contraction, without binding or damage.

Both the wire size and insulation/jackets are ideal for UST CP installations.

TCI employs a loop configuration for anode distribution around tanks. Current is supplied to anodes from two possible directions. In our judgement, single wires to each anode is a very unnecessary redundancy.

3.0 Wire Splices:

All direct burial (soil/pavement) connections are made with 3M (coated) wire nuts. The nylon wire outer jacket is removed for at least 2" back from the point of connection, to expose the Exane insulation .... allowing for a bond with splice encapsulation epoxy. The entire connection is encapsulated with ("Epon") epoxy, within a small sealed plastic bag. In severe environments (water), the finished assembly (epoxy encapsulating bag) is placed within a second ("Z-Lock" type), sealed plastic bag. This procedure eliminates any possibility of exposed metal at the connection.

Upon completing the connection, wires are coiled into the open excavated (augured) hole, to allow slack for expansion, contraction, and settlement. All connections are at least 6" blow finished pavement level.

4.0 Anodes:

The EZ-SS system employs 1" diameter canister anode assembly. These are installed in 2"-3" augured holes (8'-12' deep), backfilled with coke breeze. The anode element is ⅛" diameter tri-metal rod with a mixed metal oxide outer layer. We seldom exceed 25% of

the anodes maximum current output rating for a 20-25 year life. Consequently, the anodes are the most permanent part of the EZ-SS system. They could last 50 to 75 years, or more.

5.0 Rectifier Control Units:

The "Sentinel" Rectifier Control Unit is designed specifically for UST Systems. It is automatically controlled (constant current) and is equipped with all the necessary appurtenances:

- Calibrated Shunt
- Overload Circuit Breaker (Switch)
- Surge Suppressors
- Voltmeter/Ammeter
- (+) and (-) Out Put Terminals
- Current Limiting Control Circuit
- Ground and Reference Electrode Terminals
- "Red" and "Green" Alarm Lights (external)
- Alarm Light Adjustment Circuit
- Output Control Adjustment Circuit
- NEMA-3R Cabinet (with lock hasp)
- Hi - Lo Transformer Taps (or switch)

The unit is designed to be reliable, simple to operate and maintenance free.

6.0 Reference Electrodes:

Permanent (Cu-Cu SO_4) "Watch Guard" Reference Electrode(s) are provided to monitor the voltage (potential) between the UST facilities and earth. The reference electrode is used to observe the degree of protection being achieved .... both at start-up .... and periodically when the system is maintenance checked. The change in reference electrode potential is noted while the system is turned "OFF" and "ON." The permanently installed reference electrode accommodated consistency in making this test and serves as an added "tool" for providing adequate protection.

7.0 Test Stations:

"T-Box Test Stations" are high impact, tubular, plastic inserts installed within drilled (3") holes in the pavement. They are equipped with side stud-bars to prevent rotation and screw-in plastic lids (key-slotted). Several test stations are usually provided (depending on UST system size and configuration) for each site. The test stations have two functions:

- House sub-surface wires (or connections) that need to be accessible for testing or electrical bonding requirements.

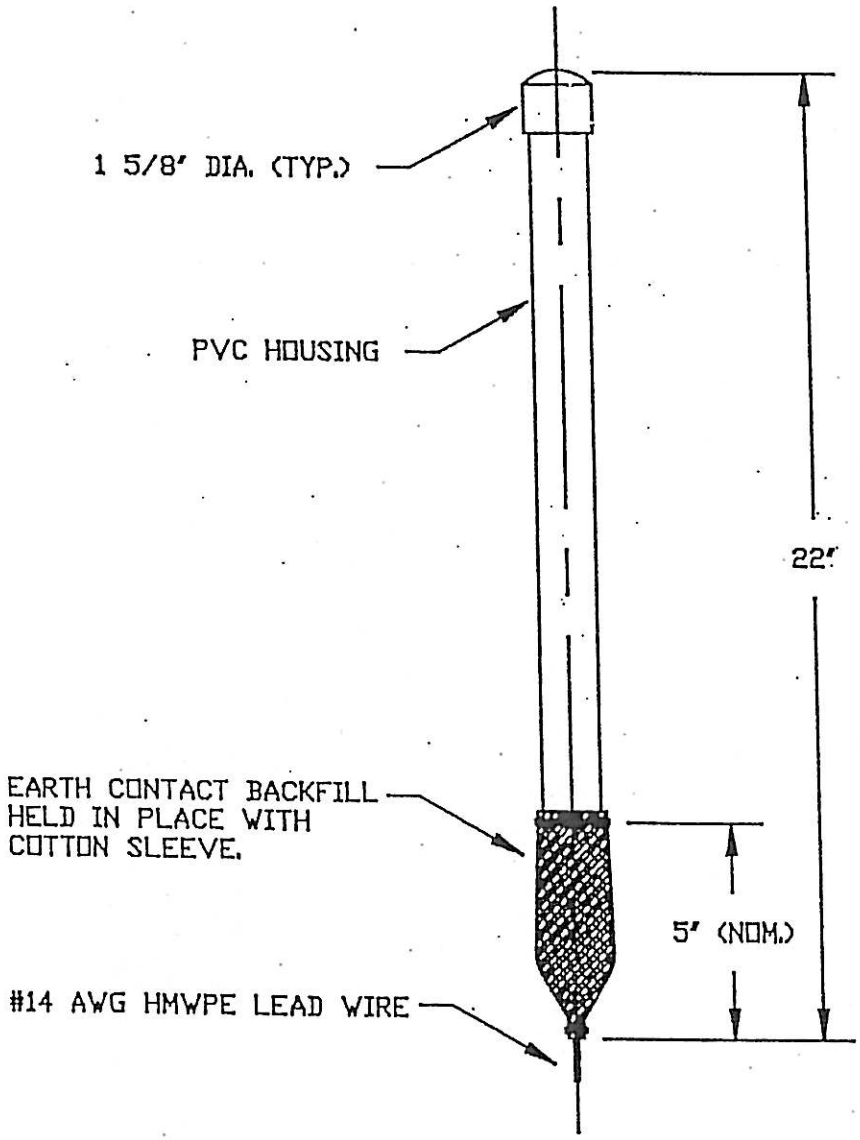
- Permit contact with the soil (below pavement) to accommodate periodic testing of the protective system.

8.0 Technical Services:

Tanknology's EZ-SS Systems include a wide variety of technical services including:

- Site Surveys
- System Designs
- Permit Application Documentation
- Installation Supervision
- Testing and Commissioning
- Technical Reports
- Periodic Maintenance/Tests
- Operations Assistance

These services are provided by Registered P.E.'s, NACE Corrosion Specialist, Technologists and Technicians, TCI trained Installation Crews and State Licensed Specialists, as required by the Governing Agency. The Federal EPA regulations have provisions for such qualifications .... and many States require specific testing and licensing of both individuals and corporations.



REVISED

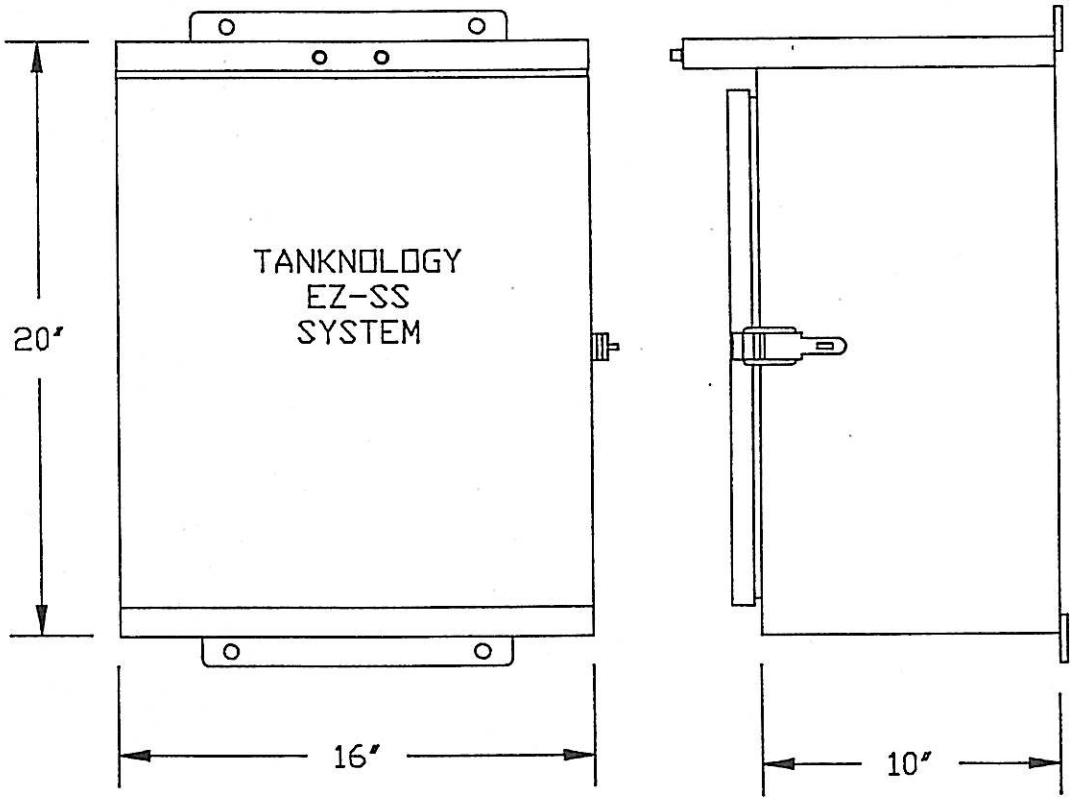
ELEMENT TYPES
T.C.I.-CUG=Cu/CuSO4
(saturated, gelled)

TERMINATION TYPES
T.C.I.-SW-50' #14AWG
HMWPE LEAD WIRE.

TANKNOLOGY CORP. INTER.
"WATCH GUARD"
REFERENCE ELECTRODE

TANKNOLOGY SERVICES
5225 HOLLISTER
HOUSTON, TEXAS 77040

DRAWING #			
CP-1013-A	TREY C.	NOT TO SCALE	3/23/91



NEMA-3A CLASSIFIED CABINET.

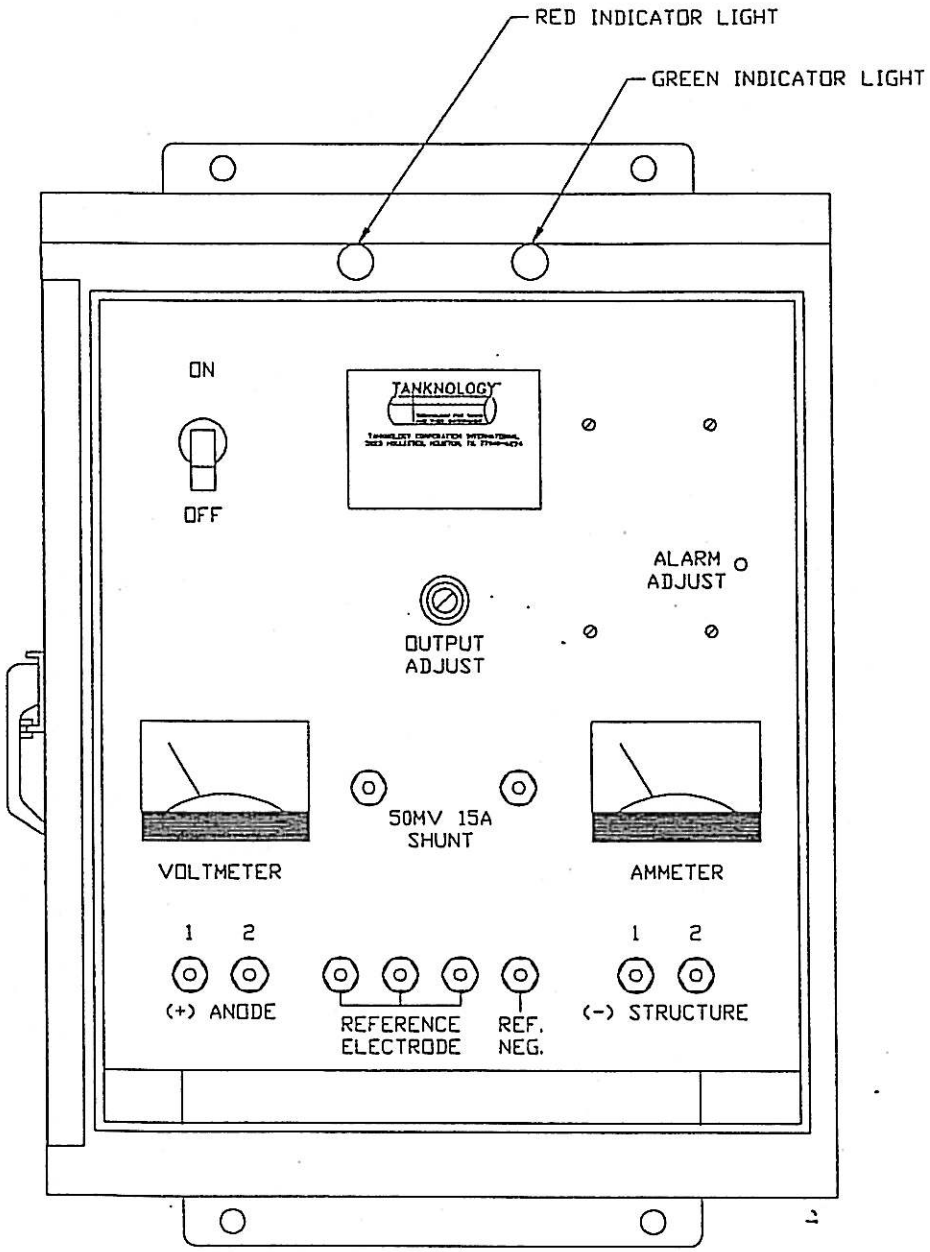
A.C./D.C. KNOCK-OUTS ON BOTTOM/REAR OF CABINET.

REVISED

TANKNOLOGY CORP. INTER.
"SENTINEL" RECTIFIER CABINET

TANKNOLOGY SERVICES
5225 HOLLISTER
HOUSTON, TEXAS 77040

DRAWING #			
CP-1014-A	TREY C.	NOT TO SCALE	3/24/91



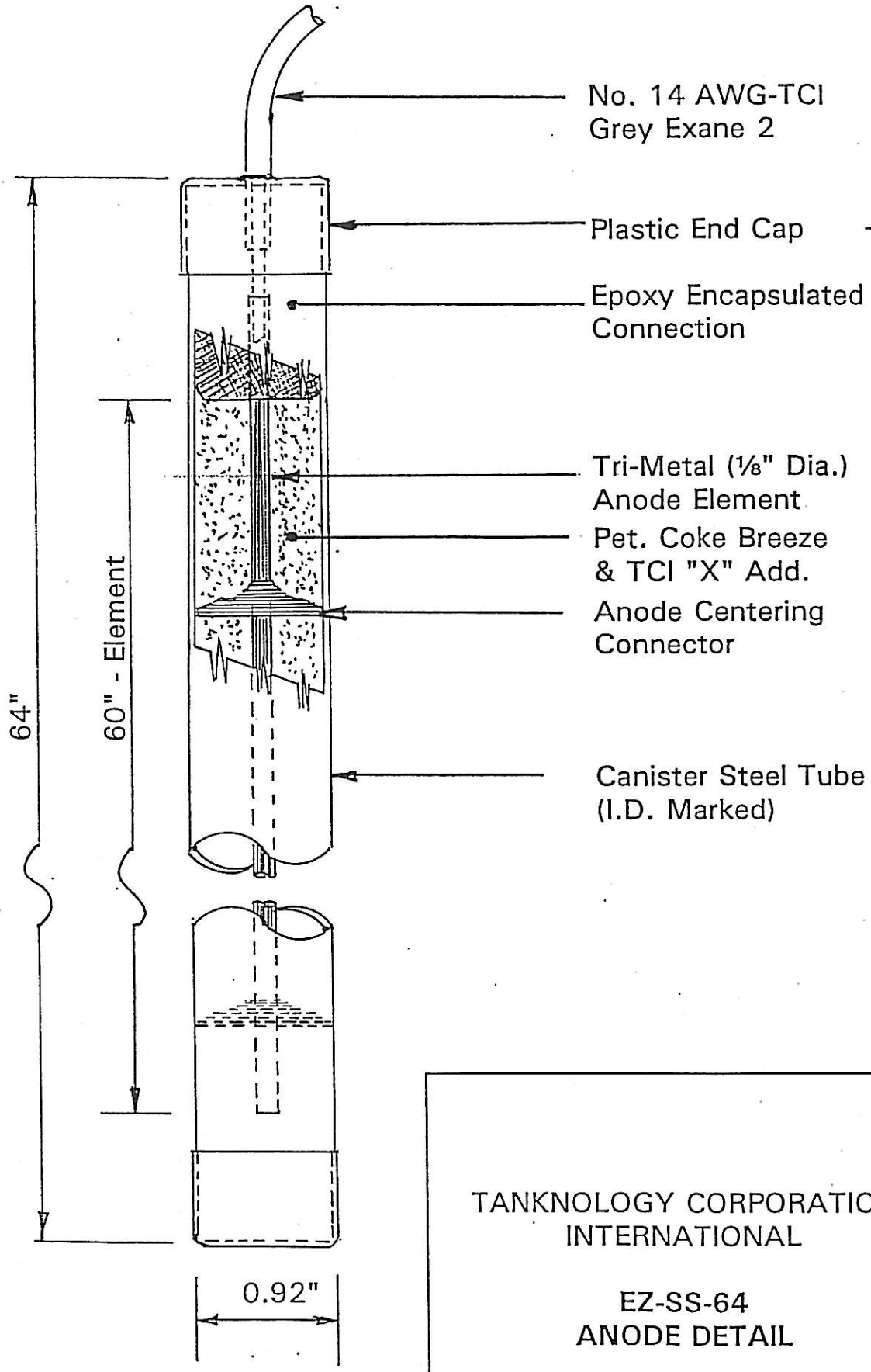
REVISED

NEMA-3A CLASSIFIED CABINET.
15 AMP STANDARD 115 VOLT,
60 Hz, SINGLE PHASE SERVICE
REQUIRED.

TANKNOLOGY CORP. INTER.
"SENTINEL" RECTIFIER UNIT

TANKNOLOGY SERVICES
5225 HOLLISTER
HOUSTON, TEXAS 77040

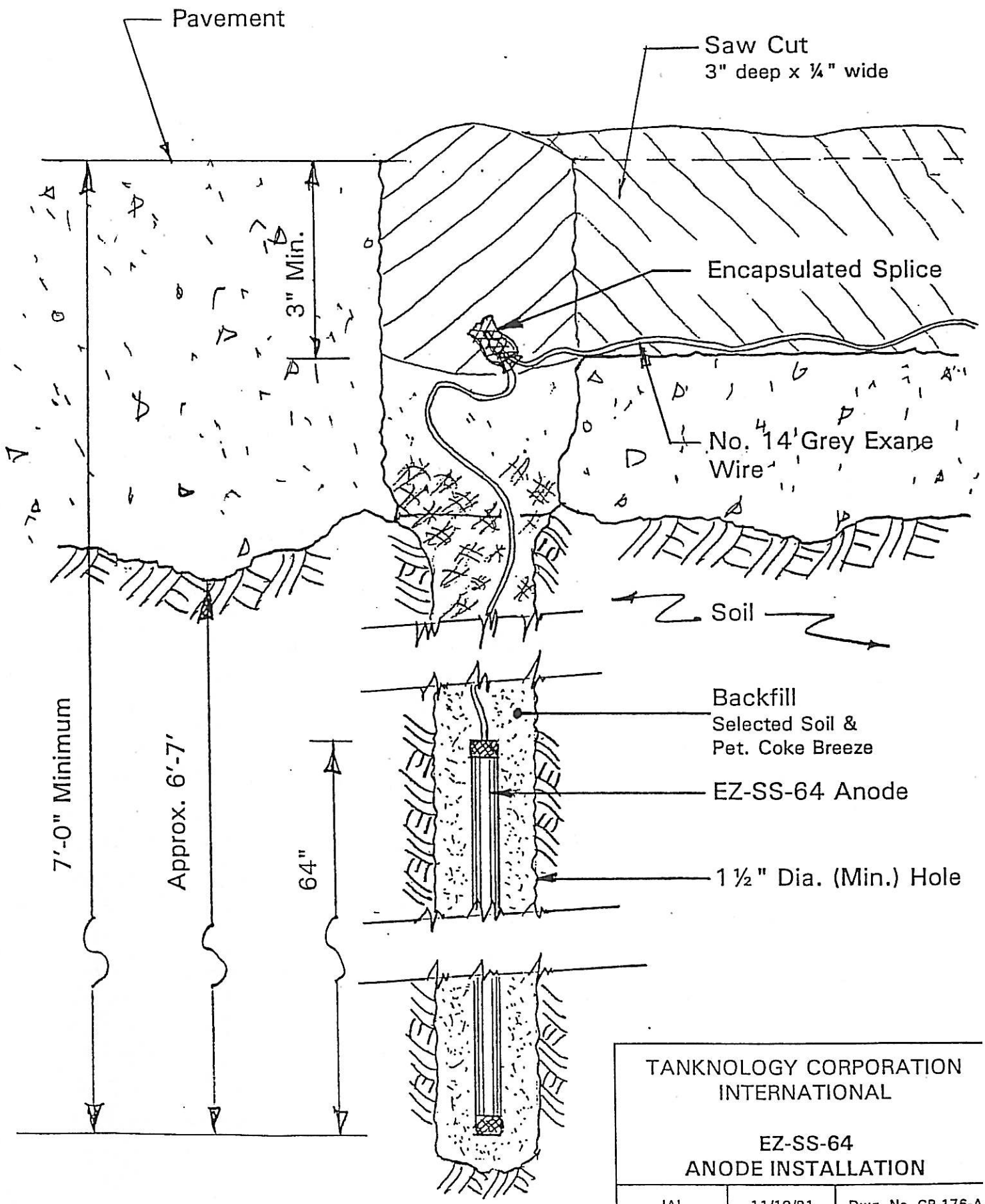
DRAWING #			
CP-1015-B	TREY C.	NOT TO SCALE	5/20/93



TANKNOLOGY CORPORATION
INTERNATIONAL

EZ-SS-64
ANODE DETAIL

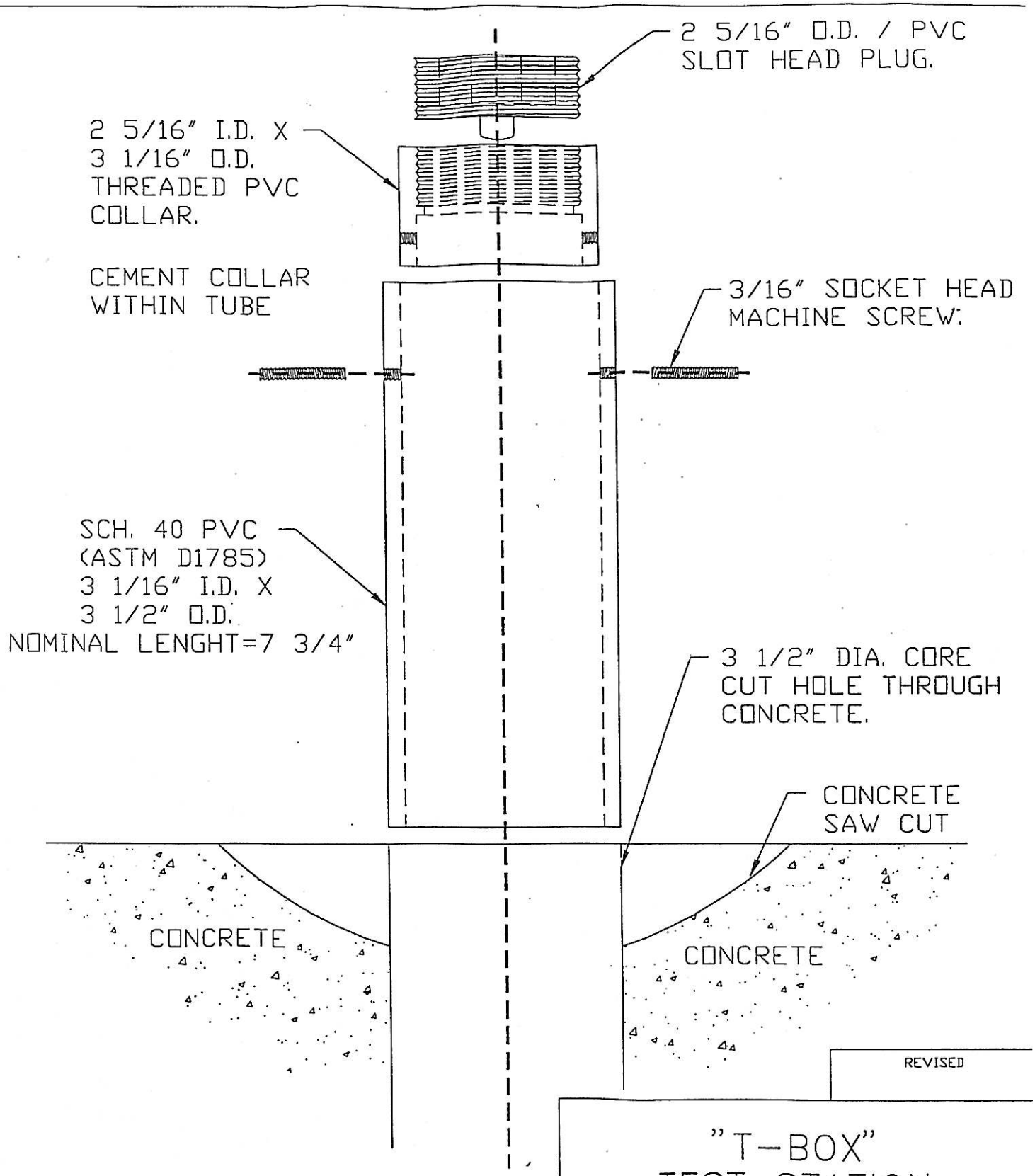
JAL	11/10/91	Dwg. No. CP-175-A



TANKNOLOGY CORPORATION INTERNATIONAL

EZ-SS-64
ANODE INSTALLATION

JAL	11/10/91	Dwg. No. CP-176-A



REVISED

"T-BOX" TEST STATION

TANKNOLOGY SERVICES
5225 HOLLISTER
HOUSTON, TEXAS 77040

DRAWING #			
CP-172-A	TREY C.	NOT TO SCALE	3/19/93

May 27, 1994

Mr. Don Kneubulhl
Salina Airport Authoity

FAX 913-827-221

RE: Corrosion Control Pump House #305
12, 25,000 gallon UST's

Visual Inspections, Inc., for the lump sum consideration of $7880.00 will install a Cathodic Protection system that will afford adequate levels of corrosion control to the twelve UST's located at Pump House #305.

The system will consist of:

1 ea.....90 volt 20 amp, WEST rectifier
12 ea.....3"X60" NA treated graphite anodes
480 lb.....Metal'l Grade Coke Breeze
12 ea.....4 component taped splices
500 ft.....#4 HMW/PE cathodic protection cable (+)
existing (-) cable will be utilized

(+/- misc. materials as required)

In addition to the installation, Visual will conduct a post installation survey to ascertain correct operation of the system and make a joint interference test with KPL Gas Service so as to resolve any problems associated with the systems operation and their natural gas line.

The Authority will be responsible for placing AC service at a point designated by Visual for the rectifier unit.

Visual Inspections, Inc. is licensed by KDHE. We have over 50 years of corrosion control experience and are members of NACE, formerly, National Association of Corrosion Engineers.

References are available on request.

Rectifier Delivery is 6 to 8 weeks, Visuals' scheduling is currently 10 to 12 weeks. We have open dates in August and September, otherwise none until 1995.

TO: John Bedharczyk
Bucher, Willis and Ratliff

FAX 1-816-363-0027

From: Ed Sack
Visual Inspections, Inc
P.O. Box 596
Independence, KS 67301
1-800-352-2496

FAX 1-316-325-5318

NUMBER OF PAGES INCLUDING COVER SHEET 2

Copy of information sent to Don Kneubulhl

APPENDIX H
SAA REQUEST FOR PROPOSAL

Salina Airport Authority

Salina Municipal Airport / Industrial Center

Chairman Bob E. Ott | Vice-Chairman Dorothy W. Lynch | Secretary Richard A. Renfro | Treasurer Charles Stevens, Jr. | Assistant Secretary / Treasurer Joseph M. Ritter

Executive Director: Timothy F. Rogers, A.A.E. Operations Director: Donald C. Kneubuhl Board Attorney: L.O. Bengtson

May 31, 1994

Mr. John Bednarczyk, P.E.
Bucher, Willis & Ratliff
7920 Ward Parkway, Suite 100
Kansas City, MO 64114

VIA: Telephone Facsimile

Dear John:

Please submit a proposal for an engineering services agreement for services associated with repair and modifications to Pumphouse #305. The scope of services should address the following:

Design Services

1. Design of two environmental pads for transport unloading and refueler loading.

2. Piping modifications for transport unloading lines and refueler loading lines. The design should include racks to hold all hoses and nozzles at the environmental pad. Each tank discharge line is to be metered. Tanks to be in service are tanks #1, #2 and #3 (Flower) and tanks #10, #11, and #12 (Moore's).

3. Transport and refueler grounding at the environmental pads.

4. A sump system for the manway for each tank.

5. An overfill/spill protection system. The alarm system should be visual and aural.

6. An oil and water separator servicing the building and environmental pad. The system should incorporate the use of the existing 2,000 gallon overflow tank on the east side of the building.

7. Exterior lighting for nighttime operations. The areas of the environmental pads are of primary concern.

8. Automatic tank gauges for eight (8) tanks. (Seven (7) 25,000 gallon and one (1) 2,000 gallon).

9. The necessary filter vessel and tank cleaning to place tank #1 (Avgas) and tank #3 (Jet A) into service. These tanks were previously used for Jet A storage.

3237 ARNOLD • SALINA, KS 67401-8190 • Off: (913) 827-3914 • Fax: (913) 827-2221

Preparation of Construction Plans, Specifications, Bidding, and Construction Supervision Services

1. Environmental pads (2)
2. Manway sumps (12 tanks)
3. Tank piping modifications (6 tanks)
4. Overfill/Spill protection (6 tanks)
5. Oil and water separator.
6. Exterior lighting.
7. Transport and refueler grounding at environmental pads.
8. Automated tank gauges. (8 tanks)
9. Tank and filter vessel cleaning.

As you can see by the differences between the requested design and bidding services, the Authority desires a complete design for all repairs and modifications, but will phase in actual construction as necessary.

At the present time, the Authority's two FBO's need tanks #1, #2, #3 (Flower), #10, #11, and #12 (Moore's) in service. All other tanks should be equipped to permit them to be classified as temporarily out of service.

Please submit an initial proposal to me no later than June 14. As you prepare your proposal, please contact me if you have any questions.

Sincerely,

SALINA AIRPORT AUTHORITY

Timothy F. Rogers, A.A.E.
Executive Director

TFR/cl

Salina Airport Authority
Salina Municipal Airport / Industrial Center

Dragun Corporation
Environmental Advisors

30445 Northwestern Hwy., Suite 260, Farmington Hills, MI 48334 • Phone: 248.932.0228 • Fax: 248.932.0618

February 5, 2014

Mr. Timothy F. Rogers, Executive Director
Salina Airport Authority
3237 Arnold Avenue
Salina, KS 67401

Mr. Carl B. Muhs, President
AvFlight
MBS International Airport
8430 Garfield Road
Freeland, MI 48623

SUBJECT: Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

Gentlemen:

The Dragun Corporation (Dragun) is pleased to provide our report titled, "Phase II Environmental Site Assessment, Pump House 305, Salina Regional Airport Industrial Center, Salina, Kansas" for your records. This report presents the findings of Dragun's assessment of the Property. Please contact one of us at (248) 932-0228 if you have any questions regarding this report.

Sincerely,

DRAGUN CORPORATION

Mark E. Resch, L.G.
Geologist

Jeffrey A. Bolin, CHMM
Senior Vice President – Technical Operations

MER/JAB/amr

Attachments

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas

Prepared for

Salina Airport Authority
3237 Arnold Avenue
Salina, KS 67401

and

AvFlight
MBS International Airport
8430 Garfield Road
Freeland, MI 48623

Prepared by

DragunCorporation
Environmental Advisors

30445 Northwestern Highway, Suite 260
Farmington Hills, Michigan 48334
Phone: (248) 932-0228
Fax: (248) 932-0618

Project #30425-02

Febraury 2014

EXECUTIVE SUMMARY

The information presented in this summary should be read in conjunction with the entire report to obtain a full understanding of the issues and opinions presented.

The Salina Airport Authority (Owner) and AvFlight (User) retained The Dragun Corporation (Dragun) to perform a Phase II Environmental Site Assessment (ESA) of Pump House 305 (2004 West Schilling Road, Salina, Kansas) (Property).

The User intends to lease the Property. The objective of this Phase II ESA is to evaluate "baseline" environmental conditions prior to the commencement of the lease period. Phase II ESA investigative locations were defined by the User for establishing the baseline environmental conditions. The objective included the evaluation of environmental conditions at the Property at the time of occupancy to reasonably define the existing conditions and circumstances at the Property in conformance with "Standards and Practices for All Appropriate Inquiries" (AAI, 2005).

Investigative activities for this Phase II ESA included the following: (1) an AAI evaluation, (2) advancing four soil borings at User defined locations, (3) obtaining subsurface soil samples for analysis, and (4) laboratory analysis of the subsurface soil samples.

Moderate to strong petroleum odors and elevated photoionization detector (PID) readings were observed in subsurface soil samples obtained from all four soil borings. Laboratory analysis of subsurface soil samples detected Volatile Organic Compounds (VOCs) and Polynuclear Aromatic Hydrocarbons (PNAs). The detected VOCs and PNAs did not exceed the Kansas Department of Health and Environment Tier 2 Risk-Based levels for a residential land use. However, the laboratory noted the presence of interference from undefined VOCs that prevented an accurate quantification of the VOC and PNA concentrations (actual concentrations may be greater).

The detection of the VOCs and PNAs, the elevated PID readings, the petroleum odors, and the laboratory interferences result in the determination that a "release" has occurred as defined under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Accordingly, the detection of the VOCs and PNAs indicate the User has met the provision for "all appropriate inquiries" bona fide prospective purchaser status set forth under sections 101(40) and 107(r) of CERCLA.

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- Phase II ESA Summary 2
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- Findings/Opinion 5

CONCLUSIONS 5

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B	Work Methods
C	Soil Boring Logs
D	Laboratory Analytical Results

LIST OF ACRONYMS

ACRONYM	DESCRIPTION
AAI	All Appropriate Inquiries
ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DC	Direct Contact
DSB	Dragun Soil Boring
DW	Drinking Water
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
fbgl	feet below ground level
FBO	Fixed Base Operator
ft	feet
KDHE	Kansas Department of Health and Environment
PID	Photoionization Detector
PNA	Polynuclear Aromatic Hydrocarbons
REC	Recognized Environmental Condition
SRA	Salina Regional Airport
µg/kg	micrograms per kilogram
UST	Underground Storage Tank
VOC	Volatile Organic Compound

INTRODUCTION

The Salina Airport Authority (Owner) and AvFlight (User) retained The Dragun Corporation (Dragun) to perform a Phase II Environmental Site Assessment (ESA) of the Pump House 305 (2004 West Schilling Road, Salina, Kansas) property located at the Salina Regional Airport Industrial Center (Property). Reliance on this report is subject to the language presented in Appendix A. The Property location, in relation to the surrounding vicinity, is depicted on the Site Location Map (Figure 1)[1] and the Soil Boring Location Map (Figure 2).

The Property contains 13 underground storage tanks (USTs) and a pump house building. Flower Aviation of Kansas, Inc. and America Jet recently leased the Property (lease ending December 31, 2013) for the storage of aviation gasoline and jet fuel. The Property has been used for fueling operations since approximately 1951.

The Property is located at the Salina Regional Airport (SRA). The SRA obtained the airport from the U.S. government in 1966. The airport was Schilling Air Force Base from 1942 until 1966. There is a consent order between the U.S. government and the Salina Entities (includes the Owner) for the investigation and remediation of groundwater contaminated primarily with volatile organic chemicals (VOCs). Seven groundwater plumes have been identified on the SRA property to date; however, based on the current data, the Property is not thought to overlie one of these plumes. There may be contaminants in the subsurface from historical U.S. government operations.

The User had not yet occupied the Property at the time of the fieldwork for this Phase II ESA. The User intends to lease and operate the fueling systems on the Property commencing on January 1, 2014.

The objective of this Phase II ESA was to evaluate "baseline" environmental conditions prior to the commencement of the lease period. Phase II ESA investigative locations were defined by the User for establishing the baseline environmental conditions. The objective also included an evaluation of the recognized environmental conditions (RECs) identified in the prior Phase I ESA[2] with the purpose of providing sufficient information regarding the nature and extent of contamination to assist in making informed business decisions about the Property, and, as applicable, providing the level of knowledge necessary to satisfy the innocent purchaser defense[3].

---

[1] U.S. Geological Survey, "Salina SW, Kansas Quadrangle, 7.5 Minute Series (Topographic)," 1978.
[2] The Dragun Corporation, "Phase I Environmental Site Assessment, Building 700, Salina Regional Airport Industrial Center, Salina, Kansas," December 30, 2013.
[3] United States Environmental Protection Agency, "Standards and Practices for All Appropriate Inquiries," 40 CFR, Part 312, November 1, 2005.

EVALUATION AND PRESENTATION OF RESULTS

Preparation of this report included:

(1) Completion of a Phase I Environmental Site Assessment (ESA)

(2) Conducting a Phase II ESA

Each of these items is summarized in the following text.

Phase I ESA - All Appropriate Inquiries Summary

Dragun previously prepared a Phase I ESA (Dragun, 2013) that identified two recognized environmental conditions (RECs) associated with the Property. The RECs are as follows:

1. REC 1 – 1994 Identified Subsurface Chemical Impacts: A prior subsurface investigation identified chemical impacts. Concentrations of petroleum chemicals detected in 1994 exceed the current Kansas Department of Environment and Health (KDHE), Bureau of Environmental Remediation, Tier 2 Risk-Based screening levels for a nonresidential land use[4]. Petroleum chemicals may still remain in the subsurface. Vapor migration may be occurring.

2. REC 2 – Historical U.S. Government Operations: Seven groundwater plumes from historical military operations have been documented at the SRA. There currently is not an identified contaminant plume beneath the Property; however, there is an active investigation under the consent order that may provide more information about the contaminant plumes in relation to the Property.

Note that no significant exceptions to or deletions from the All Appropriate Inquiries (AAI) rule were identified. Also, no significant data gaps with respect to the Property and the ASTM International E 1527-05[5] standards were identified.

Phase II ESA Summary

A Phase II ESA was completed by Dragun to (1) evaluate the baseline environmental conditions and (2) to evaluate the RECs to the extent feasible. The Phase II ESA work was completed on December 19, 2013, and involved the following activities:

1. Identified subsurface utility locations.

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[4] Kansas Department of Health, Bureau of Environmental Remediation, "Risk-Based Standards for Kansas, RSK-Manual 5th Version," October 2010.
[5] ASTM International, Inc., "ASTM Designation E 1527-05: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," November 1, 2005.

2. Advanced four soil borings using a Geoprobe® drilling rig and collected two soil samples per boring.
3. Performed laboratory analysis of eight soil samples.

A summary of the sampling locations per REC is provided as follows:

Summary of Sampling Locations Per REC			
Sampling Location I.D.	**Location at Property**	**REC**	
		1	**2**
DSB-1	Southwest quadrant of the Property	X	X
DSB-2	Southeast quadrant of the Property	X	X
DSB-3	Northwest quadrant of the Property	X	X
DSB-4	Northeast quadrant of the Property	X	X

A detailed summary of the work methods for the activities listed above is included in Appendix B.

Geologic and Hydrogeologic Conditions: Various historical environmental investigations have been performed at the SRA, resulting in a general understanding of the geologic and hydrogeologic conditions[6]. Regional geologic conditions indicate the soil at the Property is alluvium that consists primarily of low permeability silts and clays with some thin, sporadic, and discontinuous lenses of sand and gravel. Aquifer material consists of discontinuous sand and gravel lenses. Shallow groundwater may exist within the discontinuous sand and gravel lenses with the groundwater flowing northeasterly.

Four soil borings (Figure 2) were advanced to evaluate the subsurface conditions. Soil boring logs documenting the observed subsurface geology are enclosed in Appendix C. A summary of the soil boring depths and sample intervals is provided in the following table:

Summary of Soil Borings		
Soil Boring I.D.	**Soil Boring Total Depth (ft)**	**Soil Sample Intervals for Analysis (ft)**
DSB-1	28	11 – 12 and 22 – 24
DSB-2	27.5	9 – 10 and 25 – 27
DSB-3	25	10 – 13 and 22.5 – 25
DSB-4	27	10 – 12 and 25 – 27

[6] The Dragun Corporation, "Final Cost to Complete Report, Former Schilling Air Force Base, Salina, Kansas," June 9, 2008.

The main observations from reviewing the soil boring logs are as follows:

1. The subsurface geology generally consists of clayey silt or silty clay from grade to approximately 23 to 25 feet below ground level (fbgl). The clay and silt soils appear to have physical properties that would inhibit the vertical migration of hazardous substances. The observed soil types are consistent with the historically identified conditions (Dragun, 2008).

2. All of the soil borings encountered hard soils at approximately 23 to 28 fbgl that resulted in refusal (unable to drill deeper). We expect refusal occurred on the bedrock subcrop.

3. Groundwater was not encountered.

4. A moderate to strong petroleum odor and elevated photoionization detector (PID) readings were observed in all four soil borings. The odor and elevated PID readings were observed in the soil borings commencing from approximately 7 to 8 fbgl and extending to 14 to 19.65 fbgl.

Laboratory Analytical Results: Eight soil samples (two per soil boring) were collected. The soil samples were analyzed for hazardous substances associated with the REC history (Appendix B). A copy of the laboratory analytical report is enclosed (Appendix D). The results are discussed in the following sections.

The main observations from a review of the data are as follows:

1. Four VOCs and eight Polynuclear Aromatic Hydrocarbons (PNAs) were detected. The detected VOC and PNA concentrations did not exceed the KDHE Tier 2 Risk-Based levels for a residential land use. The analytical results, in comparison to the KDHE criteria, are presented on Tables 1 and 2.

2. Per an interview of Mr. Greg Groene of Continental Analytical Services, Inc.[7], the soil samples contained undefined VOCs that interfered ("matrix interference") with the analysis. The undefined VOCs were not within the range of compounds in the laboratory testing method for VOCs and PNAs; therefore, they could not be identified. Accordingly, the VOC and PNA concentrations may not reflect all of the actual hazardous substance concentrations. Mr. Groene acknowledged the presence of a strong petroleum odor.

3. Eleven VOCs had laboratory analytical detection limits ("limits of quantification") that exceeded the KDHE Tier 2 Risk-Based levels for a residential land use for the soil to groundwater pathway. The elevated analytical detection limits are primarily due to the interferences.

[7] Telephone interview of Mr. Greg Groene by M. Resch of The Dragun Corporation, January 16, 2014.

4. Lead was detected at a concentration ranging between 1,600 and 14,000 micrograms per kilogram. This range does not exceed the KDHE Tier 2 Risk-Based levels.

5. The petroleum odors, elevated PID readings, and the matrix interference are consistent with the identification of hazardous substances in 1994 by Bucher, Willis, and Ratliff[8].

Findings/Opinion

Four soil borings were installed at locations identified by the User to evaluate business risk and, to the extent practicable, the previously identified RECs. Laboratory testing included the analysis of hazardous substances associated with the RECs.

Petroleum odors, elevated PID readings, and laboratory matrix interferences were observed that indicate the presence of hazardous substances in subsurface soil. The observed conditions are consistent with the analytical results from a 1994 subsurface investigation. The detected VOCs include hazardous substances associated with petroleum products such as currently and historically dispensed from the USTs.

The identified subsurface soil conditions suggest the potential for vapor migration to occur.

Under the federal All Appropriate Inquiries (40 CFR 312), the detection of the VOCs and PNAs indicates the Property has had a "release" as defined under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)[9]. Accordingly, the User qualifies for the bona fide prospective purchaser liability protections defined under CERCLA sections 101(40) and 107(r).

Note that the detected VOCs and PNAs do not exceed the KDHE Tier 2 Risk-Based levels for a residential land use.

CONCLUSIONS

Dragun conducted a Phase II ESA for the Pump House 305 (2004 West Schilling Road, Salina, Kansas) property located at the Salina Regional Airport Industrial Center.

VOCs and PNAs were detected in subsurface soil samples obtained from all four soil borings. The detected VOCs and PNAs did not exceed the KDHE Tier 2 Risk-Based levels for a residential land use. However, the detection of the VOCs and PNAs meets the definition of a "release" as defined under CERCLA. Accordingly, the detection of the VOCs and PNAs

[8] Bucher, Willis, & Ratliff, "Pump House No. 305 Summary Report," June 13, 1994.
[9] 42 U.S.C. § 9601(22).

indicate the User has met the provision for "all appropriate inquiries" bona fide prospective purchaser status set forth under sections 101(40) and 107(r) of CERCLA.

IDENTIFICATION OF THE AUTHOR

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professionals as defined in §312.10 of 40 CFR 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

The authors identified below are employed by Dragun and can be contacted at (248) 932-0228.

Mark E. Resch, L.G.
Geologist

Jeffrey A. Bolin, CHMM
Senior Vice President – Technical Operations

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

MARK E. RESCH, L.P.G., C.P
Geologist

WORK EXPERIENCE

- Create scopes of work, perform data evaluation and develop reports for Part 201, Part 213, and oil and gas part 615/201 project sites.
- Perform oversight and review of Phase I/II Environmental Site Assessments (ESA) for commercial/industrial properties.
- Develop Category N, D, and S Baseline Environmental Assessments (BEA) and Due Care Plans for property acquisition liability evaluation.
- Perform leaking underground storage tank (LUST) project remedial investigation/corrective action design and monitoring for various impacted petroleum sites.
- Perform remedial investigation feasibility study, corrective action design, and monitoring and treatment system maintenance oversight at various oil/gas sites regulated under Parts 615/201 including brine impacts to soil and groundwater.
- Perform pump tests for proposed Type I/II water well systems; install logging sensors, create test curves, and develop predictive effect information such as maximum draw down within the pumping well and aquifer, the 100-day predictive effect, and maximum pumping well withdrawal rates for aquifer test requirements for public water supply wells.
- Design abandoned dump landfill cap construction drawings, create landfill gas monitoring and remediation plans, and oversee landfill groundwater monitoring programs.
- Create US EPA assessment and cleanup grant applications for Clair, Alpena, and Cheboygan counties, Michigan.
- Develop technical specifications and evaluate bids for remedial construction work performed by construction contractors.
- Develop Category S and D BEAs for several industrial properties involving impacted groundwater and soil derived from petroleum and solvent usage. Created work plans regarding the necessary engineering controls related to the proposed facility industrial use. The work plans involved the creation of pavement engineering barriers in addition to source removal and the development of an engineering control maintenance plan and checklist.

Education

1987; B.S., Geophysics, Western Michigan University; Kalamazoo, MI

Certifications

1993; Licensed Professional Geologist (L.P.G.), IN #1372

2013; Licensed Geologist (L.G.), KS #833

2006; Certified Construction Site Storm Water Manager, MI #C-12697

2006; Certified Industrial Site Storm Water Manager, MI #1-08555

Training

1995; Risk-Based Corrective Action, ASTM ES 38-94

1995; MDEQ Risk-Based Corrective Action for LUST Sites

1992; Migration, Assessment and Remediation of Non-Aqueous Phase Liquids, National Groundwater Association

1990; 8-Hour OSHA Hazardous Waste Supervisor Training

1989; 40-Hour OSHA Hazardous Waste Safety Training

Affiliations

Michigan Association of Environmental Professionals

- Create Resource Conservation and Recovery Act (RCRA) partial closure documentation for several solid waste management units (SWMU) at regulated facilities involving F005 and F006 wastes. Evaluated historical work methods with property owner representative to identify source production processes that resulted in releases of petroleum and solvent products. Developed RCRA approved sampling and analysis plans, tested at SWMU locations and create RCRA closure documentation.

- Perform investigations at U.S. Army corps of Engineer managed facilities. Projects include various remedial investigations at Michigan National Guard facilities, an evaluation of oil/water separators at 27 armories in Michigan, and a study of surface water quality for Duluth, Minnesota Harbor.

- Perform remedial investigation/feasibility study (RI/FS) for Formerly Used Defense Sites (FUDS) including Wurtsmith Air Force Base (Wurtsmith, Michigan) and Virgil Grissom Air Force Base (Peru, Indiana). Evaluated various waste management units (WMU) determining the extent of impact and assisted in the creation of remedial action plans. Developed bid documents for public bid, technical specifications, performed bid management and oversaw the demolition of former military hangars, offices, and ammunition bunkers.

- Developed decommissioning documentation for a major retail store service garages and associated gasoline stations. Performed Phase I/II Environmental Site Assessments, created the work plan and technical bid documentation for decommissioning services, and oversaw the decommissioning of vehicle hoists, underground and aboveground storage tanks, oil/water separators, and chemical storage areas.

JEFFREY A. BOLIN, M.S., CHMM
Environmental Scientist

WORK EXPERIENCE

- 1989 – Present, Environmental Scientist, Senior Vice President of Technical Operations, The Dragun Corporation

- 1980 – 1989 – Field Technician, Field Supervisor, Burmah Technical Services

PROJECT EXPERIENCE

- Over 30 years experience in environmental project management and consulting with attorneys, bankers, commercial, and industrial clients

- Conducted and overseen hundreds of real estate assessments of commercial property, industrial manufacturing and processing facilities, food processing facilities, die ships, robotic facilities, fertilizer storage and manufacturing, and fuel storage facilities in the United States, Canadian Provinces, and France
  - Phase I and II Environmental Site assessments (ESAs)
  - Brownfield Plan preparation
  - Baseline Environmental Assessment (BEA – Michigan)
  - Due Care Analysis (Section 7a Compliance Analysis – Michigan)

- Litigation support for Property Transactions and associated environmental concerns

- Management of numerous projects to achieve site closure
  - RCRA Corrective Action
  - Michigan Part 201 and CERCLA (Superfund)
  - Leaking Underground Storage Tanks under Michigan Part 213 and various other state regulations
  - Feasibility Studies
  - Remedial Action Plans

- Management of design and implementation of remedial alternatives for contaminated soil and groundwater
  - Groundwater recovery and treatment
  - Soil vapor extraction
  - Air sparging
  - In-situ chemical oxidation
  - Enhanced bioremediation
  - Monitored natural attenuation

Education

1994; M.S. Hazardous Waste Management, Wayne State University

1980; B.S. Environmental Science, Lake Superior State University

Registrations and Certifications

Certified Hazardous Materials Manager; Certificate #2437

Certified Underground Storage Tank Professional, Michigan #132

Advanced EMS Auditors Course for Quality and Environmental, IRCA Certificate #1458088003

Asbestos Building Inspector, Certificate #6507

OSHA 40-Hour Hazwoper and 8-Hour Supervisor

Heart Saver® First Aid B (CPR & AED)

Honors, Awards and Appointments

2010 – 2008; Adjunct Professor; Lawrence Technological University

2007, 1994, 1992; Instructor of Hazardous Materials Manager Certification Exam Review Courses

2002; Commercial Inc, Elite Eight Award, Environmental Category

Recent Speaking Engagements

2010; Association of Defense Communities Winter Forum "Hot Topics on Environmental Law for Defense Communities"

2009; Association of Defense Communities Annual Conference; "Turning Lemons into Lemonade: How to Remediate and Redevelop Under Funded Contaminated Sites

2008; Michigan Institute of Laundering and Drycleaning Conference: "The Environmental Nightmare: Controlling Risk and Avoiding Liability"

- Environmental compliance assessments and audits
  - Clean Water Act
  - Clean Air Act
  - CERCLA
  - RCRA
  - TSCA
  - Local and State Regulations

PUBLICATIONS

- 2008, Contributing Author; American Bar Association, The Year in Review 2008; Section of Environment, Energy, and Resources Law; "Green Remediation."

- Bolin JA and Hahn AE. December 2006. What is too expensive? Michigan Lawyers Weekly.

- Bolin JA and Lawton AC. February 2006. 'All Appropriate Inquiries' – New . . . and Improved? Michigan Lawyers Weekly.

- Sklash MG, Bolin JA, and Schroeder MC. 2005. The ABCs of Environmental Forensics. Chemical Engineering Progress.

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- Bolin JA. February 2001. Part 3 of 12 Part Series. Due Diligence. Detroiter. Detroit, Michigan

- Bolin JA and Lawton AC. September 2001. Due Diligence: Deal Maker or Deal Breaker. Commercial Inc. Detroit, Michigan

- Bolin JA and Hahn AE. February 1999. A Boon for Urban Redevelopment. Detroiter. Detroit, Michigan

- Bolin JA and Hahn AE. October 1997. No Need to be Fazed by Phase I. Detroiter. Detroit, Michigan

- Ainslie AM and Bolin JA. 1996. Federal Funds for Environmental Clean Up. In Commercial, Inc., Volume 9, Number 3, pp-8-9. Detroit, Michigan

- Barkach JH, Berger RS, and Bolin JA. May 9-10, 1994. An overview of the ASTM Phase I ESA and transaction screen process. In Proceeding of the Engineering Society of Detroit Environmental Response Planning Conference. Hyatt Regency, Dearborn, Michigan

Recent Speaking Engagements

2006; Food Processing Environmental Conference; "Bona Fide Prospective Purchaser and Other Defenses in the CERCLA Brownfields Provisions"

2004; Food Industry Environmental conference; "Merger and Acquisition Due Diligence

- Bolin JA. December 1993. Finding an Underground Storage Tank. Michigan Forward. Lansing, Michigan

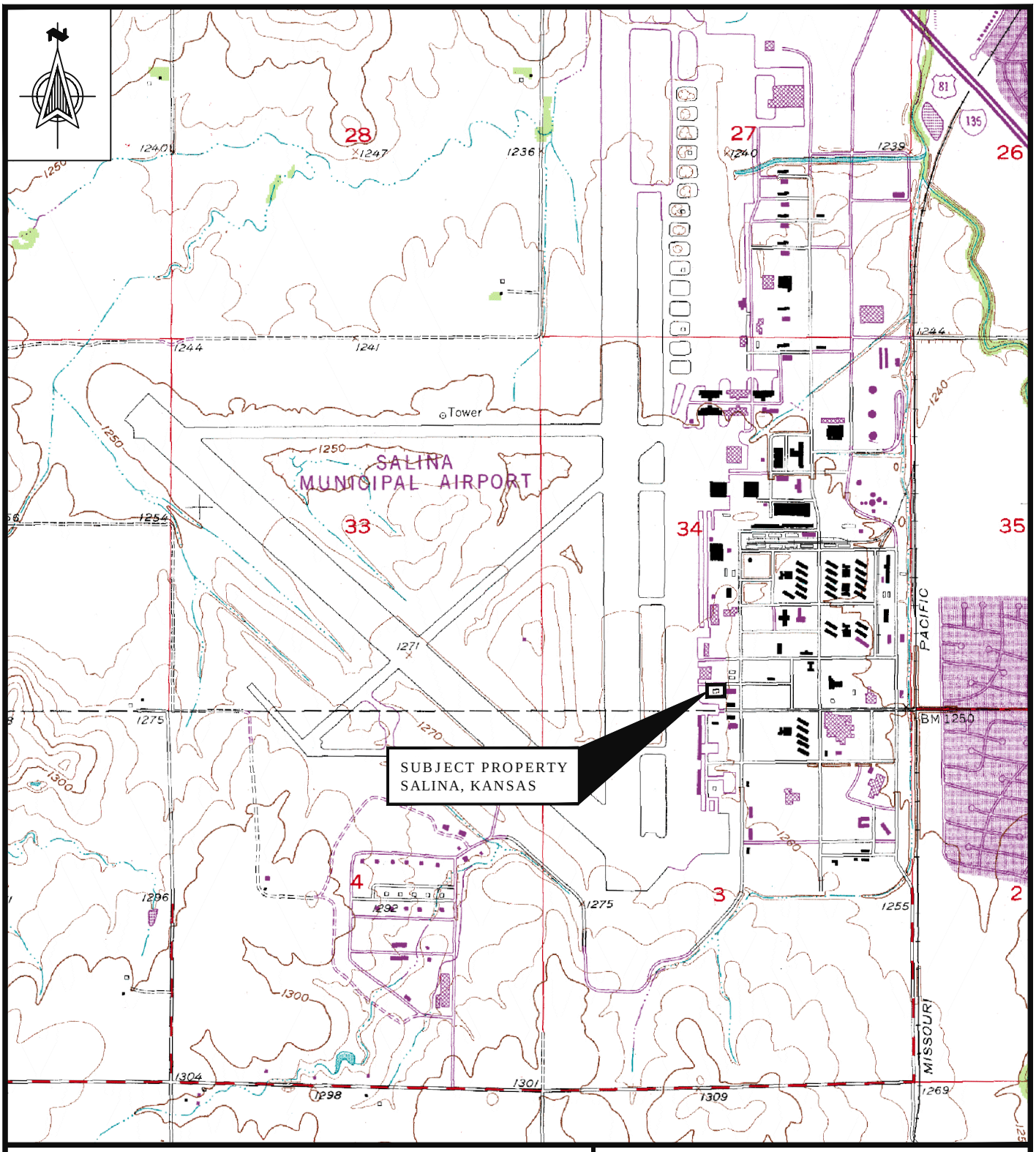
- Barkach JH, Berger RS, Bolin JA, and Ehmke C. October 12-14, 1993. Conducting an environmental compliance audit: Effective interviewing skills. In Technical Papers of the Third Annual Environmental Management and Technology Conference/North America. Detroit, Michigan

- Barkach JH, Berger RS, and Bolin JA. September 23-24, 1992. Conducting an environmental compliance audit. In Proceedings of the Fifteenth Annual Madison Waste Conference. Department of Engineering Professional Development, University of Wisconsin-Madison (in press).

- Barkach JH, Bolin JA, Dragun J, and Mason SA. 1991. The regulatory impact of the historic use of foundry sand waste as fill material. E^2m, The Journal of Environmental Engineering and Management. Summer 1993. Vol.3, Issue 2. St. Clair Shores, Michigan

FIGURES

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02



PHASE II ENVIRONMENTAL SITE ASSESSMENT
PUMP HOUSE 305, SALINA REGIONAL
AIRPORT INDUSTRIAL CENTER
SALINA, KANSAS

FIGURE 1
SITE LOCATION MAP

SCALE

0 FEET 2000

KANSAS
QUADRANGLE LOCATION

References: Salina SW, Kansas Quadrangle (U.S. Geological Survey, 1978); and Parcels provided by City of Salina.

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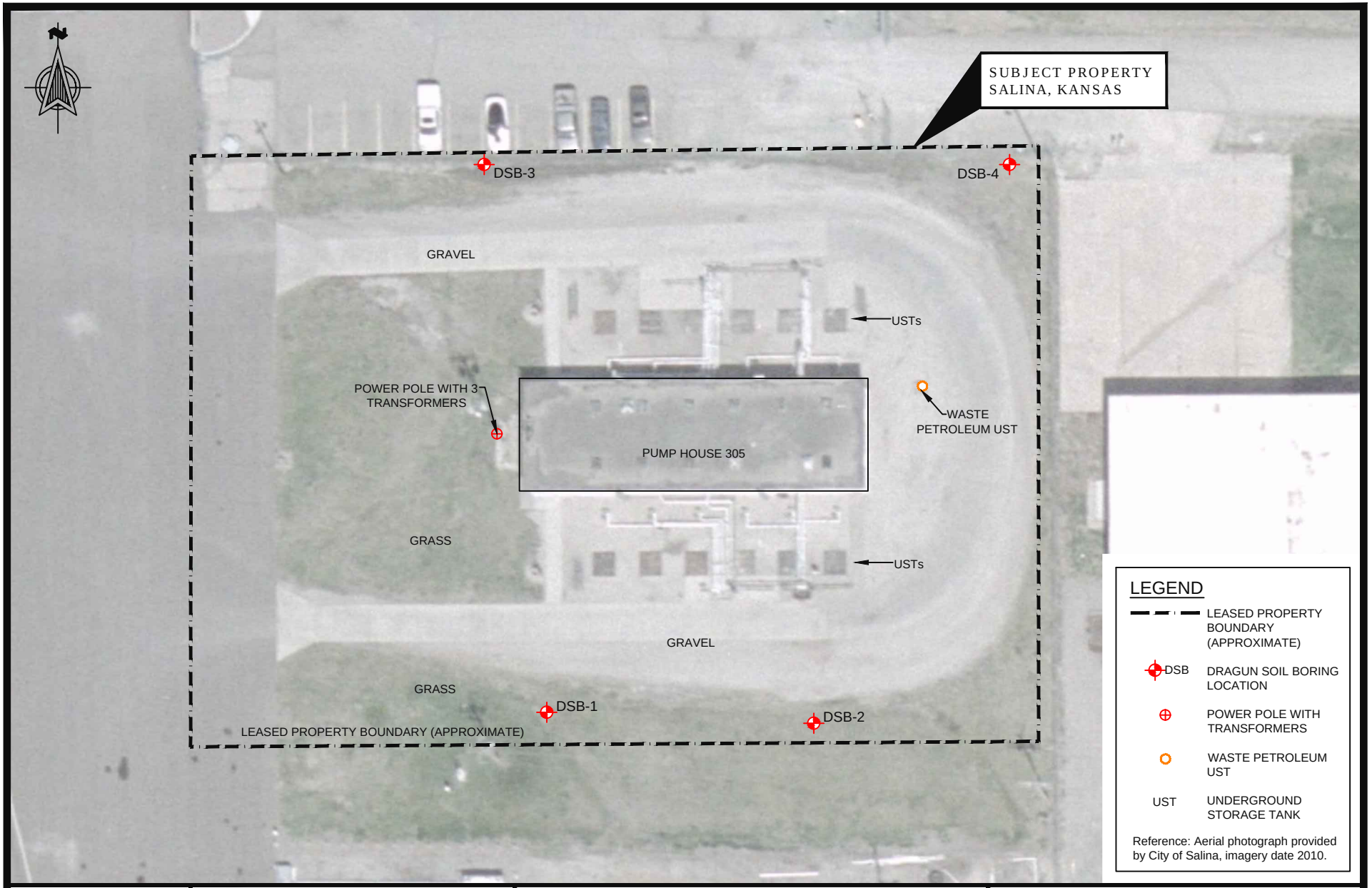
File: K:\2013\30425-02 Pump House 305 Ph II ESA\CAD\Ph II ESA\30425-02 Figure 1.dwg Date: 02/05/2014



SCALE

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Dragun Corporation
Environmental Advisors

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PHASE II ENVIRONMENTAL SITE ASSESSMENT
PUMP HOUSE 305, SALINA REGIONAL
AIRPORT INDUSTRIAL CENTER
SALINA, KANSAS

FIGURE 2
SOIL BORING LOCATION MAP

TABLES

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

Table 1: Summary of Volatile Organic Compound Concentrations
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project # 30425-02

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane[1]	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone	2-Chloroethylvinylether	2-Chlorotoluene	2-Hexanone
DSB-1	11 - 12	ND(20)	ND(20)	ND(150) M	ND(100) M	ND(20)	ND(20)	ND(20)	ND(20) M	ND(170) M	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(100) M	ND(70) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(1400) M	ND(230) EV	ND(20)	ND(6300) M
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(21) QC	ND(4.2) EV	ND(4.2)	ND(21)
DSB-2	9 - 10	ND(20)	ND(20)	ND(150) M	ND(340) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(50)	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(250) M	ND(270) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(6000) M	ND(1600) M EV	ND(20)	ND(23000) M E
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(21) QC	ND(4.3) EV	ND(4.3)	ND(21)
DSB-3	10 - 13	ND(20)	ND(20)	ND(100) M	ND(300) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(190) M	ND(140) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(2800) M	ND(230) EV	ND(20)	ND(1500) M
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(22) QC	ND(4.3) EV	ND(4.3)	ND(22)
DSB-4	10 - 12	ND(20)	ND(20)	ND(390) M	ND(430) M	ND(20)	ND(20)	ND(20)	ND(100) M	ND(270) M	ND(50) M	ND(20)	ND(500)	ND(20)	ND(20)	ND(140) M	ND(30) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(3000) M	ND(320) M EV	ND(20)	ND(920) M
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20) QC	ND(4.0) EV	ND(4.0)	ND(20)
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																										
Soil Pathway**		27,800	11,800,000	8,210	15,600	46,800	313,000	NVE	NVE	57.6	89,200	54,000	9,930	483	2,340,000	6,270	12,900	243,000	NVE	NVE	37,500	NVE	26,000,000	NVE	542,000	NVE
Soil to Groundwater Pathway		114	5,210,000	16	81	269	85.9	NVE	NVE	0.127	19,300	1,070	5.43	0.598	48,400	60	81.7	5,510	NVE	NVE	5,940	NVE	24,200	NVE	7,180	NVE

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-Pentanone	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethan	Ethylbenzene	Hexachlorobutadiene	Hexane
DSB-1	11 - 12	ND(20)	ND(20)	ND(31000) M E	ND(500)	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(46)	ND(20)	ND(20)	ND(46) QC	ND(46)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(46)	ND(20)	ND(20)	ND(20)	ND(46)
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(21) QC	ND(21)	ND(21) EV	ND(21)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC
DSB-2	9 - 10	ND(20)	ND(20)	ND(72000) M E	ND(900) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(50)	ND(80) M	ND(20)	ND(50) QC	ND(50)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(50)	ND(20)	ND(20)	ND(20)	ND(80) M
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(21) QC	ND(21)	ND(21) EV	ND(21)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC
DSB-3	10 - 13	ND(20)	ND(20)	ND(61000) M E	ND(2000) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(47) QC	ND(47)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(20)	ND(47)
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(22) QC	ND(22)	ND(22) EV	ND(22)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC
DSB-4	10 - 12	ND(20)	ND(20)	ND(29000) M E	ND(5000) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(48)	ND(70) M	ND(20)	ND(48) QC	ND(48)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(48)	ND(20)	ND(20)	ND(20)	ND(48)
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(20) QC	ND(20)	ND(20) EV	ND(20)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																									
Soil Pathway**		NVE	NVE	4,450,000	50,300,000	192	3,180	15,900	NVE	NVE	3,930	1,010,000	9,390	1,020,000	8,440	380,000	18,200,000	4,220	146,000	94,700	NVE	227,000	82,000	61,100	656,000
Soil to Groundwater Pathway		NVE	NVE	6,690	51,600	0.175	2.8	168	NVE	NVE	841	832	50	6,710	73.4	5,100	128,000	850	924	834	NVE	13,500	65,600	1,100	50,100

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		Isopropylbenzene	MTBE	Methyl iodide	Methylene chloride	Naphthalene	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl chloride	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	m+p-Xylene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-butylbenzene	tert-Butylbenzene	trans-1,2-Dichloroethene	trans-1,3-dichloropropene	trans-1,4-Dichloro-2-butene	Freon TF[2]
DSB-1	11 - 12	ND(20)	ND(20)	ND(46)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(230) EV	ND(20)	ND(20)	ND(20)	ND(46)	**96 EC**	**30**	ND(20)	**160**	ND(20)	ND(20)	ND(20)	ND(1600) M	ND(20)
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(42) EV	ND(4.2) QC	ND(4.2)	ND(4.2) QC	ND(8.3)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)
DSB-2	9 - 10	**82**	ND(20)	ND(50)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(250) EV	ND(20)	ND(20)	ND(20)	ND(50)	**50 EC**	**220**	ND(20)	**30**	ND(20)	ND(20)	ND(20)	ND(3700) M	ND(20)
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(43) EV	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(8.5)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)
DSB-3	10 - 13	ND(20)	ND(20)	ND(47)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(230) EV	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	**40**	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(2400) M	ND(20)
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(43) EV	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(8.7)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)
DSB-4	10 - 12	**40**	ND(20)	ND(48)	ND(20)	ND(60) M QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(240) EV	ND(20)	ND(20)	ND(20)	ND(48)	**61 EC**	**92**	ND(20)	**150**	ND(20)	ND(20)	ND(20)	ND(1600) M	ND(20)
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(40) EV	ND(4.0) QC	ND(4.0)	ND(4.0) QC	ND(8.1)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																									
Soil Pathway**		NVE	585,000	NVE	149,000	30,500	7,020,000	7,540	4,320,000	41,000	1,000,000	1,260,000	4,470	115,000	23,300	936,000	285,000	4,070,000	936,000	276,000	NVE	202,000	NVE	NVE	13,800,000
Soil to Groundwater Pathway		NVE	848	NVE	42.9	349	9,340	121	51,200	84.2	21,500	2,090	20.5	855	91.6	809,000	10,200	110,000	809,000	8,270	NVE	1,220	NVE	NVE	321,000

NOTES:

BOLD	Bold type indicates the detection of a hazardous substance.
µg/kg	micrograms per kilogram.
ND	Not Detected below the concentration noted in parenthesis (i.e. the "reporting limit").
M	Reporting limit higher than normal due to interferences.
QC	The response for this analyte exceeded the calibration range of the instrument; the reported result, if provided, is estimated.
EV	Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.
E	Concentration or reporting limit is an estimated value. Matrix interferences and/or sample heterogeneity were noted at the time of sample analysis.
EC	This result is estimated due to insufficient chromatographic resolution from other compounds.
NVE	No Value Established by the Kansas Department of Health and Environment.
*	Source: Kansas Department of Health and Environment, Bureau of Environmental Remediation, "Risk-Based Standards for Kansas, RSK Manual - 5th Version," October 2010.
**	Soil Pathway: Includes the protection of the ingestion of contaminated soil, inhalation of VOCs or fugitive emission dusts, and dermal contact with contaminated soil.
1	1,2-Dibromomethane is a synonym for Ethylene Dibromide.
2	Freon TF is a synonym for 1,1,2-Trichloro-1,2,2-trifluoroethane.

Table 2: Summary of Polynuclear Aromatic Hydrocarbon and Lead Concentrations
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project # 30425-02

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Lead
DSB-1	11 - 12	ND(700)	ND(700)	**80 QC**	**120 QC**	**60**	**70 QC**	ND(50) QC	ND(50) QC	**70 QC**	ND(50)	**0.4**	ND(100) QC	ND(50)	ND(50)	**0.3**	**0.3**	**11,000**
DSB-1	22 - 24	ND(70)	ND(70)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)	ND(10)	ND(5)	ND(5)	ND(20)	ND(10)	**2,100**
DSB-2	9 - 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**14,000**
DSB-2	25 - 27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,900**
DSB-3	10 - 13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13,000**
DSB-3	22.5 - 25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,000**
DSB-4	10 - 12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13,000**
DSB-4	25 - 27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,600**
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																		
Soil Pathway**		3,420,000	NVE	18,000,000	10,900	1,090	10,900	NVE	109,000	1,090,000	1,090	2,440,000	2,360,000	10,900	30,500	NVE	1,830,000	400,000
Soil to Groundwater Pathway		255,000	NVE	3,770,000	7,890	23,500	19,200	NVE	190,000	805,000	3,080	2,830,000	297,000	45,500	349	NVE	2,190,000	NVE

NOTES:

BOLD Bold type indicates the detection of a hazardous substance.
µg/kg micrograms per kilogram.
ND Not Detected below the concentration noted in parenthesis (i.e. the "reporting limit").
QC The response for this analyte exceeded the calibration range of the instrument; the reported result, if provided, is estimated.
NVE No Value Established by the Kansas Department of Health and Environment.
NA Not Analyzed.
* Source: Kansas Department of Health and Environment, Bureau of Environmental Remediation, "Risk-Based Standards for Kansas, RSK Manual - 5th Version," October 2010.
** Soil Pathway: Includes the protection of the ingestion of contaminated soil, inhalation of VOCs or fugitive emission dusts, and dermal contact with contaminated soil.

APPENDIX A
Reliance and Limitations and Exemptions

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

APPENDIX A
RELIANCE AND LIMITATIONS AND EXEMPTIONS

Reliance

This Phase II Environmental Site Assessment (ESA) was prepared on behalf of, and for the exclusive use of, The Salina Airport Authority and AvFlight. This is a report that The Salina Airport Authority and AvFlight may rely upon regarding the Phase II ESA of the Property under the terms and conditions of our contract with The Salina Airport Authority.

Limitations and Exemptions

Dragun's findings and conclusions are not certainties; rather, they represent our professional opinion concerning the significance of the limited data gathered during the course of the Phase II ESA. No other warranty, expressed or implied, is made. Specifically, Dragun does not and cannot represent that the Property contains no hazardous substances, petroleum products, or other latent conditions beyond that observed by Dragun during the performance of the Phase II ESA. Performance of the Phase II ESA is intended to reduce, but not eliminate, uncertainty.

APPENDIX B
Work Methods

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

APPENDIX B
WORK METHODS

Utility Locate Methods

Plains Environmental Services (Plains) contacted Kansas One Call to stake and mark underground utilities. Additionally, Dragun was provided subsurface utility drawings from the Salina Airport Authority. Prior to commencement of drilling work, the on-site Dragun and Plains representatives visually inspected the soil boring locations for visual evidence of underground utility corridors in the immediate vicinity of each soil boring.

Soil Boring and Soil Sampling Methods

Soil borings were installed on the Property using a Geoprobe® drill rig operated by Plains. An associate from Dragun logged each soil boring, including a description of the encountered soil conditions, and performed a qualitative evaluation for volatile organic compound (VOC) vapors using a photoionization detector (PID).

The PID was calibrated with charcoal-filtered ambient air and a gas standard (100 parts per million [ppm] isobutylene) prior to the commencement of fieldwork.

Up to two soil samples per soil boring were obtained from the vadose zone (unsaturated zone) for laboratory analysis based on the PID, visual, or olfactory indications of potential impact. If elevated PID readings, visual, or olfactory conditions were not identified, a sample was chosen from a depth increment based on the potential for impacts from the identified Recognized Environmental Condition (REC).

Soil samples were obtained from each boring using a Macro-Core® soil sampler consisting of a 5-foot long, 1.75-inch internal diameter steel tube with a disposable liner. Dragun collected each sample using a clean pair of disposable nitrile gloves.

Soil boring locations were measured in the field using a 100-foot tape measure with the soil boring locations referenced to visually identifiable landmarks (e.g., building corners, steel manhole lids).

Laboratory Analytical Methods

The soil samples were placed in laboratory-supplied containers, stored in an iced cooler, and submitted to Continental Analytical Services, Inc. under chain of custody protocol for testing of chemicals of concern. A summary of the chemical analytical test methods utilized by the laboratory for the samples is provided as follows:

Summary of Chemical Analysis		
Chemical Test Name	**Matrix Analyzed**	**Test Method**
Volatile Organic Compounds (VOCs)	Soil	U.S. EPA method 8260B
Polynuclear Aromatic Hydrocarbons (PNAs)	Soil	U.S. EPA method 8310
Total Lead	Soil	U.S. EPA method 6010B

APPENDIX B
WORK METHODS

The above chemicals were chosen based on the results of the prior Phase I ESA (Dragun, December 2013).

Waste Management Methods

Soil cuttings derived from the drilling process and water from the cleaning of the drilling tools were placed into two drums for waste disposal. Eagle Environmental, LLC manifested, transported, and disposed of the drums.

Soil Boring Restoration Methods

The boreholes were filled with bentonite chips to the approximate ground level.

APPENDIX C
Soil Boring Logs

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-1	**Assistant**	Henry	Weather:	Partly cloudy, 45 °F
Total Depth	28 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	0832
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	0950
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
0 - 5	--	41	1': < 1 2': < 1	0' - 2.9': 0 - 3% fine to coarse sand, 5 - 15% clay, 82 - 95% silt, brown and light grey, moist, slight plasticity, no odor, root fragments
			3': < 1	2.9' - 3.4': 40 - 50% clay, 50 - 60% silt, brown and light grey, moist, medium plastic, no odor
5 - 10	--	59	6': < 1 6.33': < 1	5' - 7': 40 - 50% clay, 50 - 60% silt, brown and light grey, moist, medium plastic, no odor
			7.6': 18 8.33': 102 9': 269 9.67': 169	7' - 9.9': 40 - 50% silt, 50 - 60% clay, light grey to greenish grey, moist, high plasticity, moderate fuel odor, soft
10 - 15	--	59	10.5': 106 11': 412 12': 99	10' - 12.33': 0 - 50% silt, 50 - 60% clay, light grey to greenish grey, moist, high plasticity, strong fuel odor, soft
			12.67': 13 13.33': 5 14': 2.8 14.6': < 1	12.33' - 14.9': 80 - 90% clay, 10 - 20% silt, light brown, moist, high to very high plasticity, no odor
15 - 20	--	59		15' - 15.4': 80 - 90% clay, 10 - 20% silt, light brown, moist, high to very high plasticity, no odor
			16': < 1 17': < 1 17.67': < 1 18.5': < 1 19.33': < 1	15.4' - 19.9': 3 - 5% fine to coarse sand, 40 - 50% clay, 45 - 57% silt, light brown, moist, medium plasticity, no odor, stiff
				Continued on page 2

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-1	**Assistant**	Henry	Weather:	Partly cloudy, 45 °F
Total Depth	28 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	0832
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	0950
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
				Continued from page 1
20 - 25	--	59	21': < 1 22': < 1	20 - 22.3': 3 - 5% fine to coarse sand, 40 - 50% clay, 45 - 57% silt, reddish brown, moist, medium plasticity, no odor
			23': < 1	22.3' - 23.6': 0 - 15% fine gravel, 5 - 15% fine to coarse sand, light grey, moist, slight plasticity, no odor, stiff
			24': < 1	23.6' - 24.9': 15 - 25% clay, 75 - 85% silt, light grey, moist, slight to low plasticity, no odor, very stiff
25 - 28	--	--	--	No sample
				Refusal @ 28' BGL EOB @ 28' BGL.

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-2	**Assistant**	Henry	Weather:	Overcast, 52 °F
Total Depth	27.5 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1015
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1110
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
0 - 5	--	36	1': < 1	0' - 0.6': 15 - 25% clay, 75 - 85% silt, brown, dry to moist, slight plasticity, no odor, hard, root fragments
			2': < 1 2.67': < 1	0.6' - 3': 15 - 25% clay, 0 - 3% fine to coarse sand, 72 - 80% silt, light grey, moist, slight plasticity, no odor, stiff
5 - 10	--	52	6': < 1	5' - 6.8': 0 - 3% fine to coarse sand, 25 - 40% clay, 57 - 75% silt, brown, moist, low plasticity, no odor, stiff
			7': < 1 8.2': < 1 8.5': 330 9': 545	6.8' - 4.33': 40 - 50% clay, 50 - 60% silt, light grey, moist, medium plasticity, moderate to strong fuel odor, stiff
10 - 15	--	60	11': 201 12': 65	10' - 12': 50 - 60% clay, 40 - 60% silt, light to dark grey, moist, medium to high plasticity, moderate fuel odor, medium stiff
			13': 24 14': 1.7	12' - 15': 25 - 40% silt, 60 - 75% clay, brown, moist, high plasticity, no odor, soft
15 - 20	--	58	16': 21.7	15' - 16.4': 25 - 40% silt, 60 - 75% clay, brown, moist, high plasticity, no odor, soft
			17': 2	16.4' - 17.4': 3 - 5% fine to coarse sand, 25 - 40% clay, 55- 72% silt, brown to yellow orange, moist to wet, low to medium plasticity, no odor, medium stiff
				Continued on page 2

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-2	**Assistant**	Henry	Weather:	Overcast, 52 °F
Total Depth	27.5 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1015
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1110
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
				Continued from page 1
			18': 1.5 19': < 1	17.4' - 19.8': 40 - 50% clay, 50 - 60% silt, brown to light brown, moist, medium plasticity, no odor, medium stiff
20 - 22.5	--	30	20.5': < 1 21': < 1 22': < 1	20' - 22.5': 40 - 50% clay, 50 - 60% silt, brown to light brown, moist, medium plasticity, no odor, medium stiff
22.5 - 25	--	30	23': < 1 23.5': < 1 24.5': < 1	22.5' - 25': 0 - 5% fine gravel, 0 - 5% fine to coarse sand, 25 - 40% clay, 50 - 75% silt, brown, moist, low to medium plasticity, no odor, medium stiff
25 - 27.5	--	30	26': < 1	25' - 26': 0 - 5% fine gravel, 0 - 5% fine to coarse sand, 25 - 40% clay, 50 - 75% silt, brown, moist, low to medium plasticity, no odor, medium stiff
			27': < 1	26' - 27.5': 0 - 3% clay, 97 - 100% silt, light grey, moist, non-plastic, no odor, hard, possible weathered bedrock
				Refusal @ 27.5' BGL EOB @ 27.5' BGL

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-3	**Assistant**	Henry	Weather:	Partly cloudy, 57 °F
Total Depth	25 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1425
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1515
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
0 - 5	--	40	0.5': < 1	0 - 0.9': 0 - 5% fine to coarse sand, 25 - 40% silt, 65 - 75% clay, dark brown, moist, high plasticity, no odor, medium stiff, root fragments
			1': < 1 2': < 1 3': < 1	0.9' - 3.33': 0 - 3% fine to coarse sand, 40 - 60% silt, 47 - 60% clay, dark grey and dark brown, moist, medium plasticity, no odor, medium stiff
5 - 10	--	55	5.5': < 1 6': < 1 7': < 1 8': 4.6 9': 111	5 - 9.6': 0 - 3% fine sand, 40 - 60% silt, 37 - 60% clay, light grey, moist, no odor trending to slight fuel odor at 8.8', medium to high plasticity, medium stiff
10 - 15	--	57	10.5': 130 11': 677	10' - 11.75': 50 - 75% clay, 30 - 50% silt, dark grey, moist, high plasticity, moderate to strong fuel odor, stiff to very stiff
			12': 407	11.75' - 12.9': 0 - 3% fine to coarse sand, 50 - 60% clay, 37 - 50% silt, light grey with yellow orange mottles, high plasticity, moderate to strong fuel odor, stiff
			13': 65 14': 68	12.9' - 14.75': 0 - 3% fine to coarse sand, 50 - 60% clay 37 - 50% silt, light brown with yellow orange, high plasticity, slight fuel odor, stiff
15 - 20	--	60	16': 213 16.5': 52 17': 3	15' - 17.4': 0 - 3% fine sand, 40 - 50% silt, 47- 60% clay, light brown, moist to wet (not saturated), high plasticity, slight fuel odor, soft Continued on page 2

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-3	**Assistant**	Henry	Weather:	Partly cloudy, 57 °F
Total Depth	25 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1425
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1515
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
				Continued from page 1
	--	60	18': < 1	17.4' - 18.33': 5 - 15% fine to coarse sand, 15 - 25% clay, 60 - 80% silt, light brown, moist to wet (not saturated), slight to low plasticity, no odor, soft
			19': < 1	18.33' - 20': 0 - 3% fine to coarse sand, 40 - 60% clay, 37- 60% silt, light brown, medium to high plasticity, no odor, stiff to medium stiff
20 - 22.5	--	30		20' - 20.8': 3 - 5% fine to coarse sand, 15 - 25% clay, 70 - 82% silt, light brown, moist, low plasticity, no odor, medium stiff
			21': < 1 22': < 1 22.5': < 1	20.8' - 22.5': 0 - 3% fine to coarse sand, 5 - 15% clay, 82 - 95% silt, light grey, slight plasticity, no odor, very stiff
22.5 - 25	--	30	23.5': < 1 24.5': < 1 25': < 1	22.5' - 25': 3 - 5% fine to coarse sand, 0 - 5% fine gravel, 3 - 15% clay, 75- 94% silt, light grey, moist, none to slight plasticity, no odor, hard, possible weathered bedrock
				Refusal @ 25' BGL EOB @ 25' BGL

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-4	**Assistant**	Henry	Weather:	Partly cloudy, 52 °F
Total Depth	27 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1307
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1410
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
0 - 5	--	46	0.5': < 1	0' - 0.9': 3 - 5% fine to coarse sand, 40 - 50% clay, 45 - 57% silt, brown, moist, low to medium plasticity, no odor, medium stiff
			1': < 1 1.33': < 1 2': < 1 3': < 1 3.6': < 1	0.9' - 3.8': 0 - 3% fine to medium sand, 40 - 50% clay, 47 - 57% silt, light grey and dark grey, moist, medium plasticity, no odor, medium stiff
5 - 10	--	21	5.5': 96 6': 32 6.67': 80	5' - 6.75': 0 - 3% fine to coarse sand, 40 - 60% clay, 37 - 57% silt, dark grey, moist, medium to high plasticity, moderate fuel odor, soft to stiff
10 - 15	--	60	10.5': 105 11': 282	10' - 11': 40 - 50% silt, 50 - 60% clay, dark grey with brown, moist, medium to high plasticity, moderate fuel odor, medium stiff
			12': 485 13': 194	11' - 14': 0 - 3% fine to coarse sand, 40 - 60% clay, 37 - 60% silt, light grey, moist, medium to high plasticity, moderate fuel odor, stiff to medium stiff
			14': 135 14.67': 387	14' - 15': 40 - 60% clay, 40 - 60% silt, light brown, moist, medium to high plasticity, moderate fuel odor, stiff
15 - 20	--	60	16': 268 17': 636 18': 447	15 - 18': 0 - 3% fine to coarse sand, 50 - 60% clay, 37 - 50% silt, light brown, moist, medium to high plasticity, moderate to strong fuel odor, soft to medium stiff
				Continued on page 2

BGL - below ground level; EOB - end of boring; ppm - parts per million

SOIL BORING LOG

Project	30425-02	**Name**	Phase II ESA		
Location	Building 305	**Driller**	Jesse	Date:	12/19/2013
Soil Boring	DSB-4	**Assistant**	Henry	Weather:	Partly cloudy, 52 °F
Total Depth	27 ft	**Drilling Co.**	Plains Environ.		
Surface Elevation	--	**Drilling Method**	Geoprobe	Time Started:	1307
Geologist	M. Resch	**O.D.**	2.25 in	Time Finished:	1410
Sampling Method	Macrocore	**I.D.**	1.75 in		

SAMPLE DEPTH (ft)	BLOW COUNTS	RECOVERY (in.)	PID 10.6 eV (ppm)	SOIL DESCRIPTION
				Continued from page 1
	--	60	19': 84 19.67': 26	18' - 20': 0 - 3% fine gravel, 5 - 15% fine to coarse sand, 25 - 40% clay, 42 - 62% silt, light brown with yellow orange, moist to wet (not saturated), medium plasticity, stiff, moderate fuel odor
20 - 22.5	--	30	20.5': < 1 21': < 1	20' - 21.4': 0 - 3% fine gravel, 5 - 15% fine to coarse sand, 25 - 40% clay, 42 - 62% silt, light brown with yellow orange, moist to wet (not saturated), medium plasticity, stiff, no odor
			22': < 1	21.4' - 22.5': 50 - 60% clay, 40 - 50% silt, light brown, moist, medium to high plasticity, no odor, stiff
22.5 - 25	--	30	23': < 1	22.5' - 22.9": 50 - 60% clay, 40 - 50% silt, light brown, moist, medium to high plasticity, no odor, stiff
			23.5': < 1 24.5': < 1	22.9' - 25': 0 - 3% fine to coarse sand, 70 - 90% silt, 7 - 30% clay, non plastic to slight plasticity, light grey, moist, no odor, very stiff
25 - 27	--	24	25.5': < 1 26': < 1 27': < 1	25 - 27': 0 - 3% fine sand, 97 - 100% silt, light grey, dry to moist, non plastic, no odor, very stiff to hard, possible weathered bedrock
				Refusal @ 27' BGL EOB @ 27' BGL

BGL - below ground level; EOB - end of boring; ppm - parts per million

APPENDIX D
Laboratory Analytical Results

Phase II Environmental Site Assessment
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project #30425-02

Continental Analytical Services, Inc.

Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date and Time Received: 12/20/2013 0838
Continental File No.: 8576
Continental Order No.: 115867
P.O./Project No: 30425-02
Project ID: Bldg 305

Dear Mr. Resch:

This laboratory report, containing the samples indicated below, includes 55 pages for the analytical report, 1 page(s) for the chain of custody and/or analysis request, and 1 page(s) for the sample receipt form.

CAS LAB ID #	SAMPLE DESCRIPTION	SAMPLE TYPE	DATE SAMPLED
13121774	DSB-1/11-12	Solid	12/19/2013
13121774R	DSB-1/11-12	Solid	12/19/2013
13121775	DSB-1/22-24	Solid	12/19/2013
13121775R	DSB-1/22-24	Solid	12/19/2013
13121776	DSB-2/9-10	Solid	12/19/2013
13121777	DSB-2/25-27	Solid	12/19/2013
13121777R	DSB-2/25-27	Solid	12/19/2013
13121778	DSB-3/10-13	Solid	12/19/2013
13121779	DSB-3/22.5-25	Solid	12/19/2013
13121779R	DSB-3/22.5-25	Solid	12/19/2013
13121780	DSB-4/10-12	Solid	12/19/2013
13121781	DSB-4/25-27	Solid	12/19/2013
13121781R	DSB-4/25-27	Solid	12/19/2013
13121782	Trip Blank	Liquid	

The Appendix and Quality Control sections are integral parts of this laboratory report and may contain important data qualifiers.

All results are reported on a wet weight basis unless otherwise stated.

Samples will be retained for thirty days unless Continental is otherwise notified.

Continental is accredited by the State of Kansas through the National Environmental Laboratory Accreditation Program (NELAP). The results contained in this report were obtained using Continental's Standard Operating Procedures. These procedures are in substantial compliance with the approved methods referenced and the standards published by NELAP unless otherwise noted in the Appendix and Quality Control sections of this report.

This report may not be reproduced, except in full, without written approval from Continental Analytical Services, Inc.

Thank you for choosing Continental for this project.

CONTINENTAL ANALYTICAL SERVICES, INC.

Clifford J. Baker
Technical Manager

Gregory J. Groene
Project Manager

525 N. Eighth St. - Salina, KS 67401
785-827-1273 800-535-3076 Fax 785-823-7830
KDHE Environmental Laboratory Accreditation No. E-10146

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121774
Sample Description: DSB-1/11-12

Date Sampled: 12/19/2013
Time Sampled: 0955

Analysis	Concentration	Units	Dilution Factor	LOQ
Polynuclear Aromatics by HPLC	SR			
Acenaphthene	ND(0.07) QC	mg/kg	1.0	0.07
Acenaphthylene	ND(0.07)	mg/kg	1.0	0.07
Anthracene	OC	mg/kg	1.0	0.005
Benzo(a)anthracene	OC	mg/kg	1.0	0.005
Benzo(a)pyrene	0.060 QC	mg/kg	1.0	0.005
Benzo(b)fluoranthene	0.068	mg/kg	1.0	0.005
Benzo(g,h,i)perylene	0.018	mg/kg	1.0	0.005
Benzo(k)fluoranthene	0.033	mg/kg	1.0	0.005
Chrysene	OC	mg/kg	1.0	0.005
Dibenzo(a,h)anthracene	ND(0.005)	mg/kg	1.0	0.005
Fluoranthene	OC	mg/kg	1.0	0.01
Fluorene	0.06 QC	mg/kg	1.0	0.01
Indeno(1,2,3-cd)pyrene	0.020	mg/kg	1.0	0.005
Naphthalene	ND(0.05)	mg/kg	1.0	0.05
Phenanthrene	OC	mg/kg	1.0	0.02
Pyrene	OC	mg/kg	1.0	0.01
Volatile Organics (73 Compds)	SR			
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	46.3	20
1,1,1-Trichloroethane	ND(20)	µg/kg	46.3	20
1,1,2,2-Tetrachloroethane	ND(150) M	µg/kg	46.3	20
1,1,2-Trichloroethane	ND(100) M	µg/kg	46.3	20
1,1-Dichloroethane	ND(20)	µg/kg	46.3	20
1,1-Dichloroethene	ND(20)	µg/kg	46.3	20
1,1-Dichloropropene	ND(20)	µg/kg	46.3	20
1,2,3-Trichlorobenzene	ND(20) M	µg/kg	46.3	20
1,2,3-Trichloropropane	ND(170) M	µg/kg	46.3	46
1,2,4-Trichlorobenzene	ND(20)	µg/kg	46.3	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	46.3	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	46.3	500
1,2-Dibromoethane	ND(20)	µg/kg	46.3	20
1,2-Dichlorobenzene	ND(20)	µg/kg	46.3	20
1,2-Dichloroethane	ND(100) M	µg/kg	46.3	20
1,2-Dichloropropane	ND(70) M	µg/kg	46.3	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	46.3	20
1,3-Dichlorobenzene	ND(20)	µg/kg	46.3	20
1,3-Dichloropropane	ND(20)	µg/kg	46.3	20
1,4-Dichlorobenzene	ND(20)	µg/kg	46.3	20
2,2-Dichloropropane	ND(20) QC	µg/kg	46.3	20
2-Butanone	ND(1400) M	µg/kg	46.3	500

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121774
Sample Description: DSB-1/11-12

Date Sampled: 12/19/2013
Time Sampled: 0955

Analysis	Concentration	Units	Dilution Factor	LOQ
2-Chloroethylvinylether	ND(230) EV	µg/kg	46.3	230
2-Chlorotoluene	ND(20)	µg/kg	46.3	20
2-Hexanone	ND(6300) M	µg/kg	46.3	200
4-Chlorotoluene	ND(20)	µg/kg	46.3	20
4-Isopropyltoluene	ND(20)	µg/kg	46.3	20
4-Methyl-2-Pentanone	ND(31000) M E	µg/kg	46.3	200
Acetone	ND(500)	µg/kg	46.3	500
Acrolein	ND(1200) EV	µg/kg	46.3	1200
Acrylonitrile	ND(500)	µg/kg	46.3	500
Benzene	ND(20)	µg/kg	46.3	20
Bromobenzene	ND(20)	µg/kg	46.3	20
Bromochloromethane	ND(46)	µg/kg	46.3	46
Bromodichloromethane	ND(20)	µg/kg	46.3	20
Bromoform	ND(20)	µg/kg	46.3	20
Bromomethane	ND(46) QC	µg/kg	46.3	46
Carbon disulfide	ND(46)	µg/kg	46.3	46
Carbon tetrachloride	ND(20)	µg/kg	46.3	20
Chlorobenzene	ND(20)	µg/kg	46.3	20
Chloroethane	ND(20)	µg/kg	46.3	20
Chloroform	ND(20)	µg/kg	46.3	20
Chloromethane	ND(20)	µg/kg	46.3	20
Dibromochloromethane	ND(20)	µg/kg	46.3	20
Dibromomethane	ND(46)	µg/kg	46.3	46
Dichlorodifluoromethane	ND(20)	µg/kg	46.3	20
Ethylbenzene	ND(20)	µg/kg	46.3	20
Hexachlorobutadiene	ND(20)	µg/kg	46.3	20
Hexane	ND(46)	µg/kg	46.3	46
Isopropylbenzene	ND(20)	µg/kg	46.3	20
MTBE	ND(20)	µg/kg	46.3	20
Methyl iodide	ND(46)	µg/kg	46.3	46
Methylene chloride	ND(20)	µg/kg	46.3	20
Naphthalene	ND(20) QC	µg/kg	46.3	20
Styrene	ND(20)	µg/kg	46.3	20
Tetrachloroethene	ND(20)	µg/kg	46.3	20
Toluene	ND(20)	µg/kg	46.3	20
Trichloroethene	ND(20)	µg/kg	46.3	20
Trichlorofluoromethane	ND(20)	µg/kg	46.3	20
Vinyl acetate	ND(230) EV	µg/kg	46.3	200
Vinyl chloride	ND(20)	µg/kg	46.3	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	46.3	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	46.3	20

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121774
Sample Description: DSB-1/11-12

Date Sampled: 12/19/2013
Time Sampled: 0955

Analysis	Concentration	Units	Dilution Factor	LOQ
m+p-Xylene	ND(46)	µg/kg	46.3	46
n-Butylbenzene	96 EC	µg/kg	46.3	20
n-Propylbenzene	30	µg/kg	46.3	20
o-Xylene	ND(20)	µg/kg	46.3	20
sec-butylbenzene	160	µg/kg	46.3	20
tert-Butylbenzene	ND(20)	µg/kg	46.3	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	46.3	20
trans-1,3-dichloropropene	ND(20)	µg/kg	46.3	20
trans-1,4-Dichloro-2-butene	ND(1600) M	µg/kg	46.3	230
Freon TF	ND(20)	µg/kg	46.3	20
Lead, Total, ICP	11 ED	mg/kg	5.0	2
Solids, Total	78.6	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Polynuclear Aromatics by	01/02/14 1500	01/09/14 1119	140102-1	2LC3009	SPA	8310
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1113	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/06/14 1612	131226-1	2IP4006	KMW	6010B
Solids, Total	N/A	01/02/14 1645	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
PNA by HPLC Preparation Method						3540C
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121774

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121774R
Sample Description: DSB-1/11-12

Date Sampled: 12/19/2013
Time Sampled: 0955

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Polynuclear Aromatics by HPLC	SR			
Acenaphthene	ND(0.7)	mg/kg	10	0.7
Acenaphthylene	ND(0.7)	mg/kg	10	0.7
Anthracene	0.08 QC	mg/kg	10	0.05
Benzo(a)anthracene	0.12 QC	mg/kg	10	0.05
Benzo(a)pyrene	0.06	mg/kg	10	0.05
Benzo(b)fluoranthene	0.07 QC	mg/kg	10	0.05
Benzo(g,h,i)perylene	ND(0.05) QC	mg/kg	10	0.05
Benzo(k)fluoranthene	ND(0.05) QC	mg/kg	10	0.05
Chrysene	0.07 QC	mg/kg	10	0.05
Dibenzo(a,h)anthracene	ND(0.05)	mg/kg	10	0.05
Fluoranthene	0.4	mg/kg	10	0.1
Fluorene	ND(0.1) QC	mg/kg	10	0.1
Indeno(1,2,3-cd)pyrene	ND(0.05)	mg/kg	10	0.05
Naphthalene	ND(0.5)	mg/kg	10	0.5
Phenanthrene	0.3	mg/kg	10	0.2
Pyrene	0.3	mg/kg	10	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Polynuclear Aromatics by	01/02/14 1500	01/13/14 1646	140102-1	1LC3013	SPA	8310
PNA by HPLC Preparation Method						3540C

Conclusion of Lab Number: 13121774R

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121775
Sample Description: DSB-1/22-24

Date Sampled: 12/19/2013
Time Sampled: 0957

Analysis	Concentration	Units	Dilution Factor	LOQ
Polynuclear Aromatics by HPLC				
Acenaphthene	ND(0.07)	mg/kg	1.0	0.07
Acenaphthylene	ND(0.07)	mg/kg	1.0	0.07
Anthracene	ND(0.005)	mg/kg	1.0	0.005
Benzo(a)anthracene	ND(0.005)	mg/kg	1.0	0.005
Benzo(a)pyrene	ND(0.005)	mg/kg	1.0	0.005
Benzo(b)fluoranthene	ND(0.005)	mg/kg	1.0	0.005
Benzo(g,h,i)perylene	ND(0.005)	mg/kg	1.0	0.005
Benzo(k)fluoranthene	ND(0.005)	mg/kg	1.0	0.005
Chrysene	ND(0.005)	mg/kg	1.0	0.005
Dibenzo(a,h)anthracene	ND(0.005)	mg/kg	1.0	0.005
Fluoranthene	ND(0.01)	mg/kg	1.0	0.01
Fluorene	ND(0.01)	mg/kg	1.0	0.01
Indeno(1,2,3-cd)pyrene	ND(0.005)	mg/kg	1.0	0.005
Naphthalene	ND(0.05)	mg/kg	1.0	0.05
Phenanthrene	ND(0.02)	mg/kg	1.0	0.02
Pyrene	ND(0.01)	mg/kg	1.0	0.01
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(30)	µg/kg	58.3	30
1,1,1-Trichloroethane	ND(30)	µg/kg	58.3	30
1,1,2,2-Tetrachloroethane	ND(30)	µg/kg	58.3	30
1,1,2-Trichloroethane	ND(30)	µg/kg	58.3	30
1,1-Dichloroethane	ND(30)	µg/kg	58.3	30
1,1-Dichloroethene	ND(30)	µg/kg	58.3	30
1,1-Dichloropropene	ND(30)	µg/kg	58.3	30
1,2,3-Trichlorobenzene	ND(30)	µg/kg	58.3	30
1,2,3-Trichloropropane	ND(58)	µg/kg	58.3	58
1,2,4-Trichlorobenzene	ND(30)	µg/kg	58.3	30
1,2,4-Trimethylbenzene	ND(30)	µg/kg	58.3	30
1,2-Dibromo-3-chloropropane	ND(600)	µg/kg	58.3	600
1,2-Dibromoethane	ND(30)	µg/kg	58.3	30
1,2-Dichlorobenzene	ND(30)	µg/kg	58.3	30
1,2-Dichloroethane	ND(30)	µg/kg	58.3	30
1,2-Dichloropropane	ND(30)	µg/kg	58.3	30
1,3,5-Trimethylbenzene	ND(30)	µg/kg	58.3	30
1,3-Dichlorobenzene	ND(30)	µg/kg	58.3	30
1,3-Dichloropropane	ND(30)	µg/kg	58.3	30
1,4-Dichlorobenzene	ND(30)	µg/kg	58.3	30
2,2-Dichloropropane	ND(30) QC	µg/kg	58.3	30
2-Butanone	ND(600)	µg/kg	58.3	600

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121775
Sample Description: DSB-1/22-24

Date Sampled: 12/19/2013
Time Sampled: 0957

Analysis	Concentration	Units	Dilution Factor	LOQ
2-Chloroethylvinylether	ND(290) EV	µg/kg	58.3	290
2-Chlorotoluene	ND(30)	µg/kg	58.3	30
2-Hexanone	ND(300)	µg/kg	58.3	300
4-Chlorotoluene	ND(30)	µg/kg	58.3	30
4-Isopropyltoluene	ND(30)	µg/kg	58.3	30
4-Methyl-2-Pentanone	ND(770) M E	µg/kg	58.3	300
Acetone	ND(600)	µg/kg	58.3	600
Acrolein	ND(1500) EV	µg/kg	58.3	1500
Acrylonitrile	ND(600)	µg/kg	58.3	600
Benzene	ND(30)	µg/kg	58.3	30
Bromobenzene	ND(30)	µg/kg	58.3	30
Bromochloromethane	ND(58)	µg/kg	58.3	58
Bromodichloromethane	ND(30)	µg/kg	58.3	30
Bromoform	ND(30)	µg/kg	58.3	30
Bromomethane	ND(58) QC	µg/kg	58.3	58
Carbon disulfide	ND(58)	µg/kg	58.3	58
Carbon tetrachloride	ND(30)	µg/kg	58.3	30
Chlorobenzene	ND(30)	µg/kg	58.3	30
Chloroethane	ND(30)	µg/kg	58.3	30
Chloroform	ND(30)	µg/kg	58.3	30
Chloromethane	ND(30)	µg/kg	58.3	30
Dibromochloromethane	ND(30)	µg/kg	58.3	30
Dibromomethane	ND(58)	µg/kg	58.3	58
Dichlorodifluoromethane	ND(30)	µg/kg	58.3	30
Ethylbenzene	ND(30)	µg/kg	58.3	30
Hexachlorobutadiene	ND(30)	µg/kg	58.3	30
Hexane	ND(58)	µg/kg	58.3	58
Isopropylbenzene	ND(30)	µg/kg	58.3	30
MTBE	ND(30)	µg/kg	58.3	30
Methyl iodide	ND(58)	µg/kg	58.3	58
Methylene chloride	ND(30)	µg/kg	58.3	30
Naphthalene	ND(30) QC	µg/kg	58.3	30
Styrene	ND(30)	µg/kg	58.3	30
Tetrachloroethene	ND(30)	µg/kg	58.3	30
Toluene	ND(30)	µg/kg	58.3	30
Trichloroethene	ND(30)	µg/kg	58.3	30
Trichlorofluoromethane	ND(30)	µg/kg	58.3	30
Vinyl acetate	ND(290) EV	µg/kg	58.3	300
Vinyl chloride	ND(30)	µg/kg	58.3	30
cis-1,2-Dichloroethene	ND(30)	µg/kg	58.3	30
cis-1,3-Dichloropropene	ND(30)	µg/kg	58.3	30

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121775
Sample Description: DSB-1/22-24

Date Sampled: 12/19/2013
Time Sampled: 0957

Analysis	Concentration	Units	Dilution Factor	LOQ
m+p-Xylene	ND(58)	µg/kg	58.3	58
n-Butylbenzene	ND(30)	µg/kg	58.3	30
n-Propylbenzene	ND(30)	µg/kg	58.3	30
o-Xylene	ND(30)	µg/kg	58.3	30
sec-butylbenzene	ND(30)	µg/kg	58.3	30
tert-Butylbenzene	ND(30)	µg/kg	58.3	30
trans-1,2-Dichloroethene	ND(30)	µg/kg	58.3	30
trans-1,3-dichloropropene	ND(30)	µg/kg	58.3	30
trans-1,4-Dichloro-2-butene	ND(290)	µg/kg	58.3	290
Freon TF	ND(30)	µg/kg	58.3	30
Lead, Total, ICP	2.1	mg/kg	1.0	0.3
Solids, Total	84.0	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Polynuclear Aromatics by	01/02/14 1500	01/09/14 1643	140102-1	2LC3009	SPA	8310
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1149	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/01/14 0454	131226-1	16IP4365	KMW	6010B
Solids, Total	N/A	01/02/14 1646	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
PNA by HPLC Preparation Method						3540C
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121775

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121775R
Sample Description: DSB-1/22-24

Date Sampled: 12/19/2013
Time Sampled: 0957

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)	SR			
1,1,1,2-Tetrachloroethane	ND(4.2)	µg/kg	0.83	4.2
1,1,1-Trichloroethane	ND(4.2)	µg/kg	0.83	4.2
1,1,2,2-Tetrachloroethane	ND(4.2) QC	µg/kg	0.83	4.2
1,1,2-Trichloroethane	ND(4.2)	µg/kg	0.83	4.2
1,1-Dichloroethane	ND(4.2)	µg/kg	0.83	4.2
1,1-Dichloroethene	ND(4.2)	µg/kg	0.83	4.2
1,1-Dichloropropene	ND(4.2) QC	µg/kg	0.83	4.2
1,2,3-Trichlorobenzene	ND(4.2)	µg/kg	0.83	4.2
1,2,3-Trichloropropane	ND(4.2)	µg/kg	0.83	4.2
1,2,4-Trichlorobenzene	ND(4.2)	µg/kg	0.83	4.2
1,2,4-Trimethylbenzene	ND(4.2)	µg/kg	0.83	4.2
1,2-Dibromo-3-chloropropane	ND(4.2) QC	µg/kg	0.83	4.2
1,2-Dibromoethane	ND(4.2)	µg/kg	0.83	4.2
1,2-Dichlorobenzene	ND(4.2)	µg/kg	0.83	4.2
1,2-Dichloroethane	ND(4.2) QC	µg/kg	0.83	4.2
1,2-Dichloropropane	ND(4.2) QC	µg/kg	0.83	4.2
1,3,5-Trimethylbenzene	ND(4.2)	µg/kg	0.83	4.2
1,3-Dichlorobenzene	ND(4.2)	µg/kg	0.83	4.2
1,3-Dichloropropane	ND(4.2)	µg/kg	0.83	4.2
1,4-Dichlorobenzene	ND(4.2)	µg/kg	0.83	4.2
2,2-Dichloropropane	ND(4.2)	µg/kg	0.83	4.2
2-Butanone	ND(21) QC	µg/kg	0.83	21
2-Chloroethylvinylether	ND(4.2) EV	µg/kg	0.83	4.2
2-Chlorotoluene	ND(4.2)	µg/kg	0.83	4.2
2-Hexanone	ND(21)	µg/kg	0.83	21
4-Chlorotoluene	ND(4.2)	µg/kg	0.83	4.2
4-Isopropyltoluene	ND(4.2)	µg/kg	0.83	4.2
4-Methyl-2-Pentanone	ND(21) QC	µg/kg	0.83	21
Acetone	ND(21)	µg/kg	0.83	21
Acrolein	ND(21) EV	µg/kg	0.83	21
Acrylonitrile	ND(21)	µg/kg	0.83	21
Benzene	ND(4.2)	µg/kg	0.83	4.2
Bromobenzene	ND(4.2)	µg/kg	0.83	4.2
Bromochloromethane	ND(4.2)	µg/kg	0.83	4.2
Bromodichloromethane	ND(4.2) QC	µg/kg	0.83	4.2
Bromoform	ND(4.2)	µg/kg	0.83	4.2
Bromomethane	ND(4.2) QC	µg/kg	0.83	4.2

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121775R
Sample Description: DSB-1/22-24

Date Sampled: 12/19/2013
Time Sampled: 0957

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Carbon disulfide	ND(4.2)	µg/kg	0.83	4.2
Carbon tetrachloride	ND(4.2)	µg/kg	0.83	4.2
Chlorobenzene	ND(4.2)	µg/kg	0.83	4.2
Chloroethane	ND(4.2)	µg/kg	0.83	4.2
Chloroform	ND(4.2)	µg/kg	0.83	4.2
Chloromethane	ND(4.2) QC	µg/kg	0.83	4.2
Dibromochloromethane	ND(4.2)	µg/kg	0.83	4.2
Dibromomethane	ND(4.2)	µg/kg	0.83	4.2
Dichlorodifluoromethane	ND(4.2) QC	µg/kg	0.83	4.2
Ethylbenzene	ND(4.2)	µg/kg	0.83	4.2
Hexachlorobutadiene	ND(4.2)	µg/kg	0.83	4.2
Hexane	ND(4.2) QC	µg/kg	0.83	4.2
Isopropylbenzene	ND(4.2)	µg/kg	0.83	4.2
MTBE	ND(4.2)	µg/kg	0.83	4.2
Methyl iodide	ND(4.2)	µg/kg	0.83	4.2
Methylene chloride	ND(4.2)	µg/kg	0.83	4.2
Naphthalene	ND(4.2)	µg/kg	0.83	4.2
Styrene	ND(4.2)	µg/kg	0.83	4.2
Tetrachloroethene	ND(4.2)	µg/kg	0.83	4.2
Toluene	ND(4.2)	µg/kg	0.83	4.2
Trichloroethene	ND(4.2)	µg/kg	0.83	4.2
Trichlorofluoromethane	ND(4.2)	µg/kg	0.83	4.2
Vinyl acetate	ND(42) EV	µg/kg	0.83	40
Vinyl chloride	ND(4.2) QC	µg/kg	0.83	4.2
cis-1,2-Dichloroethene	ND(4.2)	µg/kg	0.83	4.2
cis-1,3-Dichloropropene	ND(4.2) QC	µg/kg	0.83	4.2
m+p-Xylene	ND(8.3)	µg/kg	0.83	8
n-Butylbenzene	ND(4.2)	µg/kg	0.83	4.2
n-Propylbenzene	ND(4.2)	µg/kg	0.83	4.2
o-Xylene	ND(4.2)	µg/kg	0.83	4.2
sec-butylbenzene	ND(4.2)	µg/kg	0.83	4.2
tert-Butylbenzene	ND(4.2)	µg/kg	0.83	4.2
trans-1,2-Dichloroethene	ND(4.2)	µg/kg	0.83	4.2
trans-1,3-dichloropropene	ND(4.2)	µg/kg	0.83	4.2
trans-1,4-Dichloro-2-butene	ND(4.2)	µg/kg	0.83	4.2
Freon TF	ND(4.2)	µg/kg	0.83	4.2

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	N/A	12/30/13 1640	1MS4364	1MS4364	GMA	8260B
Volatile Analysis Preparation Method						5035A

Conclusion of Lab Number: 13121775R

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121776
Sample Description: DSB-2/9-10

Date Sampled: 12/19/2013
Time Sampled: 1116

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	49.5	20
1,1,1-Trichloroethane	ND(20)	µg/kg	49.5	20
1,1,2,2-Tetrachloroethane	ND(150) M	µg/kg	49.5	20
1,1,2-Trichloroethane	ND(340) M	µg/kg	49.5	20
1,1-Dichloroethane	ND(20)	µg/kg	49.5	20
1,1-Dichloroethene	ND(20)	µg/kg	49.5	20
1,1-Dichloropropene	ND(20)	µg/kg	49.5	20
1,2,3-Trichlorobenzene	ND(20)	µg/kg	49.5	20
1,2,3-Trichloropropane	ND(50)	µg/kg	49.5	50
1,2,4-Trichlorobenzene	ND(20)	µg/kg	49.5	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	49.5	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	49.5	500
1,2-Dibromoethane	ND(20)	µg/kg	49.5	20
1,2-Dichlorobenzene	ND(20)	µg/kg	49.5	20
1,2-Dichloroethane	ND(250) M	µg/kg	49.5	20
1,2-Dichloropropane	ND(270) M	µg/kg	49.5	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	49.5	20
1,3-Dichlorobenzene	ND(20)	µg/kg	49.5	20
1,3-Dichloropropane	ND(20)	µg/kg	49.5	20
1,4-Dichlorobenzene	ND(20)	µg/kg	49.5	20
2,2-Dichloropropane	ND(20) QC	µg/kg	49.5	20
2-Butanone	ND(6000) M	µg/kg	49.5	500
2-Chloroethylvinylether	ND(1600) M EV	µg/kg	49.5	250
2-Chlorotoluene	ND(20)	µg/kg	49.5	20
2-Hexanone	ND(23000) M E	µg/kg	49.5	200
4-Chlorotoluene	ND(20)	µg/kg	49.5	20
4-Isopropyltoluene	ND(20)	µg/kg	49.5	20
4-Methyl-2-Pentanone	ND(72000) M E	µg/kg	49.5	200
Acetone	ND(900) M	µg/kg	49.5	500
Acrolein	ND(1200) EV	µg/kg	49.5	1200
Acrylonitrile	ND(500)	µg/kg	49.5	500
Benzene	ND(20)	µg/kg	49.5	20
Bromobenzene	ND(20)	µg/kg	49.5	20
Bromochloromethane	ND(50)	µg/kg	49.5	50
Bromodichloromethane	ND(80) M	µg/kg	49.5	20
Bromoform	ND(20)	µg/kg	49.5	20
Bromomethane	ND(50) QC	µg/kg	49.5	50
Carbon disulfide	ND(50)	µg/kg	49.5	50
Carbon tetrachloride	ND(20)	µg/kg	49.5	20
Chlorobenzene	ND(20)	µg/kg	49.5	20

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121776
Sample Description: DSB-2/9-10

Date Sampled: 12/19/2013
Time Sampled: 1116

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(20)	µg/kg	49.5	20
Chloroform	ND(20)	µg/kg	49.5	20
Chloromethane	ND(20)	µg/kg	49.5	20
Dibromochloromethane	ND(20)	µg/kg	49.5	20
Dibromomethane	ND(50)	µg/kg	49.5	50
Dichlorodifluoromethane	ND(20)	µg/kg	49.5	20
Ethylbenzene	ND(20)	µg/kg	49.5	20
Hexachlorobutadiene	ND(20)	µg/kg	49.5	20
Hexane	ND(80) M	µg/kg	49.5	50
Isopropylbenzene	82	µg/kg	49.5	20
MTBE	ND(20)	µg/kg	49.5	20
Methyl iodide	ND(50)	µg/kg	49.5	50
Methylene chloride	ND(20)	µg/kg	49.5	20
Naphthalene	ND(20) QC	µg/kg	49.5	20
Styrene	ND(20)	µg/kg	49.5	20
Tetrachloroethene	ND(20)	µg/kg	49.5	20
Toluene	ND(20)	µg/kg	49.5	20
Trichloroethene	ND(20)	µg/kg	49.5	20
Trichlorofluoromethane	ND(20)	µg/kg	49.5	20
Vinyl acetate	ND(250) EV	µg/kg	49.5	200
Vinyl chloride	ND(20)	µg/kg	49.5	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	49.5	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	49.5	20
m+p-Xylene	ND(50)	µg/kg	49.5	50
n-Butylbenzene	50 EC	µg/kg	49.5	20
n-Propylbenzene	220	µg/kg	49.5	20
o-Xylene	ND(20)	µg/kg	49.5	20
sec-butylbenzene	30	µg/kg	49.5	20
tert-Butylbenzene	ND(20)	µg/kg	49.5	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	49.5	20
trans-1,3-dichloropropene	ND(20)	µg/kg	49.5	20
trans-1,4-Dichloro-2-butene	ND(3700) M	µg/kg	49.5	250
Freon TF	ND(20)	µg/kg	49.5	20
Lead, Total, ICP	14 ED	mg/kg	5.0	2
Solids, Total	78.5	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1225	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/06/14 1616	131226-1	2IP4006	KMW	6010B
Solids, Total	N/A	01/02/14 1647	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121776

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121777
Sample Description: DSB-2/25-27

Date Sampled: 12/19/2013
Time Sampled: 1125

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(30)	µg/kg	50.7	30
1,1,1-Trichloroethane	ND(30)	µg/kg	50.7	30
1,1,2,2-Tetrachloroethane	ND(30)	µg/kg	50.7	30
1,1,2-Trichloroethane	ND(30)	µg/kg	50.7	30
1,1-Dichloroethane	ND(30)	µg/kg	50.7	30
1,1-Dichloroethene	ND(30)	µg/kg	50.7	30
1,1-Dichloropropene	ND(30)	µg/kg	50.7	30
1,2,3-Trichlorobenzene	ND(30)	µg/kg	50.7	30
1,2,3-Trichloropropane	ND(51)	µg/kg	50.7	51
1,2,4-Trichlorobenzene	ND(30)	µg/kg	50.7	30
1,2,4-Trimethylbenzene	ND(30)	µg/kg	50.7	30
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	50.7	500
1,2-Dibromoethane	ND(30)	µg/kg	50.7	30
1,2-Dichlorobenzene	ND(30)	µg/kg	50.7	30
1,2-Dichloroethane	ND(30)	µg/kg	50.7	30
1,2-Dichloropropane	ND(30)	µg/kg	50.7	30
1,3,5-Trimethylbenzene	ND(30)	µg/kg	50.7	30
1,3-Dichlorobenzene	ND(30)	µg/kg	50.7	30
1,3-Dichloropropane	ND(30)	µg/kg	50.7	30
1,4-Dichlorobenzene	ND(30)	µg/kg	50.7	30
2,2-Dichloropropane	ND(30) QC	µg/kg	50.7	30
2-Butanone	ND(500)	µg/kg	50.7	500
2-Chloroethylvinylether	ND(250) EV	µg/kg	50.7	250
2-Chlorotoluene	ND(30)	µg/kg	50.7	30
2-Hexanone	ND(500) M E	µg/kg	50.7	300
4-Chlorotoluene	ND(30)	µg/kg	50.7	30
4-Isopropyltoluene	ND(30)	µg/kg	50.7	30
4-Methyl-2-Pentanone	ND(2200) M E	µg/kg	50.7	300
Acetone	ND(500)	µg/kg	50.7	500
Acrolein	ND(1300) EV	µg/kg	50.7	1300
Acrylonitrile	ND(500)	µg/kg	50.7	500
Benzene	ND(30)	µg/kg	50.7	30
Bromobenzene	ND(30)	µg/kg	50.7	30
Bromochloromethane	ND(51)	µg/kg	50.7	51
Bromodichloromethane	ND(30)	µg/kg	50.7	30
Bromoform	ND(30)	µg/kg	50.7	30
Bromomethane	ND(51) QC	µg/kg	50.7	51
Carbon disulfide	ND(51)	µg/kg	50.7	51
Carbon tetrachloride	ND(30)	µg/kg	50.7	30
Chlorobenzene	ND(30)	µg/kg	50.7	30

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121777
Sample Description: DSB-2/25-27

Date Sampled: 12/19/2013
Time Sampled: 1125

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(30)	µg/kg	50.7	30
Chloroform	ND(30)	µg/kg	50.7	30
Chloromethane	ND(30)	µg/kg	50.7	30
Dibromochloromethane	ND(30)	µg/kg	50.7	30
Dibromomethane	ND(51)	µg/kg	50.7	51
Dichlorodifluoromethane	ND(30)	µg/kg	50.7	30
Ethylbenzene	ND(30)	µg/kg	50.7	30
Hexachlorobutadiene	ND(30)	µg/kg	50.7	30
Hexane	ND(51)	µg/kg	50.7	51
Isopropylbenzene	ND(30)	µg/kg	50.7	30
MTBE	ND(30)	µg/kg	50.7	30
Methyl iodide	ND(51)	µg/kg	50.7	51
Methylene chloride	ND(30)	µg/kg	50.7	30
Naphthalene	ND(30) QC	µg/kg	50.7	30
Styrene	ND(30)	µg/kg	50.7	30
Tetrachloroethene	ND(30)	µg/kg	50.7	30
Toluene	ND(30)	µg/kg	50.7	30
Trichloroethene	ND(30)	µg/kg	50.7	30
Trichlorofluoromethane	ND(30)	µg/kg	50.7	30
Vinyl acetate	ND(250) EV	µg/kg	50.7	300
Vinyl chloride	ND(30)	µg/kg	50.7	30
cis-1,2-Dichloroethene	ND(30)	µg/kg	50.7	30
cis-1,3-Dichloropropene	ND(30)	µg/kg	50.7	30
m+p-Xylene	ND(51)	µg/kg	50.7	51
n-Butylbenzene	ND(30)	µg/kg	50.7	30
n-Propylbenzene	ND(30)	µg/kg	50.7	30
o-Xylene	ND(30)	µg/kg	50.7	30
sec-butylbenzene	ND(30)	µg/kg	50.7	30
tert-Butylbenzene	ND(30)	µg/kg	50.7	30
trans-1,2-Dichloroethene	ND(30)	µg/kg	50.7	30
trans-1,3-dichloropropene	ND(30)	µg/kg	50.7	30
trans-1,4-Dichloro-2-butene	ND(250)	µg/kg	50.7	250
Freon TF	ND(30)	µg/kg	50.7	30
Lead, Total, ICP	1.9	mg/kg	1.0	0.3
Solids, Total	81.8	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1301	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/01/14 0511	131226-1	17IP4365	KMW	6010B
Solids, Total	N/A	01/02/14 1648	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121777

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121777R
Sample Description: DSB-2/25-27

Date Sampled: 12/19/2013
Time Sampled: 1125

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)	SR			
1,1,1,2-Tetrachloroethane	ND(4.3)	µg/kg	0.85	4.3
1,1,1-Trichloroethane	ND(4.3)	µg/kg	0.85	4.3
1,1,2,2-Tetrachloroethane	ND(4.3) QC	µg/kg	0.85	4.3
1,1,2-Trichloroethane	ND(4.3)	µg/kg	0.85	4.3
1,1-Dichloroethane	ND(4.3)	µg/kg	0.85	4.3
1,1-Dichloroethene	ND(4.3)	µg/kg	0.85	4.3
1,1-Dichloropropene	ND(4.3) QC	µg/kg	0.85	4.3
1,2,3-Trichlorobenzene	ND(4.3)	µg/kg	0.85	4.3
1,2,3-Trichloropropane	ND(4.3)	µg/kg	0.85	4.3
1,2,4-Trichlorobenzene	ND(4.3)	µg/kg	0.85	4.3
1,2,4-Trimethylbenzene	ND(4.3)	µg/kg	0.85	4.3
1,2-Dibromo-3-chloropropane	ND(4.3) QC	µg/kg	0.85	4.3
1,2-Dibromoethane	ND(4.3)	µg/kg	0.85	4.3
1,2-Dichlorobenzene	ND(4.3)	µg/kg	0.85	4.3
1,2-Dichloroethane	ND(4.3) QC	µg/kg	0.85	4.3
1,2-Dichloropropane	ND(4.3) QC	µg/kg	0.85	4.3
1,3,5-Trimethylbenzene	ND(4.3)	µg/kg	0.85	4.3
1,3-Dichlorobenzene	ND(4.3)	µg/kg	0.85	4.3
1,3-Dichloropropane	ND(4.3)	µg/kg	0.85	4.3
1,4-Dichlorobenzene	ND(4.3)	µg/kg	0.85	4.3
2,2-Dichloropropane	ND(4.3)	µg/kg	0.85	4.3
2-Butanone	ND(21) QC	µg/kg	0.85	21
2-Chloroethylvinylether	ND(4.3) EV	µg/kg	0.85	4.3
2-Chlorotoluene	ND(4.3)	µg/kg	0.85	4.3
2-Hexanone	ND(21)	µg/kg	0.85	21
4-Chlorotoluene	ND(4.3)	µg/kg	0.85	4.3
4-Isopropyltoluene	ND(4.3)	µg/kg	0.85	4.3
4-Methyl-2-Pentanone	ND(21) QC	µg/kg	0.85	21
Acetone	ND(21)	µg/kg	0.85	21
Acrolein	ND(21) EV	µg/kg	0.85	21
Acrylonitrile	ND(21)	µg/kg	0.85	21
Benzene	ND(4.3)	µg/kg	0.85	4.3
Bromobenzene	ND(4.3)	µg/kg	0.85	4.3
Bromochloromethane	ND(4.3)	µg/kg	0.85	4.3
Bromodichloromethane	ND(4.3) QC	µg/kg	0.85	4.3
Bromoform	ND(4.3)	µg/kg	0.85	4.3
Bromomethane	ND(4.3) QC	µg/kg	0.85	4.3

-Continued-

Sample Results

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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121777R
Sample Description: DSB-2/25-27

Date Sampled: 12/19/2013
Time Sampled: 1125

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Carbon disulfide	ND(4.3)	µg/kg	0.85	4.3
Carbon tetrachloride	ND(4.3)	µg/kg	0.85	4.3
Chlorobenzene	ND(4.3)	µg/kg	0.85	4.3
Chloroethane	ND(4.3)	µg/kg	0.85	4.3
Chloroform	ND(4.3)	µg/kg	0.85	4.3
Chloromethane	ND(4.3) QC	µg/kg	0.85	4.3
Dibromochloromethane	ND(4.3)	µg/kg	0.85	4.3
Dibromomethane	ND(4.3)	µg/kg	0.85	4.3
Dichlorodifluoromethane	ND(4.3) QC	µg/kg	0.85	4.3
Ethylbenzene	ND(4.3)	µg/kg	0.85	4.3
Hexachlorobutadiene	ND(4.3)	µg/kg	0.85	4.3
Hexane	ND(4.3) QC	µg/kg	0.85	4.3
Isopropylbenzene	ND(4.3)	µg/kg	0.85	4.3
MTBE	ND(4.3)	µg/kg	0.85	4.3
Methyl iodide	ND(4.3)	µg/kg	0.85	4.3
Methylene chloride	ND(4.3)	µg/kg	0.85	4.3
Naphthalene	ND(4.3)	µg/kg	0.85	4.3
Styrene	ND(4.3)	µg/kg	0.85	4.3
Tetrachloroethene	ND(4.3)	µg/kg	0.85	4.3
Toluene	ND(4.3)	µg/kg	0.85	4.3
Trichloroethene	ND(4.3)	µg/kg	0.85	4.3
Trichlorofluoromethane	ND(4.3)	µg/kg	0.85	4.3
Vinyl acetate	ND(43) EV	µg/kg	0.85	40
Vinyl chloride	ND(4.3) QC	µg/kg	0.85	4.3
cis-1,2-Dichloroethene	ND(4.3)	µg/kg	0.85	4.3
cis-1,3-Dichloropropene	ND(4.3) QC	µg/kg	0.85	4.3
m+p-Xylene	ND(8.5)	µg/kg	0.85	9
n-Butylbenzene	ND(4.3)	µg/kg	0.85	4.3
n-Propylbenzene	ND(4.3)	µg/kg	0.85	4.3
o-Xylene	ND(4.3)	µg/kg	0.85	4.3
sec-butylbenzene	ND(4.3)	µg/kg	0.85	4.3
tert-Butylbenzene	ND(4.3)	µg/kg	0.85	4.3
trans-1,2-Dichloroethene	ND(4.3)	µg/kg	0.85	4.3
trans-1,3-dichloropropene	ND(4.3)	µg/kg	0.85	4.3
trans-1,4-Dichloro-2-butene	ND(4.3)	µg/kg	0.85	4.3
Freon TF	ND(4.3)	µg/kg	0.85	4.3

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
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Suite 260
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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	N/A	12/30/13 1716	1MS4364	1MS4364	GMA	8260B
Volatile Analysis Preparation Method						5035A

Conclusion of Lab Number: 13121777R

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
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Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121778
Sample Description: DSB-3/10-13

Date Sampled: 12/19/2013
Time Sampled: 1518

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	46.6	20
1,1,1-Trichloroethane	ND(20)	µg/kg	46.6	20
1,1,2,2-Tetrachloroethane	ND(100) M	µg/kg	46.6	20
1,1,2-Trichloroethane	ND(300) M	µg/kg	46.6	20
1,1-Dichloroethane	ND(20)	µg/kg	46.6	20
1,1-Dichloroethene	ND(20)	µg/kg	46.6	20
1,1-Dichloropropene	ND(20)	µg/kg	46.6	20
1,2,3-Trichlorobenzene	ND(20)	µg/kg	46.6	20
1,2,3-Trichloropropane	ND(47)	µg/kg	46.6	47
1,2,4-Trichlorobenzene	ND(20)	µg/kg	46.6	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	46.6	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	46.6	500
1,2-Dibromoethane	ND(20)	µg/kg	46.6	20
1,2-Dichlorobenzene	ND(20)	µg/kg	46.6	20
1,2-Dichloroethane	ND(190) M	µg/kg	46.6	20
1,2-Dichloropropane	ND(140) M	µg/kg	46.6	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	46.6	20
1,3-Dichlorobenzene	ND(20)	µg/kg	46.6	20
1,3-Dichloropropane	ND(20)	µg/kg	46.6	20
1,4-Dichlorobenzene	ND(20)	µg/kg	46.6	20
2,2-Dichloropropane	ND(20) QC	µg/kg	46.6	20
2-Butanone	ND(2800) M	µg/kg	46.6	500
2-Chloroethylvinylether	ND(230) EV	µg/kg	46.6	230
2-Chlorotoluene	ND(20)	µg/kg	46.6	20
2-Hexanone	ND(1500) M	µg/kg	46.6	200
4-Chlorotoluene	ND(20)	µg/kg	46.6	20
4-Isopropyltoluene	ND(20)	µg/kg	46.6	20
4-Methyl-2-Pentanone	ND(61000) M E	µg/kg	46.6	200
Acetone	ND(2000) M	µg/kg	46.6	500
Acrolein	ND(1200) EV	µg/kg	46.6	1200
Acrylonitrile	ND(500)	µg/kg	46.6	500
Benzene	ND(20)	µg/kg	46.6	20
Bromobenzene	ND(20)	µg/kg	46.6	20
Bromochloromethane	ND(47)	µg/kg	46.6	47
Bromodichloromethane	ND(20)	µg/kg	46.6	20
Bromoform	ND(20)	µg/kg	46.6	20
Bromomethane	ND(47) QC	µg/kg	46.6	47
Carbon disulfide	ND(47)	µg/kg	46.6	47
Carbon tetrachloride	ND(20)	µg/kg	46.6	20
Chlorobenzene	ND(20)	µg/kg	46.6	20

-Continued-

Sample Results

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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121778
Sample Description: DSB-3/10-13

Date Sampled: 12/19/2013
Time Sampled: 1518

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(20)	µg/kg	46.6	20
Chloroform	ND(20)	µg/kg	46.6	20
Chloromethane	ND(20)	µg/kg	46.6	20
Dibromochloromethane	ND(20)	µg/kg	46.6	20
Dibromomethane	ND(47)	µg/kg	46.6	47
Dichlorodifluoromethane	ND(20)	µg/kg	46.6	20
Ethylbenzene	ND(20)	µg/kg	46.6	20
Hexachlorobutadiene	ND(20)	µg/kg	46.6	20
Hexane	ND(47)	µg/kg	46.6	47
Isopropylbenzene	ND(20)	µg/kg	46.6	20
MTBE	ND(20)	µg/kg	46.6	20
Methyl iodide	ND(47)	µg/kg	46.6	47
Methylene chloride	ND(20)	µg/kg	46.6	20
Naphthalene	ND(20) QC	µg/kg	46.6	20
Styrene	ND(20)	µg/kg	46.6	20
Tetrachloroethene	ND(20)	µg/kg	46.6	20
Toluene	ND(20)	µg/kg	46.6	20
Trichloroethene	ND(20)	µg/kg	46.6	20
Trichlorofluoromethane	ND(20)	µg/kg	46.6	20
Vinyl acetate	ND(230) EV	µg/kg	46.6	200
Vinyl chloride	ND(20)	µg/kg	46.6	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	46.6	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	46.6	20
m+p-Xylene	ND(47)	µg/kg	46.6	47
n-Butylbenzene	ND(20)	µg/kg	46.6	20
n-Propylbenzene	40	µg/kg	46.6	20
o-Xylene	ND(20)	µg/kg	46.6	20
sec-butylbenzene	ND(20)	µg/kg	46.6	20
tert-Butylbenzene	ND(20)	µg/kg	46.6	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	46.6	20
trans-1,3-dichloropropene	ND(20)	µg/kg	46.6	20
trans-1,4-Dichloro-2-butene	ND(2400) M	µg/kg	46.6	230
Freon TF	ND(20)	µg/kg	46.6	20
Lead, Total, ICP	13 ED	mg/kg	5.0	2
Solids, Total	78.1	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1337	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/06/14 1620	131226-1	2IP4006	KMW	6010B
Solids, Total	N/A	01/02/14 1649	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121778

Sample Results

Client: Dragun Corporation
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30445 Northwestern Highway
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Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121779
Sample Description: DSB-3/22.5-25

Date Sampled: 12/19/2013
Time Sampled: 1525

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	49.9	20
1,1,1-Trichloroethane	ND(20)	µg/kg	49.9	20
1,1,2,2-Tetrachloroethane	ND(20)	µg/kg	49.9	20
1,1,2-Trichloroethane	ND(20)	µg/kg	49.9	20
1,1-Dichloroethane	ND(20)	µg/kg	49.9	20
1,1-Dichloroethene	ND(20)	µg/kg	49.9	20
1,1-Dichloropropene	ND(20)	µg/kg	49.9	20
1,2,3-Trichlorobenzene	ND(20)	µg/kg	49.9	20
1,2,3-Trichloropropane	ND(50)	µg/kg	49.9	50
1,2,4-Trichlorobenzene	ND(20)	µg/kg	49.9	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	49.9	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	49.9	500
1,2-Dibromoethane	ND(20)	µg/kg	49.9	20
1,2-Dichlorobenzene	ND(20)	µg/kg	49.9	20
1,2-Dichloroethane	ND(20)	µg/kg	49.9	20
1,2-Dichloropropane	ND(20)	µg/kg	49.9	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	49.9	20
1,3-Dichlorobenzene	ND(20)	µg/kg	49.9	20
1,3-Dichloropropane	ND(20)	µg/kg	49.9	20
1,4-Dichlorobenzene	ND(20)	µg/kg	49.9	20
2,2-Dichloropropane	ND(20) QC	µg/kg	49.9	20
2-Butanone	ND(500)	µg/kg	49.9	500
2-Chloroethylvinylether	ND(250) EV	µg/kg	49.9	250
2-Chlorotoluene	ND(20)	µg/kg	49.9	20
2-Hexanone	ND(600) M E	µg/kg	49.9	200
4-Chlorotoluene	ND(20)	µg/kg	49.9	20
4-Isopropyltoluene	ND(20)	µg/kg	49.9	20
4-Methyl-2-Pentanone	ND(2600) M E	µg/kg	49.9	200
Acetone	ND(500)	µg/kg	49.9	500
Acrolein	ND(1200) EV	µg/kg	49.9	1200
Acrylonitrile	ND(500)	µg/kg	49.9	500
Benzene	ND(20)	µg/kg	49.9	20
Bromobenzene	ND(20)	µg/kg	49.9	20
Bromochloromethane	ND(50)	µg/kg	49.9	50
Bromodichloromethane	ND(20)	µg/kg	49.9	20
Bromoform	ND(20)	µg/kg	49.9	20
Bromomethane	ND(50) QC	µg/kg	49.9	50
Carbon disulfide	ND(50)	µg/kg	49.9	50
Carbon tetrachloride	ND(20)	µg/kg	49.9	20
Chlorobenzene	ND(20)	µg/kg	49.9	20

-Continued-

Sample Results

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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121779
Sample Description: DSB-3/22.5-25

Date Sampled: 12/19/2013
Time Sampled: 1525

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(20)	µg/kg	49.9	20
Chloroform	ND(20)	µg/kg	49.9	20
Chloromethane	ND(20)	µg/kg	49.9	20
Dibromochloromethane	ND(20)	µg/kg	49.9	20
Dibromomethane	ND(50)	µg/kg	49.9	50
Dichlorodifluoromethane	ND(20)	µg/kg	49.9	20
Ethylbenzene	ND(20)	µg/kg	49.9	20
Hexachlorobutadiene	ND(20)	µg/kg	49.9	20
Hexane	ND(50)	µg/kg	49.9	50
Isopropylbenzene	ND(20)	µg/kg	49.9	20
MTBE	ND(20)	µg/kg	49.9	20
Methyl iodide	ND(50)	µg/kg	49.9	50
Methylene chloride	ND(20)	µg/kg	49.9	20
Naphthalene	ND(20) QC	µg/kg	49.9	20
Styrene	ND(20)	µg/kg	49.9	20
Tetrachloroethene	ND(20)	µg/kg	49.9	20
Toluene	ND(20)	µg/kg	49.9	20
Trichloroethene	ND(20)	µg/kg	49.9	20
Trichlorofluoromethane	ND(20)	µg/kg	49.9	20
Vinyl acetate	ND(250) EV	µg/kg	49.9	200
Vinyl chloride	ND(20)	µg/kg	49.9	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	49.9	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	49.9	20
m+p-Xylene	ND(50)	µg/kg	49.9	50
n-Butylbenzene	ND(20)	µg/kg	49.9	20
n-Propylbenzene	ND(20)	µg/kg	49.9	20
o-Xylene	ND(20)	µg/kg	49.9	20
sec-butylbenzene	ND(20)	µg/kg	49.9	20
tert-Butylbenzene	ND(20)	µg/kg	49.9	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	49.9	20
trans-1,3-dichloropropene	ND(20)	µg/kg	49.9	20
trans-1,4-Dichloro-2-butene	ND(250)	µg/kg	49.9	250
Freon TF	ND(20)	µg/kg	49.9	20
Lead, Total, ICP	2.0	mg/kg	1.0	0.3
Solids, Total	83.9	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1509	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/01/14 0520	131226-1	17IP4365	KMW	6010B
Solids, Total	N/A	01/02/14 1649	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121779

Sample Results

Client: Dragun Corporation
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Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121779R
Sample Description: DSB-3/22.5-25

Date Sampled: 12/19/2013
Time Sampled: 1525

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)	SR			
1,1,1,2-Tetrachloroethane	ND(4.3)	µg/kg	0.86	4.3
1,1,1-Trichloroethane	ND(4.3)	µg/kg	0.86	4.3
1,1,2,2-Tetrachloroethane	ND(4.3) QC	µg/kg	0.86	4.3
1,1,2-Trichloroethane	ND(4.3)	µg/kg	0.86	4.3
1,1-Dichloroethane	ND(4.3)	µg/kg	0.86	4.3
1,1-Dichloroethene	ND(4.3)	µg/kg	0.86	4.3
1,1-Dichloropropene	ND(4.3) QC	µg/kg	0.86	4.3
1,2,3-Trichlorobenzene	ND(4.3)	µg/kg	0.86	4.3
1,2,3-Trichloropropane	ND(4.3)	µg/kg	0.86	4.3
1,2,4-Trichlorobenzene	ND(4.3)	µg/kg	0.86	4.3
1,2,4-Trimethylbenzene	ND(4.3)	µg/kg	0.86	4.3
1,2-Dibromo-3-chloropropane	ND(4.3) QC	µg/kg	0.86	4.3
1,2-Dibromoethane	ND(4.3)	µg/kg	0.86	4.3
1,2-Dichlorobenzene	ND(4.3)	µg/kg	0.86	4.3
1,2-Dichloroethane	ND(4.3) QC	µg/kg	0.86	4.3
1,2-Dichloropropane	ND(4.3) QC	µg/kg	0.86	4.3
1,3,5-Trimethylbenzene	ND(4.3)	µg/kg	0.86	4.3
1,3-Dichlorobenzene	ND(4.3)	µg/kg	0.86	4.3
1,3-Dichloropropane	ND(4.3)	µg/kg	0.86	4.3
1,4-Dichlorobenzene	ND(4.3)	µg/kg	0.86	4.3
2,2-Dichloropropane	ND(4.3)	µg/kg	0.86	4.3
2-Butanone	ND(22) QC	µg/kg	0.86	22
2-Chloroethylvinylether	ND(4.3) EV	µg/kg	0.86	4.3
2-Chlorotoluene	ND(4.3)	µg/kg	0.86	4.3
2-Hexanone	ND(22)	µg/kg	0.86	22
4-Chlorotoluene	ND(4.3)	µg/kg	0.86	4.3
4-Isopropyltoluene	ND(4.3)	µg/kg	0.86	4.3
4-Methyl-2-Pentanone	ND(22) QC	µg/kg	0.86	22
Acetone	ND(22)	µg/kg	0.86	22
Acrolein	ND(22) EV	µg/kg	0.86	22
Acrylonitrile	ND(22)	µg/kg	0.86	22
Benzene	ND(4.3)	µg/kg	0.86	4.3
Bromobenzene	ND(4.3)	µg/kg	0.86	4.3
Bromochloromethane	ND(4.3)	µg/kg	0.86	4.3
Bromodichloromethane	ND(4.3) QC	µg/kg	0.86	4.3
Bromoform	ND(4.3)	µg/kg	0.86	4.3
Bromomethane	ND(4.3) QC	µg/kg	0.86	4.3

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121779R
Sample Description: DSB-3/22.5-25

Date Sampled: 12/19/2013
Time Sampled: 1525

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Carbon disulfide	ND(4.3)	µg/kg	0.86	4.3
Carbon tetrachloride	ND(4.3)	µg/kg	0.86	4.3
Chlorobenzene	ND(4.3)	µg/kg	0.86	4.3
Chloroethane	ND(4.3)	µg/kg	0.86	4.3
Chloroform	ND(4.3)	µg/kg	0.86	4.3
Chloromethane	ND(4.3) QC	µg/kg	0.86	4.3
Dibromochloromethane	ND(4.3)	µg/kg	0.86	4.3
Dibromomethane	ND(4.3)	µg/kg	0.86	4.3
Dichlorodifluoromethane	ND(4.3) QC	µg/kg	0.86	4.3
Ethylbenzene	ND(4.3)	µg/kg	0.86	4.3
Hexachlorobutadiene	ND(4.3)	µg/kg	0.86	4.3
Hexane	ND(4.3) QC	µg/kg	0.86	4.3
Isopropylbenzene	ND(4.3)	µg/kg	0.86	4.3
MTBE	ND(4.3)	µg/kg	0.86	4.3
Methyl iodide	ND(4.3)	µg/kg	0.86	4.3
Methylene chloride	ND(4.3)	µg/kg	0.86	4.3
Naphthalene	ND(4.3)	µg/kg	0.86	4.3
Styrene	ND(4.3)	µg/kg	0.86	4.3
Tetrachloroethene	ND(4.3)	µg/kg	0.86	4.3
Toluene	ND(4.3)	µg/kg	0.86	4.3
Trichloroethene	ND(4.3)	µg/kg	0.86	4.3
Trichlorofluoromethane	ND(4.3)	µg/kg	0.86	4.3
Vinyl acetate	ND(43) EV	µg/kg	0.86	40
Vinyl chloride	ND(4.3) QC	µg/kg	0.86	4.3
cis-1,2-Dichloroethene	ND(4.3)	µg/kg	0.86	4.3
cis-1,3-Dichloropropene	ND(4.3) QC	µg/kg	0.86	4.3
m+p-Xylene	ND(8.7)	µg/kg	0.86	9
n-Butylbenzene	ND(4.3)	µg/kg	0.86	4.3
n-Propylbenzene	ND(4.3)	µg/kg	0.86	4.3
o-Xylene	ND(4.3)	µg/kg	0.86	4.3
sec-butylbenzene	ND(4.3)	µg/kg	0.86	4.3
tert-Butylbenzene	ND(4.3)	µg/kg	0.86	4.3
trans-1,2-Dichloroethene	ND(4.3)	µg/kg	0.86	4.3
trans-1,3-dichloropropene	ND(4.3)	µg/kg	0.86	4.3
trans-1,4-Dichloro-2-butene	ND(4.3)	µg/kg	0.86	4.3
Freon TF	ND(4.3)	µg/kg	0.86	4.3

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	N/A	12/30/13 1752	1MS4364	1MS4364	GMA	8260B
Volatile Analysis Preparation Method						5035A

Conclusion of Lab Number: 13121779R

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121780
Sample Description: DSB-4/10-12

Date Sampled: 12/19/2013
Time Sampled: 1410

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	48.4	20
1,1,1-Trichloroethane	ND(20)	µg/kg	48.4	20
1,1,2,2-Tetrachloroethane	ND(390) M	µg/kg	48.4	20
1,1,2-Trichloroethane	ND(430) M	µg/kg	48.4	20
1,1-Dichloroethane	ND(20)	µg/kg	48.4	20
1,1-Dichloroethene	ND(20)	µg/kg	48.4	20
1,1-Dichloropropene	ND(20)	µg/kg	48.4	20
1,2,3-Trichlorobenzene	ND(100) M	µg/kg	48.4	20
1,2,3-Trichloropropane	ND(270) M	µg/kg	48.4	48
1,2,4-Trichlorobenzene	ND(50) M	µg/kg	48.4	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	48.4	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	48.4	500
1,2-Dibromoethane	ND(20)	µg/kg	48.4	20
1,2-Dichlorobenzene	ND(20)	µg/kg	48.4	20
1,2-Dichloroethane	ND(140) M	µg/kg	48.4	20
1,2-Dichloropropane	ND(30) M	µg/kg	48.4	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	48.4	20
1,3-Dichlorobenzene	ND(20)	µg/kg	48.4	20
1,3-Dichloropropane	ND(20)	µg/kg	48.4	20
1,4-Dichlorobenzene	ND(20)	µg/kg	48.4	20
2,2-Dichloropropane	ND(20) QC	µg/kg	48.4	20
2-Butanone	ND(3000) M	µg/kg	48.4	500
2-Chloroethylvinylether	ND(320) M EV	µg/kg	48.4	240
2-Chlorotoluene	ND(20)	µg/kg	48.4	20
2-Hexanone	ND(920) M	µg/kg	48.4	200
4-Chlorotoluene	ND(20)	µg/kg	48.4	20
4-Isopropyltoluene	ND(20)	µg/kg	48.4	20
4-Methyl-2-Pentanone	ND(29000) M E	µg/kg	48.4	200
Acetone	ND(5000) M	µg/kg	48.4	500
Acrolein	ND(1200) EV	µg/kg	48.4	1200
Acrylonitrile	ND(500)	µg/kg	48.4	500
Benzene	ND(20)	µg/kg	48.4	20
Bromobenzene	ND(20)	µg/kg	48.4	20
Bromochloromethane	ND(48)	µg/kg	48.4	48
Bromodichloromethane	ND(70) M	µg/kg	48.4	20
Bromoform	ND(20)	µg/kg	48.4	20
Bromomethane	ND(48) QC	µg/kg	48.4	48
Carbon disulfide	ND(48)	µg/kg	48.4	48
Carbon tetrachloride	ND(20)	µg/kg	48.4	20
Chlorobenzene	ND(20)	µg/kg	48.4	20

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121780
Sample Description: DSB-4/10-12

Date Sampled: 12/19/2013
Time Sampled: 1410

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(20)	µg/kg	48.4	20
Chloroform	ND(20)	µg/kg	48.4	20
Chloromethane	ND(20)	µg/kg	48.4	20
Dibromochloromethane	ND(20)	µg/kg	48.4	20
Dibromomethane	ND(48)	µg/kg	48.4	48
Dichlorodifluoromethane	ND(20)	µg/kg	48.4	20
Ethylbenzene	ND(20)	µg/kg	48.4	20
Hexachlorobutadiene	ND(20)	µg/kg	48.4	20
Hexane	ND(48)	µg/kg	48.4	48
Isopropylbenzene	40	µg/kg	48.4	20
MTBE	ND(20)	µg/kg	48.4	20
Methyl iodide	ND(48)	µg/kg	48.4	48
Methylene chloride	ND(20)	µg/kg	48.4	20
Naphthalene	ND(60) M QC	µg/kg	48.4	20
Styrene	ND(20)	µg/kg	48.4	20
Tetrachloroethene	ND(20)	µg/kg	48.4	20
Toluene	ND(20)	µg/kg	48.4	20
Trichloroethene	ND(20)	µg/kg	48.4	20
Trichlorofluoromethane	ND(20)	µg/kg	48.4	20
Vinyl acetate	ND(240) EV	µg/kg	48.4	200
Vinyl chloride	ND(20)	µg/kg	48.4	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	48.4	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	48.4	20
m+p-Xylene	ND(48)	µg/kg	48.4	48
n-Butylbenzene	61 EC	µg/kg	48.4	20
n-Propylbenzene	92	µg/kg	48.4	20
o-Xylene	ND(20)	µg/kg	48.4	20
sec-butylbenzene	150	µg/kg	48.4	20
tert-Butylbenzene	ND(20)	µg/kg	48.4	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	48.4	20
trans-1,3-dichloropropene	ND(20)	µg/kg	48.4	20
trans-1,4-Dichloro-2-butene	ND(1600) M	µg/kg	48.4	240
Freon TF	ND(20)	µg/kg	48.4	20
Lead, Total, ICP	13 ED	mg/kg	5.0	2
Solids, Total	78.7	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1545	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/06/14 1624	131226-1	2IP4006	KMW	6010B
Solids, Total	N/A	01/02/14 1650	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121780

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121781
Sample Description: DSB-4/25-27

Date Sampled: 12/19/2013
Time Sampled: 1420

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(20)	µg/kg	47	20
1,1,1-Trichloroethane	ND(20)	µg/kg	47	20
1,1,2,2-Tetrachloroethane	ND(20)	µg/kg	47	20
1,1,2-Trichloroethane	ND(20)	µg/kg	47	20
1,1-Dichloroethane	ND(20)	µg/kg	47	20
1,1-Dichloroethene	ND(20)	µg/kg	47	20
1,1-Dichloropropene	ND(20)	µg/kg	47	20
1,2,3-Trichlorobenzene	ND(20)	µg/kg	47	20
1,2,3-Trichloropropane	ND(47)	µg/kg	47	47
1,2,4-Trichlorobenzene	ND(20)	µg/kg	47	20
1,2,4-Trimethylbenzene	ND(20)	µg/kg	47	20
1,2-Dibromo-3-chloropropane	ND(500)	µg/kg	47	500
1,2-Dibromoethane	ND(20)	µg/kg	47	20
1,2-Dichlorobenzene	ND(20)	µg/kg	47	20
1,2-Dichloroethane	ND(20)	µg/kg	47	20
1,2-Dichloropropane	ND(20)	µg/kg	47	20
1,3,5-Trimethylbenzene	ND(20)	µg/kg	47	20
1,3-Dichlorobenzene	ND(20)	µg/kg	47	20
1,3-Dichloropropane	ND(20)	µg/kg	47	20
1,4-Dichlorobenzene	ND(20)	µg/kg	47	20
2,2-Dichloropropane	ND(20) QC	µg/kg	47	20
2-Butanone	ND(500)	µg/kg	47	500
2-Chloroethylvinylether	ND(230) EV	µg/kg	47	240
2-Chlorotoluene	ND(20)	µg/kg	47	20
2-Hexanone	ND(300) M	µg/kg	47	200
4-Chlorotoluene	ND(20)	µg/kg	47	20
4-Isopropyltoluene	ND(20)	µg/kg	47	20
4-Methyl-2-Pentanone	ND(700) M	µg/kg	47	200
Acetone	ND(500)	µg/kg	47	500
Acrolein	ND(1200) EV	µg/kg	47	1200
Acrylonitrile	ND(500)	µg/kg	47	500
Benzene	ND(20)	µg/kg	47	20
Bromobenzene	ND(20)	µg/kg	47	20
Bromochloromethane	ND(47)	µg/kg	47	47
Bromodichloromethane	ND(20)	µg/kg	47	20
Bromoform	ND(20)	µg/kg	47	20
Bromomethane	ND(47) QC	µg/kg	47	47
Carbon disulfide	ND(47)	µg/kg	47	47
Carbon tetrachloride	ND(20)	µg/kg	47	20
Chlorobenzene	ND(20)	µg/kg	47	20

-Continued-

Sample Results

Client: Dragun Corporation
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30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121781
Sample Description: DSB-4/25-27

Date Sampled: 12/19/2013
Time Sampled: 1420

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(20)	µg/kg	47	20
Chloroform	ND(20)	µg/kg	47	20
Chloromethane	ND(20)	µg/kg	47	20
Dibromochloromethane	ND(20)	µg/kg	47	20
Dibromomethane	ND(47)	µg/kg	47	47
Dichlorodifluoromethane	ND(20)	µg/kg	47	20
Ethylbenzene	ND(20)	µg/kg	47	20
Hexachlorobutadiene	ND(20)	µg/kg	47	20
Hexane	ND(47)	µg/kg	47	47
Isopropylbenzene	ND(20)	µg/kg	47	20
MTBE	ND(20)	µg/kg	47	20
Methyl iodide	ND(47)	µg/kg	47	47
Methylene chloride	ND(20)	µg/kg	47	20
Naphthalene	ND(20) QC	µg/kg	47	20
Styrene	ND(20)	µg/kg	47	20
Tetrachloroethene	ND(40) M	µg/kg	47	20
Toluene	ND(20)	µg/kg	47	20
Trichloroethene	ND(20)	µg/kg	47	20
Trichlorofluoromethane	ND(20)	µg/kg	47	20
Vinyl acetate	ND(230) EV	µg/kg	47	200
Vinyl chloride	ND(20)	µg/kg	47	20
cis-1,2-Dichloroethene	ND(20)	µg/kg	47	20
cis-1,3-Dichloropropene	ND(20)	µg/kg	47	20
m+p-Xylene	ND(47)	µg/kg	47	47
n-Butylbenzene	ND(20)	µg/kg	47	20
n-Propylbenzene	ND(20)	µg/kg	47	20
o-Xylene	ND(20)	µg/kg	47	20
sec-butylbenzene	ND(20)	µg/kg	47	20
tert-Butylbenzene	ND(20)	µg/kg	47	20
trans-1,2-Dichloroethene	ND(20)	µg/kg	47	20
trans-1,3-dichloropropene	ND(20)	µg/kg	47	20
trans-1,4-Dichloro-2-butene	ND(230)	µg/kg	47	240
Freon TF	ND(20)	µg/kg	47	20
Lead, Total, ICP	1.6	mg/kg	1.0	0.3
Solids, Total	85.5	% by weight	1.0	0.1

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	12/23/13 1200	12/27/13 1621	131223-1	1MS8361	GMA	8260B
Lead, Total, ICP	12/26/13 0711	01/01/14 0528	131226-1	17IP4365	KMW	6010B
Solids, Total	N/A	01/02/14 1651	140102-1	140102-1	KJH	ASTM D2216(Mod)
Volatile Analysis Preparation Method						5035A
ICP Metals Total Preparation Method						3050B

Conclusion of Lab Number: 13121781

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121781R
Sample Description: DSB-4/25-27

Date Sampled: 12/19/2013
Time Sampled: 1420

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)	SR			
1,1,1,2-Tetrachloroethane	ND(4.0)	µg/kg	0.8	4.0
1,1,1-Trichloroethane	ND(4.0)	µg/kg	0.8	4.0
1,1,2,2-Tetrachloroethane	ND(4.0) QC	µg/kg	0.8	4.0
1,1,2-Trichloroethane	ND(4.0)	µg/kg	0.8	4.0
1,1-Dichloroethane	ND(4.0)	µg/kg	0.8	4.0
1,1-Dichloroethene	ND(4.0)	µg/kg	0.8	4.0
1,1-Dichloropropene	ND(4.0) QC	µg/kg	0.8	4.0
1,2,3-Trichlorobenzene	ND(4.0)	µg/kg	0.8	4.0
1,2,3-Trichloropropane	ND(4.0)	µg/kg	0.8	4.0
1,2,4-Trichlorobenzene	ND(4.0)	µg/kg	0.8	4.0
1,2,4-Trimethylbenzene	ND(4.0)	µg/kg	0.8	4.0
1,2-Dibromo-3-chloropropane	ND(4.0) QC	µg/kg	0.8	4.0
1,2-Dibromoethane	ND(4.0)	µg/kg	0.8	4.0
1,2-Dichlorobenzene	ND(4.0)	µg/kg	0.8	4.0
1,2-Dichloroethane	ND(4.0) QC	µg/kg	0.8	4.0
1,2-Dichloropropane	ND(4.0) QC	µg/kg	0.8	4.0
1,3,5-Trimethylbenzene	ND(4.0)	µg/kg	0.8	4.0
1,3-Dichlorobenzene	ND(4.0)	µg/kg	0.8	4.0
1,3-Dichloropropane	ND(4.0)	µg/kg	0.8	4.0
1,4-Dichlorobenzene	ND(4.0)	µg/kg	0.8	4.0
2,2-Dichloropropane	ND(4.0)	µg/kg	0.8	4.0
2-Butanone	ND(20) QC	µg/kg	0.8	20
2-Chloroethylvinylether	ND(4.0) EV	µg/kg	0.8	4.0
2-Chlorotoluene	ND(4.0)	µg/kg	0.8	4.0
2-Hexanone	ND(20)	µg/kg	0.8	20
4-Chlorotoluene	ND(4.0)	µg/kg	0.8	4.0
4-Isopropyltoluene	ND(4.0)	µg/kg	0.8	4.0
4-Methyl-2-Pentanone	ND(20) QC	µg/kg	0.8	20
Acetone	ND(20)	µg/kg	0.8	20
Acrolein	ND(20) EV	µg/kg	0.8	20
Acrylonitrile	ND(20)	µg/kg	0.8	20
Benzene	ND(4.0)	µg/kg	0.8	4.0
Bromobenzene	ND(4.0)	µg/kg	0.8	4.0
Bromochloromethane	ND(4.0)	µg/kg	0.8	4.0
Bromodichloromethane	ND(4.0) QC	µg/kg	0.8	4.0
Bromoform	ND(4.0)	µg/kg	0.8	4.0
Bromomethane	ND(4.0) QC	µg/kg	0.8	4.0

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121781R
Sample Description: DSB-4/25-27

Date Sampled: 12/19/2013
Time Sampled: 1420

A laboratory number ending with R is from a second preparation and/or analysis of the sample.

Analysis	Concentration	Units	Dilution Factor	LOQ
Carbon disulfide	ND(4.0)	µg/kg	0.8	4.0
Carbon tetrachloride	ND(4.0)	µg/kg	0.8	4.0
Chlorobenzene	ND(4.0)	µg/kg	0.8	4.0
Chloroethane	ND(4.0)	µg/kg	0.8	4.0
Chloroform	ND(4.0)	µg/kg	0.8	4.0
Chloromethane	ND(4.0) QC	µg/kg	0.8	4.0
Dibromochloromethane	ND(4.0)	µg/kg	0.8	4.0
Dibromomethane	ND(4.0)	µg/kg	0.8	4.0
Dichlorodifluoromethane	ND(4.0) QC	µg/kg	0.8	4.0
Ethylbenzene	ND(4.0)	µg/kg	0.8	4.0
Hexachlorobutadiene	ND(4.0)	µg/kg	0.8	4.0
Hexane	ND(4.0) QC	µg/kg	0.8	4.0
Isopropylbenzene	ND(4.0)	µg/kg	0.8	4.0
MTBE	ND(4.0)	µg/kg	0.8	4.0
Methyl iodide	ND(4.0)	µg/kg	0.8	4.0
Methylene chloride	ND(4.0)	µg/kg	0.8	4.0
Naphthalene	ND(4.0)	µg/kg	0.8	4.0
Styrene	ND(4.0)	µg/kg	0.8	4.0
Tetrachloroethene	ND(4.0)	µg/kg	0.8	4.0
Toluene	ND(4.0)	µg/kg	0.8	4.0
Trichloroethene	ND(4.0)	µg/kg	0.8	4.0
Trichlorofluoromethane	ND(4.0)	µg/kg	0.8	4.0
Vinyl acetate	ND(40) EV	µg/kg	0.8	40
Vinyl chloride	ND(4.0) QC	µg/kg	0.8	4.0
cis-1,2-Dichloroethene	ND(4.0)	µg/kg	0.8	4.0
cis-1,3-Dichloropropene	ND(4.0) QC	µg/kg	0.8	4.0
m+p-Xylene	ND(8.1)	µg/kg	0.8	8
n-Butylbenzene	ND(4.0)	µg/kg	0.8	4.0
n-Propylbenzene	ND(4.0)	µg/kg	0.8	4.0
o-Xylene	ND(4.0)	µg/kg	0.8	4.0
sec-butylbenzene	ND(4.0)	µg/kg	0.8	4.0
tert-Butylbenzene	ND(4.0)	µg/kg	0.8	4.0
trans-1,2-Dichloroethene	ND(4.0)	µg/kg	0.8	4.0
trans-1,3-dichloropropene	ND(4.0)	µg/kg	0.8	4.0
trans-1,4-Dichloro-2-butene	ND(4.0)	µg/kg	0.8	4.0
Freon TF	ND(4.0)	µg/kg	0.8	4.0

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	N/A	12/30/13 1827	1MS4364	1MS4364	GMA	8260B
Volatile Analysis Preparation Method						5035A

Conclusion of Lab Number: 13121781R

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121782
Sample Description: Trip Blank

Date Sampled:
Time Sampled:

Analysis	Concentration	Units	Dilution Factor	LOQ
Volatile Organics (73 Compds)				
1,1,1,2-Tetrachloroethane	ND(0.5)	µg/L	1.0	0.5
1,1,1-Trichloroethane	ND(0.5)	µg/L	1.0	0.5
1,1,2,2-Tetrachloroethane	ND(0.5)	µg/L	1.0	0.5
1,1,2-Trichloroethane	ND(0.5)	µg/L	1.0	0.5
1,1-Dichloroethane	ND(0.5)	µg/L	1.0	0.5
1,1-Dichloroethene	ND(0.5)	µg/L	1.0	0.5
1,1-Dichloropropene	ND(0.5)	µg/L	1.0	0.5
1,2,3-Trichlorobenzene	ND(0.5)	µg/L	1.0	0.5
1,2,3-Trichloropropane	ND(1.0)	µg/L	1.0	1.0
1,2,4-Trichlorobenzene	ND(0.5)	µg/L	1.0	0.5
1,2,4-Trimethylbenzene	ND(0.5)	µg/L	1.0	0.5
1,2-Dibromo-3-chloropropane	ND(10)	µg/L	1.0	10
1,2-Dibromoethane	ND(0.5)	µg/L	1.0	0.5
1,2-Dichlorobenzene	ND(0.5)	µg/L	1.0	0.5
1,2-Dichloroethane	ND(0.5)	µg/L	1.0	0.5
1,2-Dichloropropane	ND(0.5)	µg/L	1.0	0.5
1,3,5-Trimethylbenzene	ND(0.5)	µg/L	1.0	0.5
1,3-Dichlorobenzene	ND(0.5)	µg/L	1.0	0.5
1,3-Dichloropropane	ND(0.5)	µg/L	1.0	0.5
1,4-Dichlorobenzene	ND(0.5)	µg/L	1.0	0.5
2,2-Dichloropropane	ND(0.5)	µg/L	1.0	0.5
2-Butanone	ND(10)	µg/L	1.0	10
2-Chloroethylvinylether	ND(5.0) EV	µg/L	1.0	5.0
2-Chlorotoluene	ND(0.5)	µg/L	1.0	0.5
2-Hexanone	ND(5)	µg/L	1.0	5
4-Chlorotoluene	ND(0.5)	µg/L	1.0	0.5
4-Isopropyltoluene	ND(0.5)	µg/L	1.0	0.5
4-Methyl-2-Pentanone	ND(5)	µg/L	1.0	5
Acetone	ND(10)	µg/L	1.0	10
Acrolein	ND(25) EV	µg/L	1.0	25
Acrylonitrile	ND(10)	µg/L	1.0	10
Benzene	ND(0.5)	µg/L	1.0	0.5
Bromobenzene	ND(0.5)	µg/L	1.0	0.5
Bromochloromethane	ND(1.0)	µg/L	1.0	1.0
Bromodichloromethane	ND(0.5)	µg/L	1.0	0.5
Bromoform	ND(0.5)	µg/L	1.0	0.5
Bromomethane	ND(1.0)	µg/L	1.0	1.0
Carbon disulfide	ND(1.0)	µg/L	1.0	1.0
Carbon tetrachloride	ND(0.5)	µg/L	1.0	0.5
Chlorobenzene	ND(0.5)	µg/L	1.0	0.5

-Continued-

Sample Results

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Lab Number: 13121782
Sample Description: Trip Blank

Date Sampled:
Time Sampled:

Analysis	Concentration	Units	Dilution Factor	LOQ
Chloroethane	ND(0.5)	µg/L	1.0	0.5
Chloroform	ND(0.5)	µg/L	1.0	0.5
Chloromethane	ND(0.5)	µg/L	1.0	0.5
Dibromochloromethane	ND(0.5)	µg/L	1.0	0.5
Dibromomethane	ND(1.0)	µg/L	1.0	1.0
Dichlorodifluoromethane	ND(0.5) QC	µg/L	1.0	0.5
Ethylbenzene	ND(0.5)	µg/L	1.0	0.5
Hexachlorobutadiene	ND(0.5)	µg/L	1.0	0.5
Hexane	ND(1.0)	µg/L	1.0	1.0
Isopropylbenzene	ND(0.5)	µg/L	1.0	0.5
MTBE	ND(0.5)	µg/L	1.0	0.5
Methyl iodide	ND(1.0)	µg/L	1.0	1.0
Methylene chloride	ND(0.5)	µg/L	1.0	0.5
Naphthalene	ND(0.5)	µg/L	1.0	0.5
Styrene	ND(0.5)	µg/L	1.0	0.5
Tetrachloroethene	ND(0.5)	µg/L	1.0	0.5
Toluene	ND(0.5)	µg/L	1.0	0.5
Trichloroethene	ND(0.5)	µg/L	1.0	0.5
Trichlorofluoromethane	ND(0.5)	µg/L	1.0	0.5
Vinyl acetate	ND(5) EV	µg/L	1.0	5
Vinyl chloride	ND(0.5)	µg/L	1.0	0.5
cis-1,2-Dichloroethene	ND(0.5)	µg/L	1.0	0.5
cis-1,3-Dichloropropene	ND(0.5)	µg/L	1.0	0.5
m+p-Xylene	ND(1.0)	µg/L	1.0	1.0
n-Butylbenzene	ND(0.5)	µg/L	1.0	0.5
n-Propylbenzene	ND(0.5)	µg/L	1.0	0.5
o-Xylene	ND(0.5)	µg/L	1.0	0.5
sec-butylbenzene	ND(0.5)	µg/L	1.0	0.5
tert-Butylbenzene	ND(0.5)	µg/L	1.0	0.5
trans-1,2-Dichloroethene	ND(0.5)	µg/L	1.0	0.5
trans-1,3-dichloropropene	ND(0.5)	µg/L	1.0	0.5
trans-1,4-Dichloro-2-butene	ND(5.0)	µg/L	1.0	5.0
Freon TF	ND(0.5)	µg/L	1.0	0.5

Analysis	Date/Time Prepared	Date/Time Analyzed	QC Batch	Inst. Batch	Analyst	Method(s)
Volatile Organics (73 Com	N/A	12/26/13 1510	1MS8360	1MS8360	GMA	8260B
Volatile Analysis Preparation Method						5030B

Conclusion of Lab Number: 13121782

Appendix

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

ND indicates not detected with the LOQ (Limit of Quantitation) in parentheses. The LOQ value has been adjusted for the dilution factor and percent solids, as applicable. Due to rounding of significant figures, the LOQ value may vary slightly from the reported concentration. The LOQ is the lowest concentration of the analytical standard that was used for calibrating the instrument. If an analytical standard is analyzed at the LOQ, an error of as much as +/- 50% can be expected.

All samples which require cooling were received at a temperature of less than 6 degrees Celsius.

No analysis with a holding time of seventy-two hours or less was performed in this Continental order.

Due to the absence of sampling date and/or time information, the holding time for preparation and/or analysis may not have been qualified correctly for applicable samples within this order number. In this case, the data may not be useable for compliance purposes.

SR - One or more surrogate recoveries for this analysis did not meet quality control limits. Please see the Quality Control Report for the sample surrogate data.

E - Concentration or reporting limit is an estimated value. Matrix interferences and/or sample heterogeneity were noted at the time of sample analysis.

EC - This result is estimated due to insufficient chromatographic resolution from other compounds.

ED - Due to matrix interferences, dilution was required on the sample matrix. Detectable amounts in the sample were not within the optimal quantification range of the instrument calibration curve.

EV - Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.

M - Reporting limit higher than normal due to matrix interferences.

OC - The response for this analyte exceeded the calibration range of the instrument. Sample dilution and reanalysis is necessary to obtain an accurate result. The reported result, if provided, is estimated.

QC - QC data qualifiers were noted. See the Quality Control Report.

Accreditation Summary

Client: Dragun Corporation
Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
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NELAP accreditation is issued under each EPA regulatory program for a given matrix/analyte/method combination. Continental is NELAP accredited for each matrix/analyte/method and EPA program cited in this Laboratory Report, except for those listed in the table below and for analyses performed in the field. For most of the analyses listed in the table, NELAP accreditation is not offered under the listed EPA program and Continental is NELAP accredited for the analysis, using the same analytical technology, but under a different EPA program. Continental's full NELAP accreditation status may be viewed at www.kdheks.gov/envlab. Note that unless qualified otherwise in the Laboratory Report, Continental performs all analyses, including each analysis listed in the table below, utilizing NELAP protocol.

Test	Analysis	Matrix-Regulatory Program	Method	CAS NELAP Accredited in Other Reg. Program
GL244	Solids, Total	S-RCRA	ASTM D2216(Mod)	Yes

Quality Control Report
Batch Summary

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Test Code	Testname	QC Batch	Method Blank Date/Time Analyzed	LCS Date/Time Analyzed	MS Lab No. Date/Time Analyzed
CL137	Polynuclear Aromatics by HPLC	140102-1	140102BLK1 01/09/14 0731	140102LCS1 01/09/14 1034	13121774MS 13121774RS 01/09/14 1205
Lab numbers associated with this batch: 13121774 13121774R 13121775					
MS371	Volatile Organics (73 Compds)	1MS8360	BLK1MS8360 12/26/13 1435	LCS1MS8360 12/26/13 1323	
Lab numbers associated with this batch: 13121782					
MS371	Volatile Organics (73 Compds)	131223-1	131223BLK1 12/27/13 1037	131223LCS1 12/27/13 1656	
Lab numbers associated with this batch: 13121774 13121775 13121776 13121777 13121778 13121779 13121780 13121781					
MS371	Volatile Organics (73 Compds)	1MS4364	BLK1MS4364 12/30/13 1605	LCS1MS4364 12/30/13 1453	13121868MS 12/31/13 0025
Lab numbers associated with this batch: 13121775R 13121777R 13121779R 13121781R					
SL311	Lead, Total, ICP	131226-1	131226BLK1 01/01/14 0348	131226LCS1 01/01/14 0352	13121485MS 01/01/14 0400
Lab numbers associated with this batch: 13121774 13121775 13121776 13121777 13121778 13121779 13121780 13121781					
GL244	Solids, Total	140102-1	140102BLK1 01/02/14 1644	N/A	13121774MS 01/02/14 1645
Lab numbers associated with this batch: 13121774 13121775 13121776 13121777 13121778 13121779 13121780 13121781					

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 131223-1	**For samples prepared on: 12/23/2013 1200**					**Spiked sample:**						
Volatile Organics (73 Compds)						MN	MN					
1,1,1,2-Tetrachloroethane	ND(30)	101	72.5-129	1000	µg/kg			66.0-163			**	21.2
1,1,1-Trichloroethane	ND(30)	108	72.1-127	1000	µg/kg			61.2-141			**	26.9
1,1,2,2-Tetrachloroethane	ND(30)	103	56.3-131	1000	µg/kg			0.10-252			**	29.5
1,1,2-Trichloroethane	ND(30)	101	70.4-124	1000	µg/kg			25.0-182			**	33.3
1,1-Dichloroethane	ND(30)	112	73.0-127	1000	µg/kg			62.7-146			**	28.1
1,1-Dichloroethene	ND(30)	112	74.1-133	1000	µg/kg			57.1-149			**	25.7
1,1-Dichloropropene	ND(30)	111	80.9-129	1000	µg/kg			75.5-127			**	13.7
1,2,3-Trichlorobenzene	ND(30)	95.9	72.5-129	1000	µg/kg			15.0-128			**	47.3
1,2,3-Trichloropropane	ND(50)	104	55.4-139	1000	µg/kg			0.10-295			**	26.2
1,2,4-Trichlorobenzene	ND(30)	97.5	72.9-134	1000	µg/kg			14.7-138			**	31.0
1,2,4-Trimethylbenzene	ND(30)	110.	77.0-138	1000	µg/kg			70.9-154			**	16.8
1,2-Dibromo-3-chloropropane	ND(500)	104	47.8-138	1000	µg/kg			13.5-218			**	48.0
1,2-Dibromoethane	ND(30)	97.8	71.7-123	1000	µg/kg			54.5-162			**	21.9
1,2-Dichlorobenzene	ND(30)	112	85.6-118	1000	µg/kg			76.8-131			**	24.6
1,2-Dichloroethane	ND(30)	110.	69.0-129	1000	µg/kg			56.8-146			**	27.7
1,2-Dichloropropane	ND(30)	113	73.1-124	1000	µg/kg			66.0-138			**	27.7
1,3,5-Trimethylbenzene	ND(30)	114	74.0-141	1000	µg/kg			77.0-150			**	20.7
1,3-Dichlorobenzene	ND(30)	117	87.9-121	1000	µg/kg			85.5-125			**	20.8
1,3-Dichloropropane	ND(30)	101	72.5-126	1000	µg/kg			48.4-185			**	23.3
1,4-Dichlorobenzene	ND(30)	101	91.0-114	1000	µg/kg			80.8-127			**	20.8
2,2-Dichloropropane	ND(30)	68.4 LL	77.3-131	1000	µg/kg			66.4-150			**	21.5
2-Butanone	ND(500)	119	41.7-158	4000	µg/kg			19.3-177			**	33.8
2-Chloroethylvinylether	ND(250) EV	106 EV	0.10-297	2000	µg/kg			0.10-343			**	32.1
2-Chlorotoluene	ND(30)	121	76.8-135	1000	µg/kg			82.7-153			**	13.1
2-Hexanone	ND(300)	99.4	51.7-144	4000	µg/kg			40.1-152			**	48.4
4-Chlorotoluene	ND(30)	122	76.1-138	1000	µg/kg			93.6-135			**	14.4
4-Isopropyltoluene	ND(30)	120.	56.9-165	1000	µg/kg			45.3-166			**	32.9
4-Methyl-2-Pentanone	ND(300)	114	55.8-139	4000	µg/kg			44.4-148			**	33.8
Acetone	ND(500)	124	45.0-159	4000	µg/kg			7.80-200			**	45.7
Acrolein	ND(1300) EV	90.3 EV	5.90-176	4000	µg/kg			0.10-119			**	89.1
Acrylonitrile	ND(500)	118	59.4-139	4000	µg/kg			5.40-170			**	40.5
Benzene	ND(30)	119	78.9-123	1000	µg/kg			68.3-136			**	20.3
Bromobenzene	ND(30)	109	79.5-119	1000	µg/kg			67.8-168			**	19.1
Bromochloromethane	ND(50)	108	75.7-121	1000	µg/kg			66.8-136			**	25.8
Bromodichloromethane	ND(30)	115	71.1-128	1000	µg/kg			56.5-138			**	31.4
Bromoform	ND(30)	107	64.7-123	1000	µg/kg			52.1-136			**	31.0
Bromomethane	ND(50)	55.5 LL	63.9-125	1000	µg/kg			43.6-151			**	34.0
Carbon disulfide	ND(50)	99.6	69.6-133	2000	µg/kg			56.9-145			**	22.3
Carbon tetrachloride	ND(30)	114	67.0-134	1000	µg/kg			58.9-137			**	30.5
Chlorobenzene	ND(30)	112	85.3-122	1000	µg/kg			76.4-130			**	22.2
Chloroethane	ND(30)	95.3	66.3-131	1000	µg/kg			48.9-156			**	31.5
Chloroform	ND(30)	112	73.5-122	1000	µg/kg			65.7-138			**	24.3
Chloromethane	ND(30)	81.8	60.9-132	1000	µg/kg			35.0-168			**	38.0
Dibromochloromethane	ND(30)	111	70.0-125	1000	µg/kg			62.1-140			**	25.3
Dibromomethane	ND(50)	109	73.4-128	1000	µg/kg			70.5-142			**	22.5
Dichlorodifluoromethane	ND(30)	69.8	51.6-151	1000	µg/kg			35.4-171			**	33.9
Ethylbenzene	ND(30)	108	83.1-129	1000	µg/kg			64.8-143			**	25.0
Hexachlorobutadiene	ND(30)	86.5	39.2-196	1000	µg/kg			0.10-213			**	38.3
Hexane	ND(50)	95.9	72.8-138	2000	µg/kg			15.2-154			**	19.3
Isopropylbenzene	ND(30)	114	72.8-149	1000	µg/kg			52.1-149			**	20.6
MTBE	ND(30)	102	66.1-131	1000	µg/kg			57.4-147			**	22.3

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 131223-1	**For samples prepared on: 12/23/2013 1200**					**Spiked sample:**						
Methyl iodide	ND(50)	96.9	75.5-123	2000	µg/kg			#			**	#
Methylene chloride	ND(30)	109	67.9-129	1000	µg/kg			52.2-148			**	30.2
Naphthalene	ND(30)	99.9	68.6-121	1000	µg/kg			21.7-148			**	50.2
Styrene	ND(30)	102	82.5-125	1000	µg/kg			65.8-127			**	24.6
Tetrachloroethene	ND(30)	99.2	75.0-137	1000	µg/kg			52.1-163			**	28.2
Toluene	ND(30)	108	81.2-122	1000	µg/kg			70.6-143			**	19.4
Trichloroethene	ND(30)	112	81.5-123	1000	µg/kg			62.0-149			**	26.8
Trichlorofluoromethane	ND(30)	87.9	79.4-127	1000	µg/kg			50.7-157			**	26.6
Vinyl acetate	ND(250) EV	106 EV	56.9-141	2000	µg/kg			0.10-170			**	38.4
Vinyl chloride	ND(30)	91.5	59.2-136	1000	µg/kg			41.2-162			**	35.0
cis-1,2-Dichloroethene	ND(30)	105	73.6-123	1000	µg/kg			65.6-137			**	25.8
cis-1,3-Dichloropropene	ND(30)	101	68.9-129	1000	µg/kg			47.9-135			**	29.9
m+p-Xylene	ND(50)	109	84.4-131	2000	µg/kg			65.8-141			**	25.5
n-Butylbenzene	ND(30)	110.	61.3-167	1000	µg/kg			31.2-173			**	42.7
n-Propylbenzene	ND(30)	124	65.5-155	1000	µg/kg			82.4-150			**	29.4
o-Xylene	ND(30)	112	83.6-127	1000	µg/kg			68.7-138			**	22.8
sec-butylbenzene	ND(30)	119	55.6-171	1000	µg/kg			50.0-169			**	40.6
tert-Butylbenzene	ND(30)	119	65.6-151	1000	µg/kg			67.7-169			**	30.9
trans-1,2-Dichloroethene	ND(30)	104	75.1-122	1000	µg/kg			59.4-141			**	27.6
trans-1,3-dichloropropene	ND(30)	92.6	78.1-118	1000	µg/kg			68.8-128			**	26.9
trans-1,4-Dichloro-2-butene	ND(250)	90.1	51.7-134	2000	µg/kg			#			**	#
Freon TF	ND(30)	98.6	77.7-128	1000	µg/kg			53.5-146			**	27.1
Surrogates:												
1,2-DICHLOROETHANE-d4	102	113	61.1-143	1000	µg/kg	MN	MN	61.1-143			**	
TOLUENE-d8	102	105	81.4-132	1000	µg/kg	MN	MN	81.4-132			**	
4-BFB(MS)	97.7	102	66.2-149	1000	µg/kg	MN	MN	66.2-149			**	
QC Batch: 131226-1	**For samples prepared on: 12/26/2013 0711**					**Spiked sample: 13121485**						
Lead, Total, ICP	ND(0.3)	92.8	80.0-120	25.0	mg/kg	MN	MN	75.0-125	25.0	mg/kg	**	20.0
QC Batch: 140102-1	**For samples prepared on: 01/02/2014 1500**					**Spiked sample: 13121774**						
Polynuclear Aromatics by HPLC												
Acenaphthene	ND(0.07)	90.5	76.6-101	0.33	mg/kg	74.7 ML	86.7	76.6-101	0.33	mg/kg	11.7	20.0
Acenaphthylene	ND(0.07)	89.2	72.1-97.4	0.67	mg/kg	75.5	88.9	72.1-97.0	0.67	mg/kg	15.3	20.0
Anthracene	ND(0.005)	86.6	49.4-117	0.033	mg/kg	OC	OC	49.4-117	0.033	mg/kg	**	20.0
Benzo(a)anthracene	ND(0.005)	89.2	70.4-106	0.033	mg/kg	OC	OC	70.4-106	0.033	mg/kg	**	20.0
Benzo(a)pyrene	ND(0.005)	95.1	54.2-112	0.033	mg/kg	OC	OC	54.2-112	0.033	mg/kg	**	20.0
Benzo(b)fluoranthene	ND(0.005)	97.0	73.4-106	0.067	mg/kg	75.6	89.2	73.4-106	0.067	mg/kg	6.90	20.0
Benzo(g,h,i)perylene	ND(0.005)	93.5	74.2-103	0.067	mg/kg	77.2	89.7	74.2-103	0.067	mg/kg	10.5	20.0
Benzo(k)fluoranthene	ND(0.005)	93.2	74.1-109	0.033	mg/kg	74.4	88.7	74.1-109	0.033	mg/kg	7.40	20.0
Chrysene	ND(0.005)	96.2	70.6-108	0.033	mg/kg	OC	OC	70.6-108	0.033	mg/kg	**	20.0
Dibenzo(a,h)anthracene	ND(0.005)	93.0	74.1-107	0.067	mg/kg	77.5	92.1	74.1-107	0.067	mg/kg	15.2	20.0
Fluoranthene	ND(0.01)	92.9	73.2-110	0.067	mg/kg	OC	OC	73.2-110	0.067	mg/kg	**	20.0
Fluorene	ND(0.01)	90.3	73.0-104	0.067	mg/kg	72.3 ML	74.8	73.0-104	0.067	mg/kg	1.00	20.0
Indeno(1,2,3-cd)pyrene	ND(0.005)	94.4	63.6-112	0.033	mg/kg	63.6	97.1	63.6-112	0.033	mg/kg	23.4	20.0
Naphthalene	ND(0.05)	87.7	74.1-97.5	0.33	mg/kg	74.1	83.5	74.1-98.0	0.33	mg/kg	9.50	20.0
Phenanthrene	ND(0.02)	93.3	71.2-104	0.033	mg/kg	OC	OC	71.2-104	0.033	mg/kg	**	20.0
Pyrene	ND(0.01)	89.9	70.7-105	0.033	mg/kg	OC	OC	70.7-105	0.033	mg/kg	**	20.0
Surrogates:												
NITROBENZENE(HPLC)	95.5	89.9	77.8-96.5	0.17	mg/kg	74.1 SL	92.2	77.8-96.5	0.17	mg/kg		
p-TERPHENYL-d14(HPLC)	98.4	95.9	56.1-134	0.066	mg/kg	143 SI	142 SI	56.1-134	0.066	mg/kg		

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 140102-1	**For sample analyzed on: 01/02/2014**					**Spiked sample: 13121774**						
Solids, Total	ND(0.1)	N/A			% by w	78.6 T	79.4 T	#		% by w	1.00	5.3
QC Batch: 140102-1	**For samples prepared on: 01/02/2014 1500**					**Spiked sample: 13121774R**						
Polynuclear Aromatics by HPLC	N/A	N/A										
Acenaphthene	ND(0.07)	90.5	76.6-101	0.33	mg/kg	C	C	76.6-101	0.33	mg/kg	**	20.0
Acenaphthylene	ND(0.07)	89.2	72.1-97.4	0.67	mg/kg	C	C	72.1-97.0	0.67	mg/kg	**	20.0
Anthracene	ND(0.005)	86.6	49.4-117	0.033	mg/kg	59.3	45.2 ML	49.4-117	0.033	mg/kg	4.80	20.0
Benzo(a)anthracene	ND(0.005)	89.2	70.4-106	0.033	mg/kg	44.3 ML	45.7 ML	70.4-106	0.033	mg/kg	0.20	20.0
Benzo(a)pyrene	ND(0.005)	95.1	54.2-112	0.033	mg/kg	67.3	66.0	54.2-112	0.033	mg/kg	0.80	20.0
Benzo(b)fluoranthene	ND(0.005)	97.0	73.4-106	0.067	mg/kg	70.8 ML	82.5	73.4-106	0.067	mg/kg	6.10	20.0
Benzo(g,h,i)perylene	ND(0.005)	93.5	74.2-103	0.067	mg/kg	102	112 MH	74.2-103	0.067	mg/kg	8.40	20.0
Benzo(k)fluoranthene	ND(0.005)	93.2	74.1-109	0.033	mg/kg	68.5 ML	79.3	74.1-109	0.033	mg/kg	5.60	20.0
Chrysene	ND(0.005)	96.2	70.6-108	0.033	mg/kg	57.3 ML	68.5 ML	70.6-108	0.033	mg/kg	3.90	20.0
Dibenzo(a,h)anthracene	ND(0.005)	93.0	74.1-107	0.067	mg/kg	80.1	94.5	74.1-107	0.067	mg/kg	15.5	20.0
Fluoranthene	ND(0.01)	92.9	73.2-110	0.067	mg/kg	I	I	73.2-110	0.067	mg/kg	**	20.0
Fluorene	ND(0.01)	90.3	73.0-104	0.067	mg/kg	68.1 ML	70.5 ML	73.0-104	0.067	mg/kg	1.00	20.0
Indeno(1,2,3-cd)pyrene	ND(0.005)	94.4	63.6-112	0.033	mg/kg	C	C	63.6-112	0.033	mg/kg	**	20.0
Naphthalene	ND(0.05)	87.7	74.1-97.5	0.33	mg/kg	C	C	74.1-98.0	0.33	mg/kg	**	20.0
Phenanthrene	ND(0.02)	93.3	71.2-104	0.033	mg/kg	I	I	71.2-104	0.033	mg/kg	**	20.0
Pyrene	ND(0.01)	89.9	70.7-105	0.033	mg/kg	I	I	70.7-105	0.033	mg/kg	**	20.0
Surrogates:												
NITROBENZENE(HPLC)	95.5	89.9	77.8-96.5	0.17	mg/kg	67.7 SL	83.6	77.8-96.5	0.17	mg/kg		
p-TERPHENYL-d14(HPLC)	98.4	95.9	56.1-134	0.066	mg/kg	156 SI	162 SI	56.1-134	0.066	mg/kg		
QC Batch: 1MS4364	**For sample analyzed on: 12/30/2013**					**Spiked sample: 13121868**						
Volatile Organics (73 Compds)						MN	MN					
1,1,1,2-Tetrachloroethane	ND(5.0)	94.4	72.5-129	25.0	µg/kg			66.0-163		µg/kg	**	21.2
1,1,1-Trichloroethane	ND(5.0)	97.1	72.1-127	25.0	µg/kg			61.2-141		µg/kg	**	26.9
1,1,2,2-Tetrachloroethane	ND(5.0)	130.	56.3-131	25.0	µg/kg			0.10-252		µg/kg	**	29.5
1,1,2-Trichloroethane	ND(5.0)	110.	70.4-124	25.0	µg/kg			25.0-182		µg/kg	**	33.3
1,1-Dichloroethane	ND(5.0)	114	73.0-127	25.0	µg/kg			62.7-146		µg/kg	**	28.1
1,1-Dichloroethene	ND(5.0)	111	74.1-133	25.0	µg/kg			57.1-149		µg/kg	**	25.7
1,1-Dichloropropene	ND(5.0)	128	80.9-129	25.0	µg/kg			75.5-127		µg/kg	**	13.7
1,2,3-Trichlorobenzene	ND(5.0)	104	72.5-129	25.0	µg/kg			15.0-128		µg/kg	**	47.3
1,2,3-Trichloropropane	ND(5.0)	119	55.4-139	25.0	µg/kg			0.10-295		µg/kg	**	26.2
1,2,4-Trichlorobenzene	ND(5.0)	106	72.9-134	25.0	µg/kg			14.7-138		µg/kg	**	31.0
1,2,4-Trimethylbenzene	ND(5.0)	115	77.0-138	25.0	µg/kg			70.9-154		µg/kg	**	16.8
1,2-Dibromo-3-chloropropane	ND(5.0)	123	47.8-138	25.0	µg/kg			13.5-218		µg/kg	**	48.0
1,2-Dibromoethane	ND(5.0)	98.7	71.7-123	25.0	µg/kg			54.5-162		µg/kg	**	21.9
1,2-Dichlorobenzene	ND(5.0)	103	85.6-118	25.0	µg/kg			76.8-131		µg/kg	**	24.6
1,2-Dichloroethane	ND(5.0)	127	69.0-129	25.0	µg/kg			56.8-146		µg/kg	**	27.7
1,2-Dichloropropane	ND(5.0)	123	73.1-124	25.0	µg/kg			66.0-138		µg/kg	**	27.7
1,3,5-Trimethylbenzene	ND(5.0)	112	74.0-141	25.0	µg/kg			77.0-150		µg/kg	**	20.7
1,3-Dichlorobenzene	ND(5.0)	102	87.9-121	25.0	µg/kg			85.5-125		µg/kg	**	20.8
1,3-Dichloropropane	ND(5.0)	112	72.5-126	25.0	µg/kg			48.4-185		µg/kg	**	23.3
1,4-Dichlorobenzene	ND(5.0)	102	91.0-114	25.0	µg/kg			80.8-127		µg/kg	**	20.8
2,2-Dichloropropane	ND(5.0)	113	77.3-131	25.0	µg/kg			66.4-150		µg/kg	**	21.5
2-Butanone	ND(25)	121	41.7-158	100	µg/kg			19.3-177		µg/kg	**	33.8
2-Chloroethylvinylether	ND(5.0) EV	116 EV	0.10-297	50.0	µg/kg			0.10-343		µg/kg	**	32.1
2-Chlorotoluene	ND(5.0)	116	76.8-135	25.0	µg/kg			82.7-153		µg/kg	**	13.1
2-Hexanone	ND(25)	110.	51.7-144	100	µg/kg			40.1-152		µg/kg	**	48.4
4-Chlorotoluene	ND(5.0)	118	76.1-138	25.0	µg/kg			93.6-135		µg/kg	**	14.4

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 1MS4364	**For sample analyzed on: 12/30/2013**					**Spiked sample: 13121868**						
4-Isopropyltoluene	ND(5.0)	113	56.9-165	25.0	µg/kg			45.3-166		µg/kg	**	32.9
4-Methyl-2-Pentanone	ND(25)	124	55.8-139	100	µg/kg			44.4-148		µg/kg	**	33.8
Acetone	ND(25)	118	45.0-159	100	µg/kg			7.80-200		µg/kg	**	45.7
Acrolein	ND(25) EV	68.9 EV	5.90-176	100	µg/kg			0.10-119		µg/kg	**	89.1
Acrylonitrile	ND(25)	114	59.4-139	100	µg/kg			5.40-170		µg/kg	**	40.5
Benzene	ND(5.0)	116	78.9-123	25.0	µg/kg			68.3-136		µg/kg	**	20.3
Bromobenzene	ND(5.0)	104	79.5-119	25.0	µg/kg			67.8-168		µg/kg	**	19.1
Bromochloromethane	ND(5.0)	92.2	75.7-121	25.0	µg/kg			66.8-136		µg/kg	**	25.8
Bromodichloromethane	ND(5.0)	127	71.1-128	25.0	µg/kg			56.5-138		µg/kg	**	31.4
Bromoform	ND(5.0)	86.2	64.7-123	25.0	µg/kg			52.1-136		µg/kg	**	31.0
Bromomethane	ND(5.0)	121	63.9-125	25.0	µg/kg			43.6-151		µg/kg	**	34.0
Carbon disulfide	ND(5.0)	110.	69.6-133	50.0	µg/kg			56.9-145		µg/kg	**	22.3
Carbon tetrachloride	ND(5.0)	102	67.0-134	25.0	µg/kg			58.9-137		µg/kg	**	30.5
Chlorobenzene	ND(5.0)	98.4	85.3-122	25.0	µg/kg			76.4-130		µg/kg	**	22.2
Chloroethane	ND(5.0)	120.	66.3-131	25.0	µg/kg			48.9-156		µg/kg	**	31.5
Chloroform	ND(5.0)	112	73.5-122	25.0	µg/kg			65.7-138		µg/kg	**	24.3
Chloromethane	ND(5.0)	144 LH	60.9-132	25.0	µg/kg			35.0-168		µg/kg	**	38.0
Dibromochloromethane	ND(5.0)	95.7	70.0-125	25.0	µg/kg			62.1-140		µg/kg	**	25.3
Dibromomethane	ND(5.0)	104	73.4-128	25.0	µg/kg			70.5-142		µg/kg	**	22.5
Dichlorodifluoromethane	ND(5.0)	128	51.6-151	25.0	µg/kg			35.4-171		µg/kg	**	33.9
Ethylbenzene	ND(5.0)	104	83.1-129	25.0	µg/kg			64.8-143		µg/kg	**	25.0
Hexachlorobutadiene	ND(5.0)	107	39.2-196	25.0	µg/kg			0.10-213		µg/kg	**	38.3
Hexane	ND(5.0)	138	72.8-138	50.0	µg/kg			15.2-154		µg/kg	**	19.3
Isopropylbenzene	ND(5.0)	97.7	72.8-149	25.0	µg/kg			52.1-149		µg/kg	**	20.6
MTBE	ND(5.0)	107	66.1-131	25.0	µg/kg			57.4-147		µg/kg	**	22.3
Methyl iodide	ND(5.0)	81.9	75.5-123	50.0	µg/kg			#		µg/kg	**	#
Methylene chloride	ND(5.0)	107	67.9-129	25.0	µg/kg			52.2-148		µg/kg	**	30.2
Naphthalene	ND(5.0)	107	68.6-121	25.0	µg/kg			21.7-148		µg/kg	**	50.2
Styrene	ND(5.0)	96.2	82.5-125	25.0	µg/kg			65.8-127		µg/kg	**	24.6
Tetrachloroethene	ND(5.0)	87.9	75.0-137	25.0	µg/kg			52.1-163		µg/kg	**	28.2
Toluene	ND(5.0)	104	81.2-122	25.0	µg/kg			70.6-143		µg/kg	**	19.4
Trichloroethene	ND(5.0)	113	81.5-123	25.0	µg/kg			62.0-149		µg/kg	**	26.8
Trichlorofluoromethane	ND(5.0)	105	79.4-127	25.0	µg/kg			50.7-157		µg/kg	**	26.6
Vinyl acetate	ND(50) EV	117 EV	56.9-141	50.0	µg/kg			0.10-170		µg/kg	**	38.4
Vinyl chloride	ND(5.0)	132	59.2-136	25.0	µg/kg			41.2-162		µg/kg	**	35.0
cis-1,2-Dichloroethene	ND(5.0)	107	73.6-123	25.0	µg/kg			65.6-137		µg/kg	**	25.8
cis-1,3-Dichloropropene	ND(5.0)	127	68.9-129	25.0	µg/kg			47.9-135		µg/kg	**	29.9
m+p-Xylene	ND(10)	100	84.4-131	50.0	µg/kg			65.8-141		µg/kg	**	25.5
n-Butylbenzene	ND(5.0)	117	61.3-167	25.0	µg/kg			31.2-173		µg/kg	**	42.7
n-Propylbenzene	ND(5.0)	118	65.5-155	25.0	µg/kg			82.4-150		µg/kg	**	29.4
o-Xylene	ND(5.0)	101	83.6-127	25.0	µg/kg			68.7-138		µg/kg	**	22.8
sec-butylbenzene	ND(5.0)	116	55.6-171	25.0	µg/kg			50.0-169		µg/kg	**	40.6
tert-Butylbenzene	ND(5.0)	112	65.6-151	25.0	µg/kg			67.7-169		µg/kg	**	30.9
trans-1,2-Dichloroethene	ND(5.0)	107	75.1-122	25.0	µg/kg			59.4-141		µg/kg	**	27.6
trans-1,3-dichloropropene	ND(5.0)	103	78.1-118	25.0	µg/kg			68.8-128		µg/kg	**	26.9
trans-1,4-Dichloro-2-butene	ND(5.0)	114	51.7-134	50.0	µg/kg			#		µg/kg	**	#
Freon TF	ND(5.0)	105	77.7-128	25.0	µg/kg			53.5-146		µg/kg	**	27.1
Surrogates:												
1,2-DICHLOROETHANE-d4	122 CH	122 CH	61.1-143	25.0	µg/kg	MN	MN	61.1-143	21.1	µg/kg	**	
TOLUENE-d8	99.7	94.2	81.4-132	25.0	µg/kg	MN	MN	81.4-132	21.1	µg/kg	**	
4-BFB(MS)	104	108	66.2-149	25.0	µg/kg	MN	MN	66.2-149	21.1	µg/kg	**	

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 1MS8360	**For sample analyzed on: 12/26/2013**					**Spiked sample:**						
Volatile Organics (73 Compds)						MN	MN					
1,1,1,2-Tetrachloroethane	ND(0.5)	103	83.4-123	10.0	µg/L			83.2-120			**	10.8
1,1,1-Trichloroethane	ND(0.5)	102	81.5-118	10.0	µg/L			78.1-121			**	10.7
1,1,2,2-Tetrachloroethane	ND(0.5)	99.6	74.0-118	10.0	µg/L			72.9-118			**	11.2
1,1,2-Trichloroethane	ND(0.5)	95.2	84.0-114	10.0	µg/L			84.3-115			**	10.9
1,1-Dichloroethane	ND(0.5)	99.2	76.9-118	10.0	µg/L			73.7-124			**	9.3
1,1-Dichloroethene	ND(0.5)	103	76.3-121	10.0	µg/L			74.9-123			**	11.2
1,1-Dichloropropene	ND(0.5)	99.2	79.4-116	10.0	µg/L			75.4-116			**	11.0
1,2,3-Trichlorobenzene	ND(0.5)	89.9	59.7-120	10.0	µg/L			50.5-130			**	21.3
1,2,3-Trichloropropane	ND(1.0)	100.	74.3-118	10.0	µg/L			73.2-119			**	16.2
1,2,4-Trichlorobenzene	ND(0.5)	90.6	59.9-123	10.0	µg/L			57.8-123			**	18.6
1,2,4-Trimethylbenzene	ND(0.5)	102	86.5-122	10.0	µg/L			73.5-131			**	9.6
1,2-Dibromo-3-chloropropane	ND(10)	101	57.5-123	10.0	µg/L			57.8-111			**	18.7
1,2-Dibromoethane	ND(0.5)	94.4	83.6-113	10.0	µg/L			78.7-120			**	11.0
1,2-Dichlorobenzene	ND(0.5)	96.9	87.6-112	10.0	µg/L			85.6-112			**	8.8
1,2-Dichloroethane	ND(0.5)	99.6	69.8-120	10.0	µg/L			68.0-125			**	10.8
1,2-Dichloropropane	ND(0.5)	98.0	78.6-113	10.0	µg/L			76.4-118			**	9.6
1,3,5-Trimethylbenzene	ND(0.5)	103	86.8-122	10.0	µg/L			76.6-130			**	9.9
1,3-Dichlorobenzene	ND(0.5)	99.0	87.2-114	10.0	µg/L			84.6-113			**	8.2
1,3-Dichloropropane	ND(0.5)	96.5	85.9-112	10.0	µg/L			82.2-114			**	11.4
1,4-Dichlorobenzene	ND(0.5)	97.9	86.6-111	10.0	µg/L			84.0-111			**	8.0
2,2-Dichloropropane	ND(0.5)	102	80.2-128	10.0	µg/L			62.4-119			**	10.1
2-Butanone	ND(10)	107	48.7-144	40.0	µg/L			48.7-152			**	13.0
2-Chloroethylvinylether	ND(5.0) EV	93.6 EV	40.4-136	20.0	µg/L			#			**	#
2-Chlorotoluene	ND(0.5)	101	83.6-118	10.0	µg/L			77.6-120			**	10.2
2-Hexanone	ND(5)	101	46.9-138	40.0	µg/L			34.4-139			**	15.4
4-Chlorotoluene	ND(0.5)	104	84.5-119	10.0	µg/L			77.8-122			**	9.5
4-Isopropyltoluene	ND(0.5)	103	86.9-123	10.0	µg/L			80.8-121			**	10.5
4-Methyl-2-Pentanone	ND(5)	101	55.5-128	40.0	µg/L			51.5-132			**	10.7
Acetone	ND(10)	112	38.6-161	40.0	µg/L			38.4-146			**	22.3
Acrolein	ND(25) EV	76.4 EV	0.10-210	40.0	µg/L			0.10-214			**	39.9
Acrylonitrile	ND(10)	103	60.8-132	40.0	µg/L			65.1-143			**	13.6
Benzene	ND(0.5)	99.7	82.7-115	10.0	µg/L			80.1-119			**	6.8
Bromobenzene	ND(0.5)	100	85.0-115	10.0	µg/L			80.2-118			**	9.3
Bromochloromethane	ND(1.0)	95.4	79.1-112	10.0	µg/L			76.1-118			**	12.9
Bromodichloromethane	ND(0.5)	102	75.6-120	10.0	µg/L			73.0-120			**	10.7
Bromoform	ND(0.5)	112	68.3-135	10.0	µg/L			58.0-132			**	14.7
Bromomethane	ND(1.0)	96.7	69.6-121	10.0	µg/L			63.9-125			**	15.7
Carbon disulfide	ND(1.0)	99.7	73.8-128	20.0	µg/L			53.1-141			**	10.6
Carbon tetrachloride	ND(0.5)	110.	80.9-128	10.0	µg/L			72.6-132			**	10.6
Chlorobenzene	ND(0.5)	96.7	85.1-119	10.0	µg/L			84.6-119			**	7.4
Chloroethane	ND(0.5)	97.5	75.3-123	10.0	µg/L			74.0-127			**	13.7
Chloroform	ND(0.5)	99.1	76.9-118	10.0	µg/L			73.8-122			**	8.7
Chloromethane	ND(0.5)	104	70.6-125	10.0	µg/L			62.8-132			**	13.5
Dibromochloromethane	ND(0.5)	113	82.2-122	10.0	µg/L			75.9-121			**	11.3
Dibromomethane	ND(1.0)	97.1	71.9-120	10.0	µg/L			68.5-127			**	15.0
Dichlorodifluoromethane	ND(0.5)	122	59.5-140	10.0	µg/L			58.5-140			**	13.0
Ethylbenzene	ND(0.5)	100	90.5-117	10.0	µg/L			88.6-116			**	8.1
Hexachlorobutadiene	ND(0.5)	88.3	64.2-129	10.0	µg/L			57.8-125			**	23.6
Hexane	ND(1.0)	103	72.0-130	20.0	µg/L			67.6-120			**	11.3
Isopropylbenzene	ND(0.5)	98.0	86.4-123	10.0	µg/L			84.1-121			**	10.5
MTBE	ND(0.5)	93.1	63.3-118	10.0	µg/L			62.8-123			**	11.1

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit
QC Batch: 1MS8360	**For sample analyzed on: 12/26/2013**					**Spiked sample:**						
Methyl iodide	ND(1.0)	95.3	77.7-116	20.0	µg/L			74.3-119			**	19.6
Methylene chloride	ND(0.5)	96.1	76.1-114	10.0	µg/L			74.3-118			**	10.5
Naphthalene	ND(0.5)	88.9	54.7-119	10.0	µg/L			44.4-130			**	21.0
Styrene	ND(0.5)	94.7	88.6-119	10.0	µg/L			76.1-125			**	9.9
Tetrachloroethene	ND(0.5)	97.7	84.5-126	10.0	µg/L			81.2-125			**	10.1
Toluene	ND(0.5)	99.2	88.0-119	10.0	µg/L			85.8-119			**	7.6
Trichloroethene	ND(0.5)	97.6	82.0-113	10.0	µg/L			79.3-117			**	8.7
Trichlorofluoromethane	ND(0.5)	104	77.4-124	10.0	µg/L			72.9-126			**	11.5
Vinyl acetate	ND(5) EV	97.9 EV	55.2-122	20.0	µg/L			0.10-135			**	13.4
Vinyl chloride	ND(0.5)	103	72.1-130	10.0	µg/L			66.9-134			**	14.4
cis-1,2-Dichloroethene	ND(0.5)	94.7	83.1-112	10.0	µg/L			79.1-117			**	8.5
cis-1,3-Dichloropropene	ND(0.5)	97.4	77.7-115	10.0	µg/L			67.7-113			**	10.2
m+p-Xylene	ND(1.0)	99.7	91.5-117	20.0	µg/L			87.6-117			**	8.3
n-Butylbenzene	ND(0.5)	102	83.6-126	10.0	µg/L			77.3-121			**	11.6
n-Propylbenzene	ND(0.5)	104	86.1-124	10.0	µg/L			77.1-128			**	9.3
o-Xylene	ND(0.5)	96.7	85.5-119	10.0	µg/L			84.0-118			**	9.4
sec-butylbenzene	ND(0.5)	99.5	86.1-122	10.0	µg/L			80.6-121			**	10.1
tert-Butylbenzene	ND(0.5)	97.5	82.0-125	10.0	µg/L			76.5-126			**	9.3
trans-1,2-Dichloroethene	ND(0.5)	98.8	81.9-115	10.0	µg/L			80.0-120			**	9.2
trans-1,3-dichloropropene	ND(0.5)	96.3	79.6-116	10.0	µg/L			69.4-114			**	10.9
trans-1,4-Dichloro-2-butene	ND(5.0)	103	40.4-142	20.0	µg/L			52.3-112			**	14.2
Freon TF	ND(0.5)	97.8	78.3-125	10.0	µg/L			81.2-131			**	9.2
Surrogates:												
1,2-DICHLOROETHANE-d4	101	103	73.2-126	10.0	µg/L	MN	MN	73.2-126			**	
TOLUENE-d8	99.5	103	88.6-116	10.0	µg/L	MN	MN	88.6-116			**	
4-BFB(MS)	96.5	95.8	78.0-115	10.0	µg/L	MN	MN	78.0-115			**	

Data Qualifiers:

MN - The MS/MSD sample analyses were not performed on a sample from this Continental order number.

LL - The Laboratory Control Sample (LCS) recovery for this analyte was below the method or laboratory quality control limit. The reported sample concentration may be biased low.

EV - Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.

ML - The matrix spike and/or matrix spike duplicate recovery for this analyte was below the method or laboratory control limit. See LCS data for the basis for acceptance of this sample. The reported sample concentration is estimated.

OC - The response for this analyte exceeded the calibration range of the instrument. Sample dilution and reanalysis is necessary to obtain an accurate result. The reported result, if provided, is estimated.

SL - The surrogate recovery for this analysis was below the method or laboratory control limits. The reported sample concentration may be biased low.

SI - One or more surrogate recoveries for this analysis were not within the method or laboratory control limits. The sample result(s) or reporting limit(s) for this analysis are estimated due to sample heterogeneity and/or sample matrix interferences.

T - A MS/MSD cannot be performed for this analysis and a duplicate analysis is performed.. The MS and MSD results are from two separate analyses.

C - Due to matrix interference(s) and/or high concentration(s) of analyte(s) present in the sample, dilution was required causing the spike level for this analyte to be below the reporting limit and/or below the lowest point of the calibration curve.

Quality Control Report
Method Blank, LCS, MS/MSD Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Blank Data	% Rec LCS	Limits	Spike Level	Units	Spiked Sample (% Recovery) MS	MSD	Limits	Spike Level	Units	Spiked Sample Precision Data RPD	Limit

MH - The matrix spike and/or matrix spike duplicate recovery for this analyte was above the method or laboratory control limit. See LCS data for the basis for acceptance of this sample. The reported sample concentration is estimated.

I - Due to the concentration of analyte in the sample, the spike level is too low to allow accurate quantification of the spike recovery.

LH - The Laboratory Control Sample (LCS) recovery for this analyte was above the method or laboratory quality control limit. The reported sample concentration may be biased high.

CH - The continuing calibration verification (CCV) standard recovery for this analyte was above the method or SOP limit. The reported concentration for this analyte may be biased high.

- Limits not available.

** - RPD cannot be calculated.

Quality Control Report
Sample Surrogate Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Surrogate	Date Prepared	Date Analyzed	Spike Level	Units	% Recovery	Acceptable % Limits
Lab Number: 13121774		**Sample Description: DSB-1/11-12**				
Polynuclear Aromatics by HPLC						
NITROBENZENE(HPLC)	01/02/2014	01/09/2014	0.17	mg/kg	89.6	77.8-96.5
p-TERPHENYL-d14(HPLC)	01/02/2014	01/09/2014	0.070	mg/kg	160. SI	56.1-134
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	710	µg/kg	132	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	710	µg/kg	134 SI	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	710	µg/kg	124	66.2-149
Lab Number: 13121774R		**Sample Description: DSB-1/11-12**				
Polynuclear Aromatics by HPLC						
NITROBENZENE(HPLC)	01/02/2014	01/13/2014	0.17	mg/kg	80.0	77.8-96.5
p-TERPHENYL-d14(HPLC)	01/02/2014	01/13/2014	0.070	mg/kg	180. SI	56.1-134
Lab Number: 13121775		**Sample Description: DSB-1/22-24**				
Polynuclear Aromatics by HPLC						
NITROBENZENE(HPLC)	01/02/2014	01/09/2014	0.17	mg/kg	85.9	77.8-96.5
p-TERPHENYL-d14(HPLC)	01/02/2014	01/09/2014	0.070	mg/kg	96.0	56.1-134
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	1000	µg/kg	123	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	1000	µg/kg	119	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	1000	µg/kg	116	66.2-149
Lab Number: 13121775R		**Sample Description: DSB-1/22-24**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4		12/30/2013	21	µg/kg	110. CH	61.1-143
TOLUENE-d8		12/30/2013	21	µg/kg	97.1	81.4-132
4-BFB(MS)		12/30/2013	21	µg/kg	101	66.2-149
Lab Number: 13121776		**Sample Description: DSB-2/9-10**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	780	µg/kg	131	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	780	µg/kg	132	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	780	µg/kg	125	66.2-149
Lab Number: 13121777		**Sample Description: DSB-2/25-27**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	830	µg/kg	115	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	830	µg/kg	112	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	830	µg/kg	117	66.2-149
Lab Number: 13121777R		**Sample Description: DSB-2/25-27**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4		12/30/2013	21	µg/kg	126 CH	61.1-143
TOLUENE-d8		12/30/2013	21	µg/kg	97.9	81.4-132
4-BFB(MS)		12/30/2013	21	µg/kg	107	66.2-149
Lab Number: 13121778		**Sample Description: DSB-3/10-13**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	710	µg/kg	126	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	710	µg/kg	126	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	710	µg/kg	122	66.2-149
Lab Number: 13121779		**Sample Description: DSB-3/22.5-25**				

Quality Control Report
Sample Surrogate Data

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Surrogate	Date Prepared	Date Analyzed	Spike Level	Units	% Recovery	Acceptable % Limits
Lab Number: 13121779		**Sample Description: DSB-3/22.5-25**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	840	µg/kg	117	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	840	µg/kg	113	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	840	µg/kg	115	66.2-149
Lab Number: 13121779R		**Sample Description: DSB-3/22.5-25**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4		12/30/2013	22	µg/kg	122 CH	61.1-143
TOLUENE-d8		12/30/2013	22	µg/kg	94.2	81.4-132
4-BFB(MS)		12/30/2013	22	µg/kg	105	66.2-149
Lab Number: 13121780		**Sample Description: DSB-4/10-12**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	750	µg/kg	128	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	750	µg/kg	127	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	750	µg/kg	117	66.2-149
Lab Number: 13121781		**Sample Description: DSB-4/25-27**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4	12/23/2013	12/27/2013	800	µg/kg	115	61.1-143
TOLUENE-d8	12/23/2013	12/27/2013	800	µg/kg	112	81.4-132
4-BFB(MS)	12/23/2013	12/27/2013	800	µg/kg	117	66.2-149
Lab Number: 13121781R		**Sample Description: DSB-4/25-27**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4		12/30/2013	20	µg/kg	117 CH	61.1-143
TOLUENE-d8		12/30/2013	20	µg/kg	98.6	81.4-132
4-BFB(MS)		12/30/2013	20	µg/kg	105	66.2-149
Lab Number: 13121782		**Sample Description: Trip Blank**				
Volatile Organics (73 Compds)						
1,2-DICHLOROETHANE-d4		12/26/2013	10	µg/L	102	73.2-126
TOLUENE-d8		12/26/2013	10	µg/L	102	88.6-116
4-BFB(MS)		12/26/2013	10	µg/L	100.	78.0-115

Data Qualifiers:
SI - One or more surrogate recoveries for this analysis were not within the method or laboratory control limits. The sample result(s) or reporting limit(s) for this analysis are estimated due to sample heterogeneity and/or sample matrix interferences.

CH - The continuing calibration verification (CCV) standard recovery for this analyte was above the method or SOP limit. The reported concentration for this analyte may be biased high.

Quality Control Report
Continuing Calibration Summary

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date of Analysis	Instrument Batch ID	Amount in Standard	Amount Detected	Units	Percent Recovery
Polynuclear Aromatics by HPLC	01/09/2014	2LC3009	CCV recovery acceptable for this Instrument Batch.			
Polynuclear Aromatics by HPLC	01/09/2014	3LC3009	CCV recovery acceptable for this Instrument Batch.			
Polynuclear Aromatics by HPLC	01/13/2014	1LC3013	CCV recovery acceptable for this Instrument Batch.			
Polynuclear Aromatics by HPLC	01/13/2014	2LC3013	CCV recovery acceptable for this Instrument Batch.			
Lead, Total, ICP	01/01/2014	16IP4365	CCV recovery acceptable for this Instrument Batch.			
Lead, Total, ICP	01/01/2014	17IP4365	CCV recovery acceptable for this Instrument Batch.			
Lead, Total, ICP	01/01/2014	18IP4365	CCV recovery acceptable for this Instrument Batch.			
Lead, Total, ICP	01/06/2014	2IP4006	CCV recovery acceptable for this Instrument Batch.			
Lead, Total, ICP	01/06/2014	3IP4006	CCV recovery acceptable for this Instrument Batch.			
Volatile Organics (73 Compds)	12/30/2013		CCV recovery acceptable except as qualified below.			
1,1,2,2-Tetrachloroethane	12/30/2013	1MS4364	25.0	32.5	µg/kg	130 CH
1,1-Dichloropropene	12/30/2013	1MS4364	25.0	32.0	µg/kg	128 CH
1,2-Dibromo-3-chloropropane	12/30/2013	1MS4364	25.0	30.8	µg/kg	123 CH
1,2-Dichloroethane	12/30/2013	1MS4364	25.0	31.8	µg/kg	127 CH
1,2-Dichloropropane	12/30/2013	1MS4364	25.0	30.8	µg/kg	123 CH
2-Butanone	12/30/2013	1MS4364	100	121	µg/kg	121 CH
2-Chloroethylvinylether	12/30/2013	1MS4364	50.0	58.0	µg/kg	116 EV
4-Methyl-2-Pentanone	12/30/2013	1MS4364	100	124	µg/kg	124 CH
Acrolein	12/30/2013	1MS4364	100	68.9	µg/kg	68.9 EV
Bromodichloromethane	12/30/2013	1MS4364	25.0	31.8	µg/kg	127 CH
Bromomethane	12/30/2013	1MS4364	25.0	30.3	µg/kg	121 CH
Chloromethane	12/30/2013	1MS4364	25.0	36.0	µg/kg	144 CH
Dichlorodifluoromethane	12/30/2013	1MS4364	25.0	32.0	µg/kg	128 CH
Hexane	12/30/2013	1MS4364	50.0	69.0	µg/kg	138 CH
Vinyl acetate	12/30/2013	1MS4364	50.0	58.5	µg/kg	117 EV
Vinyl chloride	12/30/2013	1MS4364	25.0	33.0	µg/kg	132 CH
cis-1,3-Dichloropropene	12/30/2013	1MS4364	25.0	31.8	µg/kg	127 CH
1,2-DICHLOROETHANE-d4	12/30/2013	1MS4364	25.0	30.5	µg/kg	122 CH

Samples associated with this Continuing Calibration Verification:

Laboratory Number	Instrument Batch	Sample Description
13121775R	1MS4364	DSB-1/22-24
13121777R	1MS4364	DSB-2/25-27
13121779R	1MS4364	DSB-3/22.5-25
13121781R	1MS4364	DSB-4/25-27

Analysis	Date of Analysis	Instrument Batch ID	Amount in Standard	Amount Detected	Units	Percent Recovery
Volatile Organics (73 Compds)	12/26/2013		CCV recovery acceptable except as qualified below.			
2-Chloroethylvinylether	12/26/2013	1MS8360	20.0	18.7	µg/L	93.6 EV
Acrolein	12/26/2013	1MS8360	40.0	30.6	µg/L	76.4 EV
Dichlorodifluoromethane	12/26/2013	1MS8360	10.0	12.2	µg/L	122 CH
Vinyl acetate	12/26/2013	1MS8360	20.0	19.6	µg/L	97.9 EV

Samples associated with this Continuing Calibration Verification:

Laboratory Number	Instrument Batch	Sample Description
13121782	1MS8360	Trip Blank

Quality Control Report
Continuing Calibration Summary

Client: Dragun Corporation
Attn: Mark Resch
30445 Northwestern Highway
Suite 260
Farmington Hills, MI 48334

Date Reported: 01/15/2014
Date Received: 12/20/2013
Continental File No: 8576
Continental Order No: 115867

Analysis	Date of Analysis	Instrument Batch ID	Amount in Standard	Amount Detected	Units	Percent Recovery
Volatile Organics (73 Compds)	12/27/2013		CCV recovery acceptable except as qualified below.			
2-Chloroethylvinylether	12/27/2013	1MS8361	20.0	16.5	µg/L	82.6 EV
Acrolein	12/27/2013	1MS8361	40.0	28.8	µg/L	72.0 EV
Naphthalene	12/27/2013	1MS8361	10.0	7.67	µg/L	76.7 CL
Vinyl acetate	12/27/2013	1MS8361	20.0	17.9	µg/L	89.5 EV

Samples associated with this Continuing Calibration Verification:

Laboratory Number	Instrument Batch	Sample Description
13121774	1MS8361	DSB-1/11-12
13121775	1MS8361	DSB-1/22-24
13121776	1MS8361	DSB-2/9-10
13121777	1MS8361	DSB-2/25-27
13121778	1MS8361	DSB-3/10-13
13121779	1MS8361	DSB-3/22.5-25
13121780	1MS8361	DSB-4/10-12
13121781	1MS8361	DSB-4/25-27

Data Qualifiers:
CH - The continuing calibration verification (CCV) standard recovery for this analyte was above the method or SOP limit. The reported concentration for this analyte may be biased high.

EV - Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.

CL - The continuing calibration verification (CCV) standard recovery for this analyte was below the method or SOP limit. The reported concentration for this analyte may be biased low.

- Laboratory Report Conclusion -

Continental
Analytical Services, Inc.

525 N. 8th, Salina, KS 67401
(785) 827-1273 or (800) 535-3076
Fax (785) 823-7830
www.cas-lab.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Continenetal Order No.: [Lab to enter Order No.] 115867

Client/Reporting Information	Client Invoice Information
Company Name: Dragun Corporation	Company Name: SAME
Address: 30445 Northwestern Hwy., Ste 260	Address:
City: Farmington Hills State: MI Zip: 48334	City: State: Zip:
Contact: MARK RESCH	Contact:
E-mail: mresch@dragun.com	E-mail:
Phone: 248-932-6228 Fax: 2489326618	Phone: Fax:
File No. / Project No.: 30425-02 Project Name: Bldg 305	Purchase Order:
Sampled by (Print): MARK RESCH Sampled by (Signature):	

Sample Identification (30 characters or less - to appear on lab report)	Matrix (1)	Program (2)	DATE Sampled	TIME Sampled	G - Grab or C - Composite	Total No. of Containers	No. of Preserved Containers: HCl	NaOH	HNO_3	H_2SO_4	Not Preserved	Other :	VOCs	PNAs	Total PB							Comments
DSB-1/11-12	S	D	12-19-13	0955	G	4	3						X	X	X							
DSB-1/22-24	S	D		0957	G	4	3						X	X	X							
DSB-2/9-10	S	D		1116	G	4	3						X		X							
DSB-2/25-27	S	D		1125	G	4	3						X		X							
DSB-3/10-13	S	D		1518	G	4	3						X		X						(1)	Note impacts
DSB-3/22.5-25	S	D		1525	G	4	3						X		X							VOCs at all
DSB-4/10-12	S	D		1410	G	4	3						X		X							Soils
DSB-4/25-27	S	D		1420	G	4	3						X		X						(2)	Standard
TRIP BLANK	O	D		—	—	1	1						X									TAT
																					(3)	Meet Kansas Department of Environment RLs

1. **Matrix (sample type):** DW = Drinking Water GW = Ground Water WW = Waste Water S = Soil / Solid SL = Sludge OL = Oil / Organic Liquid W = Wipe A = Air O = Other
2. **Regulatory Program:** D = Drinking Water N = NPDES R = RCRA SL = 503 Sludge O = No program applies If Regulatory Program is "O" or blank, Continental will select the test method.
3. Results will be reported on a wet weight (as received) basis unless dry weight is requested or required (503 regulation, PCB in solid, High level soil VOCs, etc.). Dry weight reporting is subject to an additional charge.
4. **Turn around time (TAT):** **Standard TAT**: 15 working days **Rush TAT**: 5 working days **Emergency TAT**: 2 - 3 working days **Rush TAT and Emergency TAT are subject to an additional charge.**

Is dry weight required ? Write *Dry Wt.* in this column for applicable samples. See (3) below.

Is Rush or Emergency TAT required ? Write *Rush* or *Emerg* in this column for applicable samples. See (4) below.

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
[signature]	12-20-2013	0838			
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
RECEIVED AT LAB BY: [signature]	DATE: 12/20/13	TIME: 0838	SHIPPED VIA: / AIR BILL:	SEAL #: / SEAL DATE:	

Continental's standard *Terms and Conditions of Sale* will apply to all samples received unless a separate contractual agreement has been made. Please note the enclosed Continental *Sample Acceptance Policy*.

Continental Analytical Services, Inc.
Cooler/Sample Receipt Form (C/S RF)

CAS Order No.: 115867

Client Name: Dragun **CAS File No.:** 8576

Sample ID's in cooler: See CC

Cooler 1 **of** 1 **for this CAS Order No.**

Cooler Identification: CAS Cooler #: 3907 / Client's Cooler / Box / Letter / Hand-delivered
Other: _____

Date/Time Cooler Received: 12/20/13 08:38

Delivered By: UPS / FedX / AB Express / Field Svcs / Mail / Walk-In / Other: GJG

Custody Seal: Present: Intact / Broken Absent: X Seal No: _____

Seal Name: _____ Seal Date: _____

Seal matches Chain of Custody: Yes / No / N/A

Type of Packing Material: Blue Ice / Ice / Melted Ice / Bubble / Foam / Paper / Peanuts / Vermiculite / None / Other: _____

Cooler Temperature (°C): Original Reading (°C) 0.5 Corrected Reading (°C) 1.0

Temperature. By: Temperature Blank Surface Temperature

Thermo. ID No.: 585 Thermo. Correction Factor (°C): 0.5

☐ Evidence of Cooling and date received = date sampled

Sample Receipt Discrepancies: ☒ No ☐ Yes **(See below for discrepancies.)**

Note: If discrepancies are present, CAS will proceed with analyses until/unless directed otherwise by the client.

- ☐ Chain of Custody not present - information taken from:
  - Cover Letter ☐ Container ☐
  - PO ☐ CAS Proj. Mgr. ☐
- ☐ Container label absent
- ☐ Chain of Custody incomplete [see detail below]
- ☐ Chain of Custody missing date/time sampled (excl. TB or Dup.)
- ☐ Date or Time sampled obtained from container label
- ☐ Chain of Custody missing sampler's name
- ☐ Chain of Custody missing matrix (sample type)
- ☐ Missing relinquished information: signature date time
- ☐ Sample excluded from Chain of Custody
- ☐ Sample listed on Chain of Custody, not received
- ☐ Sample identification on container and Chain of Custody do not agree
- ☐ Air bubbles in Aqueous VOA vials larger than pea-size [approx. 6 mm]
- ☐ Cooler temperature exceeded 0.1 - 6.0 °C requirement [Do not mark if samples do not require cooling to 0.1 - 6.0 °C.]
- ☐ Broken or leaking containers (detail actions below)
- ☐ Sample container type or labeled chemical preservation inappropriate
- ☐ Other discrepancies: _____

Detail to discrepancies/comments:

Completed by: [signature] **Date Completed:** 12/20/13

Dragun Corporation
Environmental Advisors

30445 Northwestern Hwy., Suite 260, Farmington Hills, MI 48334 • Phone: 248.932.0228 • Fax: 248.932.0618

March 3, 2022

Mr. Timothy F. Rogers, Executive Director
Salina Airport Authority
3237 Arnold Avenue
Salina, KS 67401

SUBJECT: Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue
Salina, KS 67401
Project #31100-02

Dear Mr. Rogers:

Based on our discussions, the Salina Airport Authority (SAA) is planning for the removal of the underground storage tank (UST) systems and above grade infrastructure for Pump House 305. A new aboveground storage tank (AST) system is proposed for installation at the south-adjoining property.

Historical environmental subsurface investigations have been conducted at the Pump House 305 property in 1994 and 2013. Both of these investigations identified subsurface soil conditions indicative of chemical releases derived from the UST system operations. No groundwater samples were tested during these investigations. Dragun/GSI completed the following scope of work to investigate the Pump House 305 property and the location of the proposed AST system on January 26, 2022.

SCOPE OF WORK

Pump House 305 Property: One soil boring (Figure 1) was advanced to the east of the pump house and the waste petroleum UST, and a temporary groundwater monitoring well was installed. The soil boring (DSB-5) was advanced to a depth of 27 feet below ground level (fbgl) to the top of the bedrock subcrop. Two subsurface soil samples were collected from 4-6 fbgl and 12-14 fbgl for laboratory testing. A temporary groundwater monitoring well was installed to the depth of the boring at 27 fbgl, with a screen interval from 22-27 fbgl, and one groundwater sample was obtained for laboratory testing.

Proposed AST System Property: Four soil borings (Figure 1) were advanced at the south-adjoining property at the location of the proposed AST system. The four soil borings were advanced to a depth of 5 fbgl. One soil sample was obtained from each boring for laboratory analysis from a depth of 4-5 fbgl.

All soil borings were logged to document the subsurface conditions. A photoionization detector (PID) was used to evaluate the subsurface soil for the presence of volatile organic compounds (VOCs) related to historical petroleum use.

After sampling, the temporary groundwater monitoring well was removed, and the soil borings were filled to grade with soil cuttings and bentonite.

Summary of boring locations and depths

Boring ID	Total Depth (ft)	Soil Sample Intervals (fbgl)	
DSB-5	27	4-6	12-14
DSB-6	5	4-5	x
DSB-7	5	4-5	x
DSB-8	5	4-5	x
DSB-9	5	4-5	x

Boring ID	Total Depth (ft)	Groundwater Sample Interval (fbgl)
DSB-5	27	22-27

The soil and groundwater samples were analyzed for the following chemicals per the Kansas Department of Health and Environment (KDHE) guidance:

- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- 1,2-Dichloroethane (DCA)
- Methyl-tert-butyl-Ether (MTBE)
- Naphthalene
- Ethylene Dibromide (EDB)
- Total Petroleum Hydrocarbons (TPH) Low-Range Hydrocarbons (LRH), Mid-Range Hydrocarbons (MRH), and High-Range Hydrocarbons (HRH)
- Lead

The main observations from a review of the data are as follows:

<u>VOCs</u>: Three VOCs were detected in the soil samples from DBS-5. Two VOCs were detected in groundwater from DSB-5. None of the detected VOC concentrations exceeded the KDHE Tier 2 Risk-Based levels for a non-residential land use. The analytical results, in comparison to the KDHE criteria, are summarized on Tables 1 and 2. The laboratory analytical report is attached in Appendix A.

Total Petroleum Hydrocarbons: Low-Range Hydrocarbons (LRH) and Mid-Range Hydrocarbons (MRH) were detected in DSB-5 from 4-6 fbgl at 1,000,000 micrograms per kilogram (µg/kg) and 2,460,000 µg/kg, respectively. The MRH concentration in soil sample DSB-5 (12-14 fbgl) was 1,370,000 µg/kg. These concentrations exceed the KDHE Tier 2 criteria of 950,000 µg/kg for LRH and 350,000 µg/kg for MRH.

Lead: Lead was detected in all of the soil samples. None of the results exceeded the results KDHE Tier 2 Risk-Based levels for a non-residential land use. Lead was detected in the groundwater analysis in the DSB-5 temporary well at 836 micrograms per liter (µg/L), exceeding KDHE Tier 2 criteria of 15 µg/L.

In summary, DSB-5, located downgradient of the UST system, showed soil concentrations indicative of historical petroleum releases. Lead was also detected above KDHE Tier 2 criterion in groundwater at DSB-5. No data from the proposed AST location exceeded the KDHE Tier 2 criteria.

The data from this investigation indicate no issues with the soil quality that would impact construction of the proposed AST system at the proposed location.

If you have any questions or require any additional information, please contact me one of us at (248) 932-0228.

Sincerely,

DRAGUN CORPORATION

John Collins CHMM
Senior Geologist

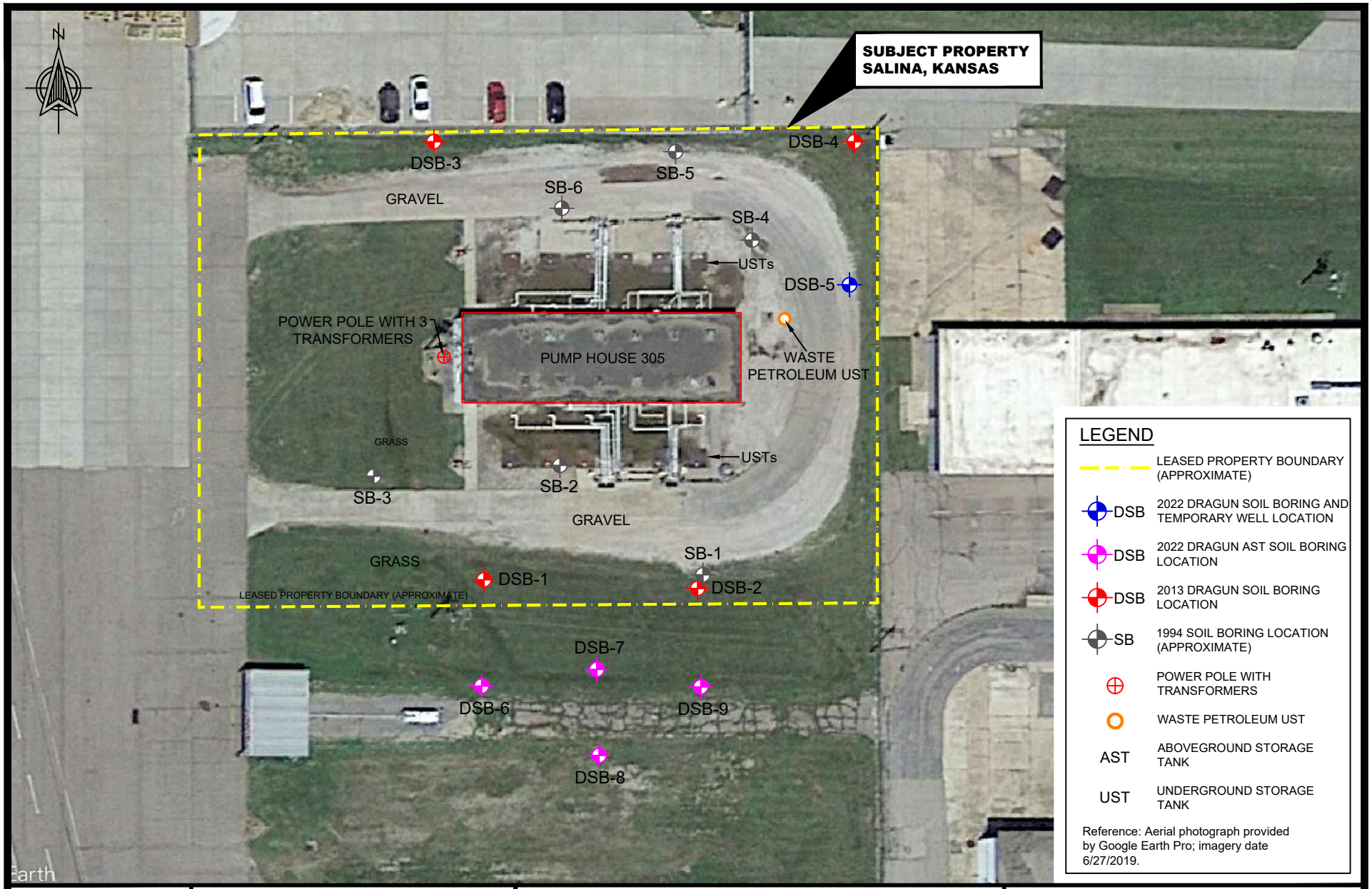
Matthew C. Schroeder, P.E.
Senior Environmental Engineer

JC/MCS/amr

Attachments

FIGURE

Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue
Salina, KS 67401
Project #31100-02



SCALE

0 FEET 50

Dragun Corporation
Environmental Advisors

File: K:\2020\31100-02 Salina Airport Authority\CAD\PH 305 Investigation 31100-02 PH Inv Figure 1 Date: 3/3/2022

Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue
Salina, KS 67401

FIGURE 1
SOIL BORING LOCATION MAP
JANUARY 2022

TABLES

Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue
Salina, KS 67401
Project #31100-02

Table 1: Laboratory Data Summary, Soil
Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue, Salina, Kansas
Project #31100-02

			Sample ID	DSB-5 (4-6)	DSB-5 (12-14)	DSB-6 (4-5)	DSB-7 (4-5)	DSB-8 (4-5)	DSB-9 (4-5)
			Date, Time	1/26/22, 10:30 AM	1/26/22, 10:45 AM	1/26/22, 11:45 AM	1/26/22, 12:20 PM	1/26/22, 12:45 PM	1/26/22, 12:00 PM
			Lab Sample ID	60391478001	60391478002	60391478003	60391478004	60391478005	60391478006
Analytical Parameters	**CAS Number**	**KDHE Non-Residential Soil Criteria (µg/kg)**	**Units**						
LRH (C5-C8)		950000	µg/kg	**1000000**	231000	U	U	U	U
MRH (C9-C18)		350000	µg/kg	**2460000**	**1370000**	U	U	U	U
HRH (C19-C35)		275000000	µg/kg	55100	U	18700	18500	17600	22100
1,2-Dibromoethane (EDB)	106-93-4	859	µg/kg	U	U	U	U	U	U
1,2-Dichloroethane	107-06-2	10900	µg/kg	U	U	U	U	U	U
Benzene	71-43-2	28200	µg/kg	787	364	U	U	U	U
Ethylbenzene	100-41-4	145000	µg/kg	1370	1960	U	U	U	U
Methyl-tert-butyl ether	1634-04-4	1050000	µg/kg	U	U	U	U	U	U
Naphthalene	91-20-3	64700	µg/kg	11500	5430	U	U	U	U
Toluene	108-88-3	29800000	µg/kg	U	U	U	U	U	U
Xylene (Total)	1330-20-7	1410000	µg/kg	313	250	U	U	U	U
Lead	7439-92-1	1000000	µg/kg	20900	19000	13100	17200	19900	20100

Notes:
Bold = exceeds KDHE criteria
U = non-detect
µg/kg = microgram per kilogram
LRH = Low Range Hydrocarbons
MRH = Mid Range Hydrocarbons
HRH = High Range Hydrocarbons

Table 2: Laboratory Data Summary, Groundwater
Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue, Salina, Kansas
Project #31100-02

			Sample ID	**DSB-5**
			Date, Time	1/26/22, 1:20 PM
			Lab Sample ID	60391478007
Analytical Parameters	**CAS Number**	**KDHE Non-Residential Groundwater Criteria (µg/L)**	**Units**	
LRH (C5-C8)		950	µg/L	890
MRH (C9-C18)		400	µg/L	89
HRH (C19-C35)		2500	µg/L	U
1,2-Dibromoethane (EDB)	106-93-4	0.05	µg/L	U
1,2-Dichloroethane	107-06-2	5	µg/L	U
Benzene	71-43-2	5	µg/L	1.3
Ethylbenzene	100-41-4	700	µg/L	1.1
Methyl-tert-butyl ether	1634-04-4	262	µg/L	U
Naphthalene	91-20-3	2.11	µg/L	U
Toluene	108-88-3	1000	µg/L	U
Xylene (Total)	1330-20-7	10000	µg/L	U
Lead	7439-92-1	15	µg/L	**836**

Notes:
Bold = exceeds KDHE criteria
U = non-detect
µg/L = microgram per liter
LRH = Low Range Hydrocarbons
MRH = Mid Range Hydrocarbons
HRH = High Range Hydrocarbons

APPENDIX A
Laboratory Analytical Report

Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue
Salina, KS 67401
Project #31100-02

Pace Analytical Services, LLC
528 N. 9th Street
Salina, KS 67401
(785)827-1273

February 10, 2022

Matt Schroeder
Dragun Corporation
30445 Northwestern Highway
Farmington, MI 48334

RE: Project: Schilling
Pace Project No.: 60391478

Dear Matt Schroeder:

Enclosed are the analytical results for sample(s) received by the laboratory on January 26, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Gregory J. Groene

Gregory Groene
gregory.groene@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: John Collins, Dragun Corporation

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Pace Analytical Services, LLC
528 N. 9th Street
Salina, KS 67401
(785)827-1273

CERTIFICATIONS

Project:	Schilling
Pace Project No.:	60391478

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 20-020-0
Arkansas Drinking Water
Illinois Certification #: 2000302021-3
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-19-12
Utah Certification #: KS000212019-9
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

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Pace Analytical Services, LLC
528 N. 9th Street
Salina, KS 67401
(785)827-1273

SAMPLE SUMMARY

Project: Schilling
Pace Project No.: 60391478

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60391478001	**DSB-5 (4-6)**	Solid	01/26/22 10:30	01/26/22 13:45
60391478002	**DSB-5 (12-14)**	Solid	01/26/22 10:45	01/26/22 13:45
60391478003	**DSB-6 (4-5)**	Solid	01/26/22 11:45	01/26/22 13:45
60391478004	**DSB-7 (4-5)**	Solid	01/26/22 12:20	01/26/22 13:45
60391478005	**DSB-8 (4-5)**	Solid	01/26/22 12:45	01/26/22 13:45
60391478006	**DSB-9 (4-5)**	Solid	01/26/22 12:00	01/26/22 13:45
60391478007	**DSB-5**	Water	01/26/22 13:20	01/26/22 13:45

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528 N. 9th Street
Salina, KS 67401
(785)827-1273

SAMPLE ANALYTE COUNT

Project: Schilling
Pace Project No.: 60391478

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60391478001	**DSB-5 (4-6)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478002	**DSB-5 (12-14)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478003	**DSB-6 (4-5)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478004	**DSB-7 (4-5)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478005	**DSB-8 (4-5)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478006	**DSB-9 (4-5)**	KS MRH/HRH	WFG	3	PASI-K
		EPA 8015B	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	RAD	11	PASI-K
		ASTM D2974	DWC	1	PASI-K
60391478007	**DSB-5**	EPA 8011	AHS	1	PASI-K
		EPA 8015C	WFG	3	PASI-K
		KS LRH: EPA 5030B/8015C	JLO	3	PASI-K
		EPA 6010	MA1	1	PASI-K
		EPA 8260B	CSC	11	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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Pace Analytical Services, LLC
528 N. 9th Street
Salina, KS 67401
(785)827-1273

ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-5 (4-6) **Lab ID: 60391478001** Collected: 01/26/22 10:30 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	**55.1**	mg/kg	9.8	1	01/28/22 11:25	02/01/22 12:21		
MRH (C9-C18)	**2460**	mg/kg	73.8	10	01/28/22 11:25	02/01/22 12:29		M1
Surrogates								
1-Chloro-octadecane (S)	74	%	40-140	1	01/28/22 11:25	02/01/22 12:21	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	**1000**	mg/kg	52.8	10	02/02/22 08:35	02/07/22 09:34		
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	10	02/02/22 08:35	02/07/22 09:34	460-00-4	
Dibromofluoromethane (S)	2230	%	70-130	10	02/02/22 08:35	02/07/22 09:34	1868-53-7	S0
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**20.9**	mg/kg	5.2	5	01/31/22 16:32	02/09/22 11:56	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	**787**	ug/kg	53.5	10	01/31/22 09:17	01/31/22 12:22	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	53.5	10	01/31/22 09:17	01/31/22 12:22	106-93-4	
1,2-Dichloroethane	ND	ug/kg	53.5	10	01/31/22 09:17	01/31/22 12:22	107-06-2	
Ethylbenzene	**1370**	ug/kg	53.5	10	01/31/22 09:17	01/31/22 12:22	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	53.5	10	01/31/22 09:17	01/31/22 12:22	1634-04-4	
Naphthalene	**11500**	ug/kg	107	10	01/31/22 09:17	01/31/22 12:22	91-20-3	
Toluene	ND	ug/kg	214	10	01/31/22 09:17	01/31/22 12:22	108-88-3	
Xylene (Total)	**313**	ug/kg	161	10	01/31/22 09:17	01/31/22 12:22	1330-20-7	
Surrogates								
Toluene-d8 (S)	97	%	80-120	10	01/31/22 09:17	01/31/22 12:22	2037-26-5	
4-Bromofluorobenzene (S)	108	%	83-119	10	01/31/22 09:17	01/31/22 12:22	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	10	01/31/22 09:17	01/31/22 12:22	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**20.4**	%	0.50	1		01/28/22 09:36		

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Pace Analytical Services, LLC
528 N. 9th Street
Salina, KS 67401
(785)827-1273

ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-5 (12-14) **Lab ID: 60391478002** Collected: 01/26/22 10:45 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	ND	mg/kg	10	1	01/28/22 11:25	02/01/22 13:09		
MRH (C9-C18)	**1370**	mg/kg	7.5	1	01/28/22 11:25	02/01/22 13:09		
Surrogates								
1-Chloro-octadecane (S)	61	%	40-140	1	01/28/22 11:25	02/01/22 13:09	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	**231**	mg/kg	21.9	5	02/02/22 08:35	02/07/22 16:34		
Surrogates								
4-Bromofluorobenzene (S)	94	%	70-130	5	02/02/22 08:35	02/07/22 16:34	460-00-4	
Dibromofluoromethane (S)	580	%	70-130	5	02/02/22 08:35	02/07/22 16:34	1868-53-7	S0
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**19.0**	mg/kg	11.2	10	01/31/22 16:32	02/09/22 18:49	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	**364**	ug/kg	22.2	5	01/31/22 09:17	01/31/22 12:42	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	22.2	5	01/31/22 09:17	01/31/22 12:42	106-93-4	
1,2-Dichloroethane	ND	ug/kg	22.2	5	01/31/22 09:17	01/31/22 12:42	107-06-2	
Ethylbenzene	**1960**	ug/kg	22.2	5	01/31/22 09:17	01/31/22 12:42	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	22.2	5	01/31/22 09:17	01/31/22 12:42	1634-04-4	
Naphthalene	**5430**	ug/kg	44.4	5	01/31/22 09:17	01/31/22 12:42	91-20-3	
Toluene	ND	ug/kg	88.8	5	01/31/22 09:17	01/31/22 12:42	108-88-3	
Xylene (Total)	**250**	ug/kg	66.6	5	01/31/22 09:17	01/31/22 12:42	1330-20-7	
Surrogates								
Toluene-d8 (S)	99	%	80-120	5	01/31/22 09:17	01/31/22 12:42	2037-26-5	
4-Bromofluorobenzene (S)	109	%	83-119	5	01/31/22 09:17	01/31/22 12:42	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	5	01/31/22 09:17	01/31/22 12:42	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**21.4**	%	0.50	1		01/28/22 09:36		

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ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-6 (4-5) **Lab ID: 60391478003** Collected: 01/26/22 11:45 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	**18.7**	mg/kg	8.8	1	01/28/22 11:25	02/01/22 13:25		
MRH (C9-C18)	ND	mg/kg	6.6	1	01/28/22 11:25	02/01/22 13:25		
Surrogates								
1-Chloro-octadecane (S)	77	%	40-140	1	01/28/22 11:25	02/01/22 13:25	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	ND	mg/kg	3.7	1	02/02/22 08:35	02/07/22 10:05		
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1	02/02/22 08:35	02/07/22 10:05	460-00-4	
Dibromofluoromethane (S)	112	%	70-130	1	02/02/22 08:35	02/07/22 10:05	1868-53-7	
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**13.1**	mg/kg	5.1	5	01/31/22 16:32	02/09/22 12:10	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	ND	ug/kg	3.9	1	01/31/22 09:17	01/31/22 13:02	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	3.9	1	01/31/22 09:17	01/31/22 13:02	106-93-4	
1,2-Dichloroethane	ND	ug/kg	3.9	1	01/31/22 09:17	01/31/22 13:02	107-06-2	
Ethylbenzene	ND	ug/kg	3.9	1	01/31/22 09:17	01/31/22 13:02	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	3.9	1	01/31/22 09:17	01/31/22 13:02	1634-04-4	
Naphthalene	ND	ug/kg	7.8	1	01/31/22 09:17	01/31/22 13:02	91-20-3	
Toluene	ND	ug/kg	15.6	1	01/31/22 09:17	01/31/22 13:02	108-88-3	
Xylene (Total)	ND	ug/kg	11.7	1	01/31/22 09:17	01/31/22 13:02	1330-20-7	
Surrogates								
Toluene-d8 (S)	107	%	80-120	1	01/31/22 09:17	01/31/22 13:02	2037-26-5	
4-Bromofluorobenzene (S)	105	%	83-119	1	01/31/22 09:17	01/31/22 13:02	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	1	01/31/22 09:17	01/31/22 13:02	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**16.5**	%	0.50	1		01/28/22 09:36		

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ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-7 (4-5) **Lab ID: 60391478004** Collected: 01/26/22 12:20 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	**18.5**	mg/kg	10.0	1	01/28/22 11:25	02/01/22 13:33		
MRH (C9-C18)	ND	mg/kg	7.5	1	01/28/22 11:25	02/01/22 13:33		
Surrogates								
1-Chloro-octadecane (S)	60	%	40-140	1	01/28/22 11:25	02/01/22 13:33	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	ND	mg/kg	5.1	1	02/02/22 08:35	02/07/22 10:21		
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1	02/02/22 08:35	02/07/22 10:21	460-00-4	
Dibromofluoromethane (S)	96	%	70-130	1	02/02/22 08:35	02/07/22 10:21	1868-53-7	
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**17.2**	mg/kg	10.0	10	01/31/22 16:32	02/09/22 18:53	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	ND	ug/kg	4.5	1	01/31/22 09:17	01/31/22 13:22	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.5	1	01/31/22 09:17	01/31/22 13:22	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.5	1	01/31/22 09:17	01/31/22 13:22	107-06-2	
Ethylbenzene	ND	ug/kg	4.5	1	01/31/22 09:17	01/31/22 13:22	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.5	1	01/31/22 09:17	01/31/22 13:22	1634-04-4	
Naphthalene	ND	ug/kg	9.0	1	01/31/22 09:17	01/31/22 13:22	91-20-3	
Toluene	ND	ug/kg	18.0	1	01/31/22 09:17	01/31/22 13:22	108-88-3	
Xylene (Total)	ND	ug/kg	13.5	1	01/31/22 09:17	01/31/22 13:22	1330-20-7	
Surrogates								
Toluene-d8 (S)	107	%	80-120	1	01/31/22 09:17	01/31/22 13:22	2037-26-5	
4-Bromofluorobenzene (S)	106	%	83-119	1	01/31/22 09:17	01/31/22 13:22	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	1	01/31/22 09:17	01/31/22 13:22	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**22.0**	%	0.50	1		01/28/22 09:36		

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ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-8 (4-5) **Lab ID: 60391478005** Collected: 01/26/22 12:45 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	**17.6**	mg/kg	9.8	1	01/28/22 11:25	02/01/22 13:40		
MRH (C9-C18)	ND	mg/kg	7.3	1	01/28/22 11:25	02/01/22 13:40		
Surrogates								
1-Chloro-octadecane (S)	67	%	40-140	1	01/28/22 11:25	02/01/22 13:40	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	ND	mg/kg	4.4	1	02/02/22 08:35	02/07/22 11:07		
Surrogates								
4-Bromofluorobenzene (S)	98	%	70-130	1	02/02/22 08:35	02/07/22 11:07	460-00-4	
Dibromofluoromethane (S)	118	%	70-130	1	02/02/22 08:35	02/07/22 11:07	1868-53-7	
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**19.9**	mg/kg	9.6	10	01/31/22 16:32	02/09/22 18:56	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	ND	ug/kg	3.7	1	01/31/22 09:17	01/31/22 13:42	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	3.7	1	01/31/22 09:17	01/31/22 13:42	106-93-4	
1,2-Dichloroethane	ND	ug/kg	3.7	1	01/31/22 09:17	01/31/22 13:42	107-06-2	
Ethylbenzene	ND	ug/kg	3.7	1	01/31/22 09:17	01/31/22 13:42	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	3.7	1	01/31/22 09:17	01/31/22 13:42	1634-04-4	
Naphthalene	ND	ug/kg	7.5	1	01/31/22 09:17	01/31/22 13:42	91-20-3	
Toluene	ND	ug/kg	14.9	1	01/31/22 09:17	01/31/22 13:42	108-88-3	
Xylene (Total)	ND	ug/kg	11.2	1	01/31/22 09:17	01/31/22 13:42	1330-20-7	
Surrogates								
Toluene-d8 (S)	109	%	80-120	1	01/31/22 09:17	01/31/22 13:42	2037-26-5	
4-Bromofluorobenzene (S)	106	%	83-119	1	01/31/22 09:17	01/31/22 13:42	460-00-4	
1,2-Dichlorobenzene-d4 (S)	100	%	80-120	1	01/31/22 09:17	01/31/22 13:42	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**20.2**	%	0.50	1		01/28/22 09:36		

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ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-9 (4-5) **Lab ID: 60391478006** Collected: 01/26/22 12:00 Received: 01/26/22 13:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
KS MRH/HRH	Analytical Method: KS MRH/HRH Preparation Method: EPA 3546							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	**22.1**	mg/kg	9.5	1	01/28/22 11:25	02/01/22 13:48		
MRH (C9-C18)	ND	mg/kg	7.1	1	01/28/22 11:25	02/01/22 13:48		
Surrogates								
1-Chloro-octadecane (S)	65	%	40-140	1	01/28/22 11:25	02/01/22 13:48	3386-33-2	
LRH (C5 - C8) Soil	Analytical Method: EPA 8015B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	ND	mg/kg	4.0	1	02/02/22 08:35	02/07/22 11:22		
Surrogates								
4-Bromofluorobenzene (S)	96	%	70-130	1	02/02/22 08:35	02/07/22 11:22	460-00-4	
Dibromofluoromethane (S)	120	%	70-130	1	02/02/22 08:35	02/07/22 11:22	1868-53-7	
6010 MET ICP Red. Interference	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
	Pace Analytical Services - Kansas City							
Lead	**20.1**	mg/kg	9.0	10	01/31/22 16:32	02/09/22 18:58	7439-92-1	
8260B MSV 5035A Low Level	Analytical Method: EPA 8260B Preparation Method: EPA 5035A/5030B							
	Pace Analytical Services - Kansas City							
Benzene	ND	ug/kg	4.3	1	01/31/22 09:17	01/31/22 14:01	71-43-2	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.3	1	01/31/22 09:17	01/31/22 14:01	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.3	1	01/31/22 09:17	01/31/22 14:01	107-06-2	
Ethylbenzene	ND	ug/kg	4.3	1	01/31/22 09:17	01/31/22 14:01	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.3	1	01/31/22 09:17	01/31/22 14:01	1634-04-4	
Naphthalene	ND	ug/kg	8.6	1	01/31/22 09:17	01/31/22 14:01	91-20-3	
Toluene	ND	ug/kg	17.2	1	01/31/22 09:17	01/31/22 14:01	108-88-3	
Xylene (Total)	ND	ug/kg	12.9	1	01/31/22 09:17	01/31/22 14:01	1330-20-7	
Surrogates								
Toluene-d8 (S)	107	%	80-120	1	01/31/22 09:17	01/31/22 14:01	2037-26-5	
4-Bromofluorobenzene (S)	106	%	83-119	1	01/31/22 09:17	01/31/22 14:01	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	80-120	1	01/31/22 09:17	01/31/22 14:01	2199-69-1	
Percent Moisture	Analytical Method: ASTM D2974							
	Pace Analytical Services - Kansas City							
Percent Moisture	**19.8**	%	0.50	1		01/28/22 09:36		

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ANALYTICAL RESULTS

Project: Schilling
Pace Project No.: 60391478

Sample: DSB-5 **Lab ID: 60391478007** Collected: 01/26/22 13:20 Received: 01/26/22 13:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
	Pace Analytical Services - Kansas City							
1,2-Dibromoethane (EDB)	ND	ug/L	0.030	1	02/07/22 08:22	02/07/22 14:53	106-93-4	
8015 MOD KS TPH	Analytical Method: EPA 8015C Preparation Method: EPA 3511							
	Pace Analytical Services - Kansas City							
HRH (C19-C35)	ND	mg/L	0.21	1	02/01/22 18:28	02/02/22 11:47		
MRH (C9-C18)	**0.089**	mg/L	0.063	1	02/01/22 18:28	02/02/22 11:47		
Surrogates								
1-Chloro-octadecane (S)	61	%	40-140	1	02/01/22 18:28	02/02/22 11:47	3386-33-2	
LRH (C5 - C8) Water	Analytical Method: KS LRH: EPA 5030B/8015C							
	Pace Analytical Services - Kansas City							
LRH (C5-C8)	**0.89**	mg/L	0.050	1		02/01/22 00:34		
Surrogates								
4-Bromofluorobenzene (S)	101	%	70-130	1		02/01/22 00:34	460-00-4	
Preservation pH	**1.0**			1		02/01/22 00:34		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Lead	**836**	ug/L	200	20	01/31/22 10:04	02/10/22 11:33	7439-92-1	
8260 MSV UST, Water	Analytical Method: EPA 8260B							
	Pace Analytical Services - Kansas City							
Benzene	**1.3**	ug/L	1.0	1		02/04/22 16:44	71-43-2	
1,2-Dichloroethane	ND	ug/L	0.50	1		02/04/22 16:44	107-06-2	
Ethylbenzene	**1.1**	ug/L	1.0	1		02/04/22 16:44	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		02/04/22 16:44	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		02/04/22 16:44	91-20-3	
Toluene	ND	ug/L	1.0	1		02/04/22 16:44	108-88-3	
Xylene (Total)	ND	ug/L	3.0	1		02/04/22 16:44	1330-20-7	
Surrogates								
Toluene-d8 (S)	98	%	80-120	1		02/04/22 16:44	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120	1		02/04/22 16:44	460-00-4	
1,2-Dichlorobenzene-d4 (S)	100	%	80-120	1		02/04/22 16:44	2199-69-1	
Preservation pH	**1.0**		1.0	1		02/04/22 16:44		

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 769333
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8015B
Analysis Description: LRH (C5 - C8) Soil
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

METHOD BLANK: 3072739
Matrix: Solid
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
LRH (C5-C8)	mg/kg	ND	5.0	02/07/22 09:19	
4-Bromofluorobenzene (S)	%	102	70-130	02/07/22 09:19	
Dibromofluoromethane (S)	%	120	70-130	02/07/22 09:19	

LABORATORY CONTROL SAMPLE & LCSD: 3072740 3072741

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
LRH (C5-C8)	mg/kg	20	17.4	17.2	87	86	70-130	1	25	
4-Bromofluorobenzene (S)	%				101	103	70-130			
Dibromofluoromethane (S)	%				123	108	70-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3072742 3072743

Parameter	Units	60391478004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
LRH (C5-C8)	mg/kg	ND	30.1	30.1	24.7	27.1	80	88	70-130	9	25	
4-Bromofluorobenzene (S)	%						95	95	70-130			
Dibromofluoromethane (S)	%						132	124	70-130			S0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768886
QC Batch Method: KS LRH: EPA 5030B/8015C
Analysis Method: KS LRH: EPA 5030B/8015C
Analysis Description: LRH (C5 - C8) Water
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478007

METHOD BLANK: 3071608
Matrix: Water
Associated Lab Samples: 60391478007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
LRH (C5-C8)	mg/L	ND	0.050	01/31/22 19:54	
4-Bromofluorobenzene (S)	%	99	70-130	01/31/22 19:54	

LABORATORY CONTROL SAMPLE & LCSD: 3071609 3071610

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
LRH (C5-C8)	mg/L	0.4	0.43	0.46	106	116	70-130	9	25	
4-Bromofluorobenzene (S)	%				99	101	70-130			

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768966
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

METHOD BLANK: 3071934
Matrix: Solid
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	1.0	02/07/22 18:46	

LABORATORY CONTROL SAMPLE: 3071935

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	100	93.3	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071936 3071937

Parameter	Units	60391478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	20.9	105	105	140	138	114	112	75-125	1	20	

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768900
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478007

METHOD BLANK: 3071648
Matrix: Water
Associated Lab Samples: 60391478007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	10.0	02/07/22 17:56	

LABORATORY CONTROL SAMPLE: 3071649

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	1000	1070	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071650 3071651

Parameter	Units	60391478007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	836	1000	1000	1740	1740	91	90	75-125	0	20	

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768904
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8260B
Analysis Description: 8260B MSV 5035A Low Level
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

METHOD BLANK: 3071675
Matrix: Solid
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	ND	5.0	01/31/22 09:28	
1,2-Dichloroethane	ug/kg	ND	5.0	01/31/22 09:28	
Benzene	ug/kg	ND	5.0	01/31/22 09:28	
Ethylbenzene	ug/kg	ND	5.0	01/31/22 09:28	
Methyl-tert-butyl ether	ug/kg	ND	5.0	01/31/22 09:28	
Naphthalene	ug/kg	ND	10.0	01/31/22 09:28	
Toluene	ug/kg	ND	20.0	01/31/22 09:28	
Xylene (Total)	ug/kg	ND	15.0	01/31/22 09:28	
1,2-Dichlorobenzene-d4 (S)	%	100	80-120	01/31/22 09:28	
4-Bromofluorobenzene (S)	%	105	83-119	01/31/22 09:28	
Toluene-d8 (S)	%	101	80-120	01/31/22 09:28	

LABORATORY CONTROL SAMPLE: 3071676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	1250	1200	96	64-137	
1,2-Dichloroethane	ug/kg	1250	1100	88	58-128	
Benzene	ug/kg	1250	1120	90	67-126	
Ethylbenzene	ug/kg	1250	1090	87	69-127	
Methyl-tert-butyl ether	ug/kg	1250	1140	91	58-137	
Naphthalene	ug/kg	1250	1140	92	60-136	
Toluene	ug/kg	1250	1060	84	80-118	
Xylene (Total)	ug/kg	3750	3170	84	69-130	
1,2-Dichlorobenzene-d4 (S)	%			103	80-120	
4-Bromofluorobenzene (S)	%			96	83-119	
Toluene-d8 (S)	%			101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071677 3071678

Parameter	Units	60391238003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/kg		1620	1620	1900	1830	117	112	23-123	4	50	
1,2-Dichloroethane	ug/kg		1620	1620	1740	1670	107	103	27-116	4	45	
Benzene	ug/kg	ND	1620	1620	1680	1640	103	101	17-134	2	53	
Ethylbenzene	ug/kg	ND	1620	1620	1700	1620	105	100	10-137	5	60	
Methyl-tert-butyl ether	ug/kg		1620	1620	1730	1660	107	102	31-126	4	42	
Naphthalene	ug/kg		1620	1620	2010	1900	107	100	10-131	6	63	

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071677 3071678

Parameter	Units	60391238003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene	ug/kg	ND	1620	1620	1580	1520	97	94	13-131	4	60	
Xylene (Total)	ug/kg	ND	4880	4880	5100	4910	105	101	10-137	4	58	
1,2-Dichlorobenzene-d4 (S)	%						104	103	80-120			
4-Bromofluorobenzene (S)	%						105	105	83-119			
Toluene-d8 (S)	%						100	100	80-120			

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768937
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV UST-WATER
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478007

METHOD BLANK: 3071816 Matrix: Water
Associated Lab Samples: 60391478007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	0.50	02/04/22 16:01	
Benzene	ug/L	ND	1.0	02/04/22 16:01	
Ethylbenzene	ug/L	ND	1.0	02/04/22 16:01	
Methyl-tert-butyl ether	ug/L	ND	1.0	02/04/22 16:01	
Naphthalene	ug/L	ND	10.0	02/04/22 16:01	
Toluene	ug/L	ND	1.0	02/04/22 16:01	
Xylene (Total)	ug/L	ND	3.0	02/04/22 16:01	
1,2-Dichlorobenzene-d4 (S)	%	101	80-120	02/04/22 16:01	
4-Bromofluorobenzene (S)	%	101	80-120	02/04/22 16:01	
Toluene-d8 (S)	%	98	80-120	02/04/22 16:01	

LABORATORY CONTROL SAMPLE: 3071817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	20	20.8	104	75-120	
Benzene	ug/L	20	21.8	109	80-120	
Ethylbenzene	ug/L	20	19.8	99	80-120	
Methyl-tert-butyl ether	ug/L	20	16.9	85	65-130	
Naphthalene	ug/L	20	18.6	93	70-120	
Toluene	ug/L	20	20.6	103	80-120	
Xylene (Total)	ug/L	60	60.8	101	80-120	
1,2-Dichlorobenzene-d4 (S)	%			101	80-120	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071818 3071819

Parameter	Units	60391627005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	10.4	200	200	219	216	104	103	30-160	1	25	
Benzene	ug/L	393	200	200	596	593	102	100	20-155	0	25	
Ethylbenzene	ug/L	139	200	200	344	346	102	103	20-160	1	25	
Methyl-tert-butyl ether	ug/L	ND	200	200	186	178	93	89	25-160	5	30	
Naphthalene	ug/L	140	200	200	360	357	110	109	30-150	1	25	
Toluene	ug/L	1150	200	200	1370	1360	109	101	25-150	1	25	
Xylene (Total)	ug/L	951	600	600	1570	1580	103	105	15-160	1	30	
1,2-Dichlorobenzene-d4 (S)	%						99	99	80-120			

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3071818 3071819

Parameter	Units	60391627005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
4-Bromofluorobenzene (S)	%						98	99	80-120			
Toluene-d8 (S)	%						101	98	80-120			
Preservation pH		1.0			1.0	1.0				0		

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 769893
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478007

METHOD BLANK: 3074530
Matrix: Water
Associated Lab Samples: 60391478007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.030	02/07/22 14:16	

LABORATORY CONTROL SAMPLE & LCSD: 3074531 3074532

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	0.25	0.26	0.27	106	110	60-140	4	15	

MATRIX SPIKE SAMPLE: 3074533

Parameter	Units	60391478007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.25	0.20	83	56-142	

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768678
QC Batch Method: EPA 3546
Analysis Method: KS MRH/HRH
Analysis Description: EPA 8015 KS TPH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

METHOD BLANK: 3070756
Matrix: Solid
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
HRH (C19-C35)	mg/kg	ND	7.3	02/01/22 11:58	
MRH (C9-C18)	mg/kg	ND	5.5	02/01/22 11:58	
1-Chloro-octadecane (S)	%	77	40-140	02/01/22 11:58	

LABORATORY CONTROL SAMPLE & LCSD: 3070757 3070758

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
HRH (C19-C35)	mg/kg	7.4	6.7J	6.4J	90	88	40-140		25	
MRH (C9-C18)	mg/kg	5.6	4.4J	4.3J	80	79	40-140		25	
1-Chloro-octadecane (S)	%				75	71	40-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070759 3070760

Parameter	Units	60391478001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
HRH (C19-C35)	mg/kg	55.1	9.7	9.8	67.6	59.1	129	41	40-140	13	50	
MRH (C9-C18)	mg/kg	2460	7.3	7.3	2870	2820	5540	4890	40-140	2	50	M1
1-Chloro-octadecane (S)	%						71	70	40-140			

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 769114
QC Batch Method: EPA 3511
Analysis Method: EPA 8015C
Analysis Description: EPA 8015C
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478007

METHOD BLANK: 3072211
Matrix: Water
Associated Lab Samples: 60391478007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
HRH (C19-C35)	mg/L	ND	0.20	02/02/22 11:22	
MRH (C9-C18)	mg/L	ND	0.061	02/02/22 11:22	
1-Chloro-octadecane (S)	%	87	40-140	02/02/22 11:22	

LABORATORY CONTROL SAMPLE & LCSD: 3072212 3072213

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
HRH (C19-C35)	mg/L	0.23	0.27	0.28	115	121	40-140	6	25	
MRH (C9-C18)	mg/L	0.17	0.15	0.16	89	92	40-140	5	25	
1-Chloro-octadecane (S)	%				83	86	40-140			

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QUALITY CONTROL DATA

Project: Schilling
Pace Project No.: 60391478

QC Batch: 768716
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

METHOD BLANK: 3070880
Matrix: Solid
Associated Lab Samples: 60391478001, 60391478002, 60391478003, 60391478004, 60391478005, 60391478006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	01/28/22 09:35	

SAMPLE DUPLICATE: 3070881

Parameter	Units	60391478001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.4	20.1	1	20	

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QUALIFIERS

Project: Schilling
Pace Project No.: 60391478

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Schilling
Pace Project No.: 60391478

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60391478007	**DSB-5**	EPA 8011	769893	EPA 8011	769948
60391478001	**DSB-5 (4-6)**	EPA 3546	768678	KS MRH/HRH	768918
60391478002	**DSB-5 (12-14)**	EPA 3546	768678	KS MRH/HRH	768918
60391478003	**DSB-6 (4-5)**	EPA 3546	768678	KS MRH/HRH	768918
60391478004	**DSB-7 (4-5)**	EPA 3546	768678	KS MRH/HRH	768918
60391478005	**DSB-8 (4-5)**	EPA 3546	768678	KS MRH/HRH	768918
60391478006	**DSB-9 (4-5)**	EPA 3546	768678	KS MRH/HRH	768918
60391478007	**DSB-5**	EPA 3511	769114	EPA 8015C	769368
60391478001	**DSB-5 (4-6)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478002	**DSB-5 (12-14)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478003	**DSB-6 (4-5)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478004	**DSB-7 (4-5)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478005	**DSB-8 (4-5)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478006	**DSB-9 (4-5)**	EPA 5035A/5030B	769333	EPA 8015B	769894
60391478007	**DSB-5**	KS LRH: EPA 5030B/8015C	768886		
60391478001	**DSB-5 (4-6)**	EPA 3050	768966	EPA 6010	769220
60391478002	**DSB-5 (12-14)**	EPA 3050	768966	EPA 6010	769220
60391478003	**DSB-6 (4-5)**	EPA 3050	768966	EPA 6010	769220
60391478004	**DSB-7 (4-5)**	EPA 3050	768966	EPA 6010	769220
60391478005	**DSB-8 (4-5)**	EPA 3050	768966	EPA 6010	769220
60391478006	**DSB-9 (4-5)**	EPA 3050	768966	EPA 6010	769220
60391478007	**DSB-5**	EPA 3010	768900	EPA 6010	769016
60391478001	**DSB-5 (4-6)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478002	**DSB-5 (12-14)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478003	**DSB-6 (4-5)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478004	**DSB-7 (4-5)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478005	**DSB-8 (4-5)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478006	**DSB-9 (4-5)**	EPA 5035A/5030B	768904	EPA 8260B	768910
60391478007	**DSB-5**	EPA 8260B	768937		
60391478001	**DSB-5 (4-6)**	ASTM D2974	768716		
60391478002	**DSB-5 (12-14)**	ASTM D2974	768716		
60391478003	**DSB-6 (4-5)**	ASTM D2974	768716		
60391478004	**DSB-7 (4-5)**	ASTM D2974	768716		
60391478005	**DSB-8 (4-5)**	ASTM D2974	768716		
60391478006	**DSB-9 (4-5)**	ASTM D2974	768716		

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www.pacelabs.com

Sample Condition Upon Receipt

WO# : 60391478

60391478

Client Name: Dragun

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☑

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: 300 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.4 **Corr. Factor** 0.1 **Corrected** 1.5

Date and initials of person examining contents: KSB 1.26.22

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: Wt/SL	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	☐Yes ☐No ☑N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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Sample Condition Upon Receipt

WO#: 60391478
PM: GJG **Due Date: 02/09/22**
CLIENT: SA-Dragun

Client Name: Dragun

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☐ Client ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☑

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☐ None ☐ Other ☐

Thermometer Used: 312 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.5 **Corr. Factor** Ø **Corrected** 2.5

Date and initials of person examining contents: KSB 1·26·22

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	Wt samples contain sediment
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: SL/Wt	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) BP3N pH~7	☐Yes ☑No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added. added 2.5mL 1:1 HNO_3 1·27·22 930 #47568 pH after N/P: <2
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☑No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

60391478

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Page : 1 Of 1

Section A — Required Client Information:

Company:	Dragun Corporation
Address:	30445 Northwestern Hwy. #260
	Farmington, MI 48334
Email:	jcollins@dragun.com
Phone:	NONE Fax:
Requested Due Date:	

Section B — Required Project Information:

Report To:	John Collins
Copy To:	
Purchase Order #:	
Project Name:	Schilling
Project #:	

Section C — Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	petra.craddock@pacelabs.com.
Pace Profile #:	0

Regulatory Agency	
State / Location	
	Kansas

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): 8260 UST	8011 EDB	TPH LKS LRH	TPH KS MR/HRH	Lead 6010		% Moisture/Dry weight	8260 EZ SOIL	TPH KS LRLH SOIL	TPH KS MRH/HRH,Lead SC			Residual Chlorine (Y/N)	
1	DSB-5 (4-6)	SS	G			1/24	1030									X								X	X	X	X				
2	DSB-5 (12-14)	SS	G				1045									X								X	X	X	X				
3	DSB-6 (4-5)	SS	G				1145									X								X	X	X	X				
4	DSB-7 (4-5)	SS	G				1220									X								X	X	X	X				
5	DSB-8 (4-5)	SS	G				1245									X								X	X	X	X				
6	DSB-9 (4-5)	SS	G				1200									X								X	X	X	X				
7																															
8	DSB-5	SS	G			1/24	1320					X	X					X	X	X	X	X									
9		GW																													
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Bridget He	1/24/22	1345	KBetherPace	1-26-22	1345	2.5	Y	N	Y
	KBetherPace	1-27-22	1630							
				DRAGUN/PACE	1/28/22	0700	1.4			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Bridget Heimann

SIGNATURE of SAMPLER: Bridget He — DATE Signed: 1/24/22

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical™	Document Name: Internal Shipping Manifest	Document Revised: July 9, 2018 Page 1
	Document No.:	Issuing Authorities: Pace Lenxa Quality Office

Internal Shipping Manifest

SA = Pace - Salina: 528 N 9th St, Salina, KS 67401

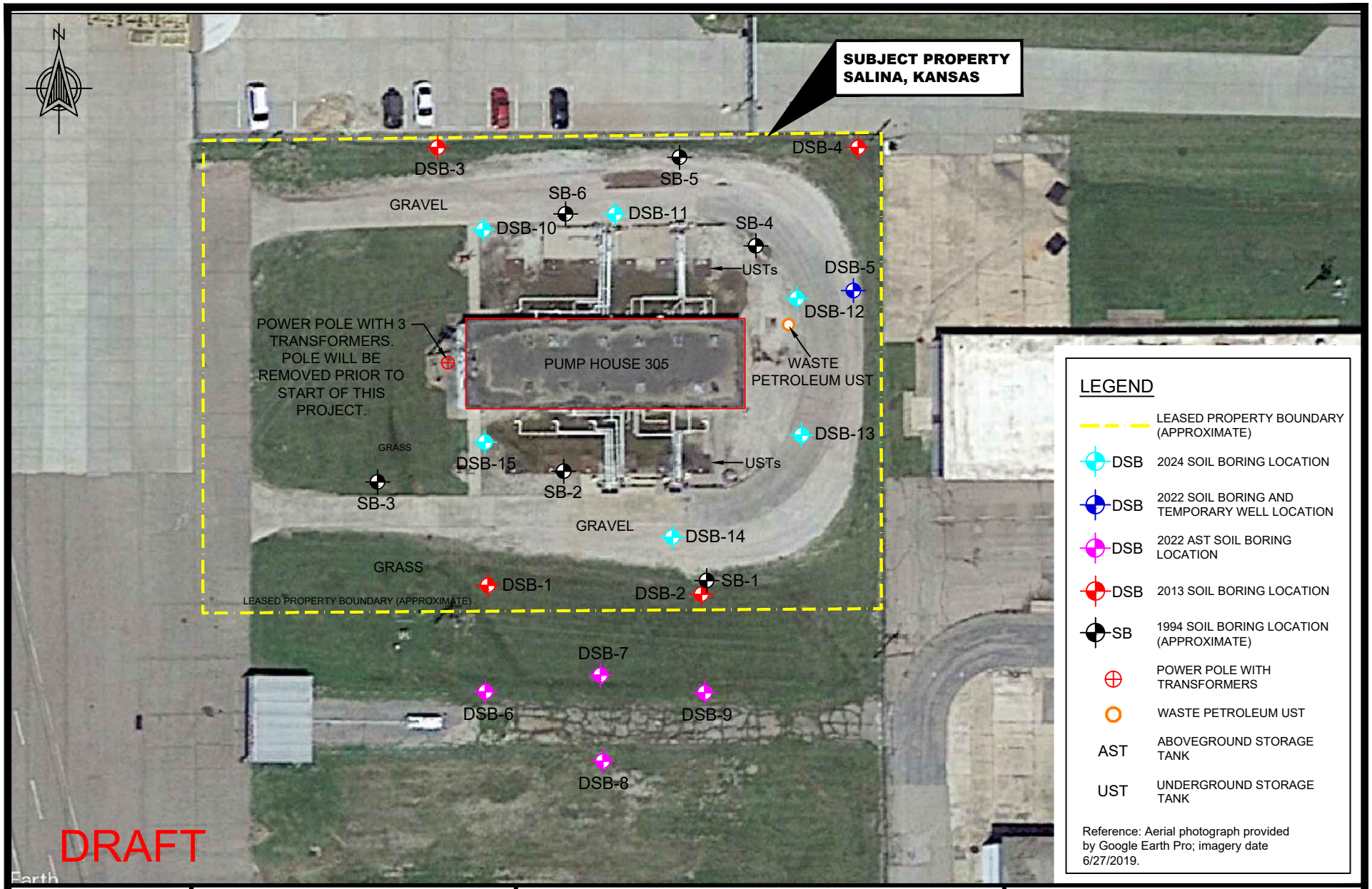
LEN = Pace -Lenexa: 9608 Loiret Blvd - Lenexa, KS 66219

FRN = Pace -SE Kansas: 808 W Mckay St, Frontenac, KS 66763

File ID	Shipping Laboratory Location Code	Received Laboratory Location Code		
	SA	**LEN**		
		Received Cooler Temperature		
		IR Gun ID:	T296	
Cooler ID	Packaged on Ice (Y/N)	Cooler Temp:	Received on Ice	Samples Intact
Satolen 12	Yes	0.9	Y	Y
" 13	↓	1.4	↓	↓
" 14	↓	1.6	↓	↓
" 15	↓		↓	↓

		Pace Location	Date	Time
Signature Relinquished	KBethe	SA	1.27.22	1630
Signature Received	DRADUK \ PALT	LEN	1/28/22	0700
Signature Relinquished				
Signature Received				
Signature Relinquished				
Signature Received				

Note: The last person to receive the coolers is the person who takes the cooler temperatures.



SCALE

0 FEET 50

Dragun Corporation
Environmental Advisors

File: K:\2020\31100-04 Salina Airport Authority\CAD\Bid Specs
Document 31100-04 Figure 2 Date: 6/3/2024

UST SYSTEM DECOMMISSIONING
PUMP HOUSE 305, SALINA REGIONAL
AIRPORT INDUSTRIAL CENTER
SALINA, KANSAS

FIGURE 2
PROPERTY BOUNDARY MAP AND
SOIL BORING LOCATION MAP

US CAD STANDARDS

SYMBOLS OF SAMPLE LOCATIONS

BORINGS
- ID SOIL BORING (DRAGUN)
- ID SOIL BORING - HISTORIC
- ID SOIL BORING - PROPOSED
- 1A01E SOIL SAMPLE LOCATION - HISTORIC
- HAND AUGER
- ID BORING EXTRA 1
- BORING EXTRA 2

WELLS
- ID MONITORING WELL (DRAGUN)
- ID MONITORING WELL - HISTORIC / OTHERS
- ID MONITORING WELL - OBSERVATION
- ID MONITORING WELL - PROPOSED
- ID MONITORING WELL - TEMPORARY
- ID EXTRACTION WELL
- ID INJECTION WELL
- DSP PIEZOMETER
- ID PUMPING WELL
- PRIVATE OR RESIDENTIAL WELL
- ID RECOVERY WELL
- ID EXTRA 1
- ID EXTRA 2
- ID EXTRA 3
- EXTRA 4

INJECTION/EXTRACTION
- DIO INJECTION LOCATION (ENHANCED BIOREMEDIATION)
- DII INJECTION LOCATION (ZVI BARRIER)

AIR / VAPOR SAMPLES
- ID GAS VAPOR POINT (DRAGUN)
- ID DSV SOIL VAPOR MONITORING POINT (DRAGUN)
- ID DSV SOIL VAPOR MONITORING POINT - HISTORIC
- ID DSV SOIL VAPOR AMBIENT AIR MONITORING POINT (DRAGUN)
- ID SOIL VAPOR SHALLOW EXTRACTION WELL
- ID SOIL VAPOR DEEP EXTRACTION WELL
- AMBIENT AIR (DAA)
- INDOOR AIR (DIA)
- SUB-SLAB SOIL VAPOR (DSV)
- ID MPVE LOCATION
- VAPOR EXTRA 1
- VAPOR EXTRA 2

EXCAVATION SAMPLES
- ID EXCAVATION DISPENSER SOIL VERIFICATION SAMPLE
- SP EXCAVATION SOIL PILE SAMPLE
- ID EXCAVATION FLOOR SOIL VERIFICATION SAMPLE
- ID EXCAVATION SIDEWALL SOIL VERIFICATION SAMPLE
- ID FLOOR SOIL SCREENING POINT
- ID SIDEWALL SOIL SCREENING POINT
- ID EXCAVATION EXTRA 1
- EXCAVATION EXTRA 2

SURFACE WATER SAMPLES
- ID STREAM GAUGE LOCATION
- SEEP SEEP
- DSW/DSD SURFACE WATER/SEDIMENT LOCATION

VARIOUS
- T-01 TEMPERATURE MONITOR POINT
- ID ISTD HEATER SHALLOW
- ID ISTD HEATER DEEP
- H ISTED HEATER W VEW
- ID VARIOUS EXTRA 1
- ID VARIOUS EXTRA 2
- ID VARIOUS EXTRA 3
- ID
- DPW ID
- ID

UTILITY LINES & SYMBOLS
- BC BURIED CONDUIT
- E ELECTRIC LINE
- F FIBEROPTIC LINE
- GAS NATURAL GAS LINE
- G GAS LINE
- ROOF DRAIN
- SAN SANITARY SEWER
- STM STORM SEWER
- P PHONE
- T TELEPHONE
- UEL UNDERGROUND ELECTRIC LINE
- WAT WATER LINE
- ID CATCH BASIN - STORM
- CATCH BASIN - STORM WITH STRUCTURAL CONTROLS
- DRAIN - FLOOR
- DRAIN - ROOF
- DRAIN - DOWNSPOUT
- MANHOLE - SANITARY
- PP ELECTRIC POLE
- E ELECTRIC METER
- E ELECTRIC TRANSFORMER PAD
- G GAS METER
- LIGHT POLE
- HYDRANT
- OIL/WATER SEPARATOR
- SUMP PUMP
- W WATER
- WV WATER VALVE

SYMBOLS OF WITHOUT ATTRIBUTES

1 2 3 4 5 6 7 8 9 10

LEGEND
- TEXT
- TEXT
- TEXT
- TEXT
- TEXT
- TEXT

NOTES
1. fasl = ELEVATION IN FEET ABOVE SEA LEVEL (RELATIVE)
2. EOB = END OF BORING
3. G = GRADE
4. (P) = PROJECTED
5. ALL GEOLOGICAL CONTACTS APPROXIMATE EXCEPT IN BOREHOLES WHERE OBSERVED
6. SOME SOIL BORINGS AND MONITORING WELL ELEVATIONS ASSUMED

SUBJECT PROPERTY
CITY, MICHIGAN

PROTECTIVE EQUIPMENT:
- Equipment Storage (1 total)
- Personal Protective Equipment (PPE) (1 total)
- Eyewash Station (11 total)
- Safe Zone Shelter (4 total)
- Fire Extinguisher (47 total)
- Shower Station (10 total)
- First Aid Station (9 total)
- Universal Spill Kit (5 total)
- MSDS Station (7 total)
- EXIT

ABBREVIATIONS LEGEND
1. AS = ARSENIC
2. BIS(2-ETHYLHEXYL)PHTHALATE
3. BCM = BROMOCHLOROMETHANE
4. BTEX = BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
5. CARBON TET. OR CT = CARBON TETRACHLORIDE
6. CCl_4 = CARBON TETRACHLORIDE
7. DBCM = DIBROMOCHLOROMETHANE
8. DCA = DICHLOROETHANE
9. DCE = DICHLOROETHENE
10. DSB = DRAGUN SOIL BORING
11. DTW = DRAGUN TEMPORARY MONITORING WELL
12. DW = DRINKING WATER
13. EOB = END OF BORING
14. fasl = FEET ABOVE SEA LEVEL
15. GCC = GENERIC CLEANUP CRITERIA
16. GSI = GROUNDWATER SURFACE WATER INTERFACE
17. GW = GROUNDWATER SURFACE WATER INTERFACE
18. HTP = HYDRAULIC PROFILING TOOL
19. ISTD = IN SITU THERMAL DESORPTION
20. ISVSI = INFINITE SOURCE VOLATILE SOIL INHALATION RBSLs
21. KDHE = KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
22. LNAPL = LIGHT NONAQUEOUS PHASE LIQUID
23. LTM - LONG TERM MONITORING WELL
24. MEK = 2-BUTANONE
25. MTBE = METHYL TERT-BUTYL ETHER
26. NA = NOT ANALYZED
27. ND = NOT DETECTED ABOVE TARGET DETECTION LIMITS
28. ND = NONDETECT
29. OU = OPERABLE UNIT
30. PAHs = POLYNUCLEAR AROMATIC HYDROCARBONS
31. PCBs = POLYCHLORINATED BIPHENYLS
32. PCE = TETRACHLOROETHENE
33. PID = PHOTOIONIZATION DETECTOR
34. PNAs = POLYNUCLEAR AROMATIC HYDROCARBONS
35. (P) = PROJECTED
36. REC = RECOGNIZED ENVIRONMENTAL CONDITION
37. RSBLs = PART 213 RISK-BASED SCREENING LEVELS
38. RSL = USEPA REGIONAL SCREENING LEVEL
39. SVE = SOIL VAPOR EXTRACTION
40. SVIIC = SOIL VOLATILIZATION TO INDOOR AIR INHALATION RBSLs
41. TCA = TRICHLOROETHANE
42. TCE = TRICHLOROETHENE
43. TCH = THERMAL CONDUCTION HEATING
44. TMB = TRIMETHYLBENZENE ISOMERS
45. TTZ = TARGET TREATMENT ZONE
5. UST = UNDERGROUND STORAGE TANK
6. VEW = VAPOR EXTRACTION WELL
7. VC = VINYL CHLORIDE
8. VOCs = VOLATILE ORGANIC COMPOUNDS
9. µg/kg = MICROGRAMS PER KILOGRAM
10. µg/L = MICROGRAMS PER LITER
11. µg/m3 = MICROGRAM PER CUBIC METER
12. PPM = PARTS PER MILLION

SAFB ABBREVIATIONS LEGEND
- ft bgs Feet Below Ground Surface
- ft2 Square Feet
- GAC Granular Activated Carbon
- gpm Gallons per Minute
- ISTD In Situ Thermal Desorption
- ISTR In Situ Thermal Remediation
- kW Kilowatt
- kWh Kilowatt Hours
- lbs Pounds
- LGAC Liquid- Phase Granular Activated Carbon
- LNAPL Light Non-Aqueous Phase Liquid
- mg/kg Milligram per Kilogram
- NAPL Non-Aqueous Phase Liquid
- O&M Operations & Maintenance
- PCE Tetrachloroethene
- REC Renewable Energy Credits
- RIWP/RIR Remedial Investigation Work Plan and Remedial Investigation Report
- SAFB Schilling Air Force Base
- SVE Soil-Vapor Extraction
- TCE Trichloroethene
- TCH Thermal Conduction Heating
- TMPs Temperature Monitoring Points
- TTZ Target Treatment Zone
- VEWs Vapor Extraction Wells
- VGAC Vapor Phase Granular Activated Carbon
- VOCs Volatile Organic Compounds
- ISTD In Situ Thermal Desorption
- ISTR In Situ Thermal Remediation

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Prepared at the Request of Legal Counsel

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LINE TYPES
- A — A' CROSS-SECTION ORIENTATION
- DITCH
- 600 GROUNDWATER CONTOUR
- EXTENT OF EXCAVATION
- FENCE1
- FENCE2
- FENCE - CHAIN LINK
- PROPERTY LINE
- RIGHT-OF-WAY
- ROAD
- RAILROAD
- SETBACK

TANK DETAILS
- Fill Port
- Former UST & ID
- Former AST & ID
- Former Dispenser
- Tank Pad

HATCHING LEGEND
- ASPHALT
- CONCRETE

BLOCK LEGEND
- GATE_OPENING
- GATE_SLIDING
- GROUNDWATER FLOW DIRECTION (DEMONSTRATIVE, ILLUSTRATIVE, APPROXIMATE)
- SURFACE WATER FLOW
- 3D FLOW ARROW
- 1 DETAIL ID
- OVERHEAD DOOR

EXCEEDANCE LEGEND
- Concentration in Goundwater (does not exceed xxx criteria) for xxx
- SHADED SAMPLE LOCATION DOES NOT EXCEED APPLICABLE MDEQ GENERIC DIRECT CONTACT CRITERIA
- Concentration in Goundwater exceeds xxx critera for xxx
- Shaded Sample Location Tested for XXXX - Exceeds (criteria)
- Estimated Area > Generic C_{SAT}
- Estimated Area > Generic SVIC
- Estimated Area of Impacted Surface Soil
- **BOLD** INDICATES DETECTED HAZARDOUS SUBSTANCE EXCEEDS PART 201 NON-RESIDENTIAL CRITERIA

NOTES
1. All utility locations are approximate.
2. Some utilities may not be included on this map.
3. Proposed locations may be adjusted based on site conditions.
4. This drawing is not a legal property survey.
5. The dragun corporation, soil boring, monitoring well, and piezometer locations measured with a Garmin GPS unit accurate to ±15 feet.
6. All concentrations are reported in micrograms per kilogram (µg/kg).
7. All concentrations are reported in milligrams per liter (mg/L).
8. All concentrations are reported in micrograms per liter (µg/L).
9. All tank components considered to be former.
10. This figure was prepared assuming that groundwater observed in individual wells represents areally continuous saturated conditions.
11. Sample locations were measured or surveyed on xxx
12. Criteria from MDEQ Guidance Document for the Vapor Intrusion Pathway, May 2013 - Indoor Air, Soil Gas, Groundwater, and Soil Screening Values for the Vapor Intrusion Pathway.
13. Soil borings, temporary monitoring wells and property line are approximate.
6. TCE concentration contours are approximate in part due to various dates of sampling and projected boring locations.

TITLE - AERIAL		
HEADER	HEADER	HEADER
DATA	DATA	DATA

ADJOINING PROPERTIES	
ID	PROPERTY
1	Name & address
	Name & address
	Name & address
	Name & address
	Name & address
	Name & address
	Name & address
	Name & address

Sample ID	Depth (ft)	Detected Chemical Concentration (µg/kg)	
		Benzene	Ethylbenzene
DSB-7	3-3.2	340	16,000
DSB-7	16.6-17	<50	<50
DSB-8	6-7	<50	<50
MDEQ Part 201 Generic Cleanup Criteria and Soil Screening Levels for a Nonresidential Land Use:			
Soil Volatilization to Indoor Air Inhalation Criteria		8,400	460,000 (C)
Finite VSIC for 2 Meter Source Thickness		230,000	6,500,000
Particulate Soil Inhalation Criteria		470,000,000	13,000,000,000
Direct Contact Criteria		840,000 (C)	71,000,000 (C)

	SAMPLE	DEPTH
1	PARAMETER	XXXX
2	PARAMETER	XXXX
	PARAMETER	XXXX
3	PARAMETER	XXXX
	PARAMETER	XXXX
4	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
5	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
6	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
7	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
8	PARAMETER	XXXX
	PARAMETER	XXXX
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	PARAMETER	XXXX
	PARAMETER	XXXX
9	PARAMETER	XXXX
	PARAMETER	XXXX
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10	PARAMETER	XXXX
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11	PARAMETER	XXXX
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	PARAMETER	XXXX
12	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
13	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
14	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
15	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX
	PARAMETER	XXXX

AS CONSTRUCTED
date

I, hereby certify that this design plan conforms to good engineering practices.

Khaled Chekiri | Professional Engineer No. 45591 | Date

Table 1: Summary of Volatile Organic Compound Concentrations
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project # 30425-02

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane[1]	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone	2-Chloroethylvinylether	2-Chlorotoluene	2-Hexanone
DSB-1	11 - 12	ND(20)	ND(20)	ND(150) M	ND(100) M	ND(20)	ND(20)	ND(20)	ND(20) M	ND(170) M	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(100) M	ND(70) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(1400) M	ND(230) EV	ND(20)	ND(6300) M
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(21) QC	ND(4.2) EV	ND(4.2)	ND(21)
DSB-2	9 - 10	ND(20)	ND(20)	ND(150) M	ND(340) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(50)	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(250) M	ND(270) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(6000) M	ND(1600) M EV	ND(20)	ND(23000) M E
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(21) QC	ND(4.3) EV	ND(4.3)	ND(21)
DSB-3	10 - 13	ND(20)	ND(20)	ND(100) M	ND(300) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(500)	ND(20)	ND(20)	ND(190) M	ND(140) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(2800) M	ND(230) EV	ND(20)	ND(1500) M
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(22) QC	ND(4.3) EV	ND(4.3)	ND(22)
DSB-4	10 - 12	ND(20)	ND(20)	ND(390) M	ND(430) M	ND(20)	ND(20)	ND(20)	ND(100) M	ND(270) M	ND(50) M	ND(20)	ND(500)	ND(20)	ND(20)	ND(140) M	ND(30) M	ND(20)	ND(20)	ND(20)	ND(20)	ND(20) QC	ND(3000) M	ND(320) M EV	ND(20)	ND(920) M
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(20) QC	ND(4.0) EV	ND(4.0)	ND(20)
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																										
Soil Pathway**		27,800	11,800,000	8,210	15,600	46,800	313,000	NVE	NVE	57.6	89,200	54,000	9,930	483	2,340,000	6,270	12,900	243,000	NVE	NVE	37,500	NVE	26,000,000	NVE	542,000	NVE
Soil to Groundwater Pathway		114	5,210,000	16	81	269	85.9	NVE	NVE	0.127	19,300	1,070	5.43	0.598	48,400	60	81.7	5,510	NVE	NVE	5,940	NVE	24,200	NVE	7,180	NVE

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		4-Chlorotoluene	4-Isopropyltoluene	4-Methyl-2-Pentanone	Acetone	Acrolein	Acrylonitrile	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethan	Ethylbenzene	Hexachlorobutadiene	Hexane
DSB-1	11 - 12	ND(20)	ND(20)	ND(31000) M E	ND(500)	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(46)	ND(20)	ND(20)	ND(46) QC	ND(46)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(46)	ND(20)	ND(20)	ND(20)	ND(46)
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(21) QC	ND(21)	ND(21) EV	ND(21)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC	ND(4.2)	ND(4.2)	ND(4.2) QC
DSB-2	9 - 10	ND(20)	ND(20)	ND(72000) M E	ND(900) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(50)	ND(80) M	ND(20)	ND(50) QC	ND(50)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(50)	ND(20)	ND(20)	ND(20)	ND(80) M
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(21) QC	ND(21)	ND(21) EV	ND(21)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC
DSB-3	10 - 13	ND(20)	ND(20)	ND(61000) M E	ND(2000) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(47) QC	ND(47)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	ND(20)	ND(20)	ND(47)
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(22) QC	ND(22)	ND(22) EV	ND(22)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC	ND(4.3)	ND(4.3)	ND(4.3) QC
DSB-4	10 - 12	ND(20)	ND(20)	ND(29000) M E	ND(5000) M	ND(1200) EV	ND(500)	ND(20)	ND(20)	ND(48)	ND(70) M	ND(20)	ND(48) QC	ND(48)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(48)	ND(20)	ND(20)	ND(20)	ND(48)
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(20) QC	ND(20)	ND(20) EV	ND(20)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC	ND(4.0)	ND(4.0)	ND(4.0) QC
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																									
Soil Pathway**		NVE	NVE	4,450,000	50,300,000	192	3,180	15,900	NVE	NVE	3,930	1,010,000	9,390	1,020,000	8,440	380,000	18,200,000	4,220	146,000	94,700	NVE	227,000	82,000	61,100	656,000
Soil to Groundwater Pathway		NVE	NVE	6,690	51,600	0.175	2.8	168	NVE	NVE	841	832	50	6,710	73.4	5,100	128,000	850	924	834	NVE	13,500	65,600	1,100	50,100

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																							
		Isopropylbenzene	MTBE	Methyl iodide	Methylene chloride	Naphthalene	Styrene	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane	Vinyl acetate	Vinyl chloride	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	m+p-Xylene	n-Butylbenzene	n-Propylbenzene	o-Xylene	sec-butylbenzene	tert-Butylbenzene	trans-1,2-Dichloroethene	trans-1,3-dichloropropene	trans-1,4-Dichloro-2-butene	Freon TF[2]
DSB-1	11 - 12	ND(20)	ND(20)	ND(46)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(230) EV	ND(20)	ND(20)	ND(20)	ND(46)	**96 EC**	**30**	ND(20)	**160**	ND(20)	ND(20)	ND(20)	ND(1600) M	ND(20)
DSB-1	22 - 24	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(42) EV	ND(4.2) QC	ND(4.2)	ND(4.2) QC	ND(8.3)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)	ND(4.2)
DSB-2	9 - 10	**82**	ND(20)	ND(50)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(250) EV	ND(20)	ND(20)	ND(20)	ND(50)	**50 EC**	**220**	ND(20)	**30**	ND(20)	ND(20)	ND(20)	ND(3700) M	ND(20)
DSB-2	25 - 27	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(43) EV	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(8.5)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)
DSB-3	10 - 13	ND(20)	ND(20)	ND(47)	ND(20)	ND(20) QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(230) EV	ND(20)	ND(20)	ND(20)	ND(47)	ND(20)	**40**	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(2400) M	ND(20)
DSB-3	22.5 - 25	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(43) EV	ND(4.3) QC	ND(4.3)	ND(4.3) QC	ND(8.7)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)	ND(4.3)
DSB-4	10 - 12	**40**	ND(20)	ND(48)	ND(20)	ND(60) M QC	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(240) EV	ND(20)	ND(20)	ND(20)	ND(48)	**61 EC**	**92**	ND(20)	**150**	ND(20)	ND(20)	ND(20)	ND(1600) M	ND(20)
DSB-4	25 - 27	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(40) EV	ND(4.0) QC	ND(4.0)	ND(4.0) QC	ND(8.1)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)	ND(4.0)
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																									
Soil Pathway**		NVE	585,000	NVE	149,000	30,500	7,020,000	7,540	4,320,000	41,000	1,000,000	1,260,000	4,470	115,000	23,300	936,000	285,000	4,070,000	936,000	276,000	NVE	202,000	NVE	NVE	13,800,000
Soil to Groundwater Pathway		NVE	848	NVE	42.9	349	9,340	121	51,200	84.2	21,500	2,090	20.5	855	91.6	809,000	10,200	110,000	809,000	8,270	NVE	1,220	NVE	NVE	321,000

NOTES:

BOLD	Bold type indicates the detection of a hazardous substance.
µg/kg	micrograms per kilogram.
ND	Not Detected below the concentration noted in parenthesis (i.e. the "reporting limit").
M	Reporting limit higher than normal due to interferences.
QC	The response for this analyte exceeded the calibration range of the instrument; the reported result, if provided, is estimated.
EV	Using the recommended analytical procedure, this analyte routinely yields low and/or variable recoveries. The stated reporting limit or concentration is an estimated value.
E	Concentration or reporting limit is an estimated value. Matrix interferences and/or sample heterogeneity were noted at the time of sample analysis.
EC	This result is estimated due to insufficient chromatographic resolution from other compounds.
NVE	No Value Established by the Kansas Department of Health and Environment.
*	Source: Kansas Department of Health and Environment, Bureau of Environmental Remediation, "Risk-Based Standards for Kansas, RSK Manual - 5th Version," October 2010.
**	Soil Pathway: Includes the protection of the ingestion of contaminated soil, inhalation of VOCs or fugitive emission dusts, and dermal contact with contaminated soil.
1	1,2-Dibromomethane is a synonym for Ethylene Dibromide.
2	Freon TF is a synonym for 1,1,2-Trichloro-1,2,2-trifluoroethane.

Table 2: Summary of Polynuclear Aromatic Hydrocarbon and Lead Concentrations
Pump House 305
Salina Regional Airport Industrial Center
Salina, Kansas
Project # 30425-02

Soil Boring I.D.	Soil Sample Interval (fbgl)	Hazardous Substance and Concentration (µg/kg)																
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Lead
DSB-1	11 - 12	ND(700)	ND(700)	**80 QC**	**120 QC**	**60**	**70 QC**	ND(50) QC	ND(50) QC	**70 QC**	ND(50)	**0.4**	ND(100) QC	ND(50)	ND(50)	**0.3**	**0.3**	**11,000**
DSB-1	22 - 24	ND(70)	ND(70)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(10)	ND(10)	ND(5)	ND(5)	ND(20)	ND(10)	**2,100**
DSB-2	9 - 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**14,000**
DSB-2	25 - 27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,900**
DSB-3	10 - 13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13,000**
DSB-3	22.5 - 25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,000**
DSB-4	10 - 12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**13,000**
DSB-4	25 - 27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,600**
Kansas Department of Health and Environment Tier 2 Risk-Based Soil Cleanup Levels for a Residential Land Use Scenario*:																		
Soil Pathway**		3,420,000	NVE	18,000,000	10,900	1,090	10,900	NVE	109,000	1,090,000	1,090	2,440,000	2,360,000	10,900	30,500	NVE	1,830,000	400,000
Soil to Groundwater Pathway		255,000	NVE	3,770,000	7,890	23,500	19,200	NVE	190,000	805,000	3,080	2,830,000	297,000	45,500	349	NVE	2,190,000	NVE

NOTES:

BOLD Bold type indicates the detection of a hazardous substance.
µg/kg micrograms per kilogram.
ND Not Detected below the concentration noted in parenthesis (i.e. the "reporting limit").
QC The response for this analyte exceeded the calibration range of the instrument; the reported result, if provided, is estimated.
NVE No Value Established by the Kansas Department of Health and Environment.
NA Not Analyzed.
* Source: Kansas Department of Health and Environment, Bureau of Environmental Remediation, "Risk-Based Standards for Kansas, RSK Manual - 5th Version," October 2010.
** Soil Pathway: Includes the protection of the ingestion of contaminated soil, inhalation of VOCs or fugitive emission dusts, and dermal contact with contaminated soil.

Table 1: Laboratory Data Summary, Soil
Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue, Salina, Kansas
Project #31100-02

			Sample ID	DSB-5 (4-6)	DSB-5 (12-14)	DSB-6 (4-5)	DSB-7 (4-5)	DSB-8 (4-5)	DSB-9 (4-5)
			Date, Time	1/26/22, 10:30 AM	1/26/22, 10:45 AM	1/26/22, 11:45 AM	1/26/22, 12:20 PM	1/26/22, 12:45 PM	1/26/22, 12:00 PM
			Lab Sample ID	60391478001	60391478002	60391478003	60391478004	60391478005	60391478006
Analytical Parameters	**CAS Number**	**KDHE Non-Residential Soil Criteria (µg/kg)**	**Units**						
LRH (C5-C8)		950000	µg/kg	**1000000**	231000	U	U	U	U
MRH (C9-C18)		350000	µg/kg	**2460000**	**1370000**	U	U	U	U
HRH (C19-C35)		275000000	µg/kg	55100	U	18700	18500	17600	22100
1,2-Dibromoethane (EDB)	106-93-4	859	µg/kg	U	U	U	U	U	U
1,2-Dichloroethane	107-06-2	10900	µg/kg	U	U	U	U	U	U
Benzene	71-43-2	28200	µg/kg	787	364	U	U	U	U
Ethylbenzene	100-41-4	145000	µg/kg	1370	1960	U	U	U	U
Methyl-tert-butyl ether	1634-04-4	1050000	µg/kg	U	U	U	U	U	U
Naphthalene	91-20-3	64700	µg/kg	11500	5430	U	U	U	U
Toluene	108-88-3	29800000	µg/kg	U	U	U	U	U	U
Xylene (Total)	1330-20-7	1410000	µg/kg	313	250	U	U	U	U
Lead	7439-92-1	1000000	µg/kg	20900	19000	13100	17200	19900	20100

Notes:
Bold = exceeds KDHE criteria
U = non-detect
µg/kg = microgram per kilogram
LRH = Low Range Hydrocarbons
MRH = Mid Range Hydrocarbons
HRH = High Range Hydrocarbons

Table 2: Laboratory Data Summary, Groundwater
Pre-Tank Removal Environmental Site Assessment
3237 Arnold Avenue, Salina, Kansas
Project #31100-02

			Sample ID	**DSB-5**
			Date, Time	1/26/22, 1:20 PM
			Lab Sample ID	60391478007
Analytical Parameters	**CAS Number**	**KDHE Non-Residential Groundwater Criteria (µg/L)**	**Units**	
LRH (C5-C8)		950	µg/L	890
MRH (C9-C18)		400	µg/L	89
HRH (C19-C35)		2500	µg/L	U
1,2-Dibromoethane (EDB)	106-93-4	0.05	µg/L	U
1,2-Dichloroethane	107-06-2	5	µg/L	U
Benzene	71-43-2	5	µg/L	1.3
Ethylbenzene	100-41-4	700	µg/L	1.1
Methyl-tert-butyl ether	1634-04-4	262	µg/L	U
Naphthalene	91-20-3	2.11	µg/L	U
Toluene	108-88-3	1000	µg/L	U
Xylene (Total)	1330-20-7	10000	µg/L	U
Lead	7439-92-1	15	µg/L	**836**

Notes:
Bold = exceeds KDHE criteria
U = non-detect
µg/L = microgram per liter
LRH = Low Range Hydrocarbons
MRH = Mid Range Hydrocarbons
HRH = High Range Hydrocarbons

Table 1: Summary of 2024 Soil Borings Advanced by UES
Pump House 305
31100-04

Boring ID	Total Depth (ft)	Sample Depth (ft)	PID (ppm)
DSB-10	12	10	522.9
DSB-11	12	8	162.7
DSB-12	12	10	332.7
DSB -13	12	9	513.4
DSB-14	12	12	470.0
DSB-15	12	12	339.0

Boring I.D.	Sample Depth (ft)	Chemical Concentration (mg/kg)											
		HRH	MRH	LRH	Benzene	Toluene	Ethylbenzene	Xylene (total)	MTBE	1,2 Dibromoethane (EDB)	1,2 DCE	Napthalene	Lead
DSB-10	10	36.7	1,250	1,300	ND	ND	ND	0.291	ND	ND	ND	1.98	15.6
DSB-11	8	33.1	53.2	15	ND	ND	0.00419	ND	ND	ND	ND	ND	15.9
DSB-12	10	20.8	1,110	563	0.0564	ND	0.622	ND	ND	ND	ND	2.00	17.8
DSB -13	9	ND	2,020	1,850	0.366	ND	0.454	ND	ND	ND	ND	3.99	17.2
DSB-14	12	89.6	514	909	ND	0.0384	0.00808	0.222	ND	ND	ND	0.426	20.3
DSB-15	12	41.2	90.6	136	ND	ND	0.00363	0.0175	ND	ND	ND	0.0507	44.3
KDHE Screening Level[1]		27,500	350	950	28.2	29800	145	1410	1050	0.859	10.9	64.7	1000

Notes

1 = HRH, MRH, LRH are Tier 2 Screening Levels for Total Petroleum Hydrocarbon (TPH) in Non-Residential Soil. Individual compounds are KDHE RSK values for Non-Residential Soil.

HRH = High Range Hydrocarbons (C19-C35)

MRH = Mid Range Hydrocarbons (C9-C18)

LRH =- L:ow Range Hydrocarbons (C5-C8)

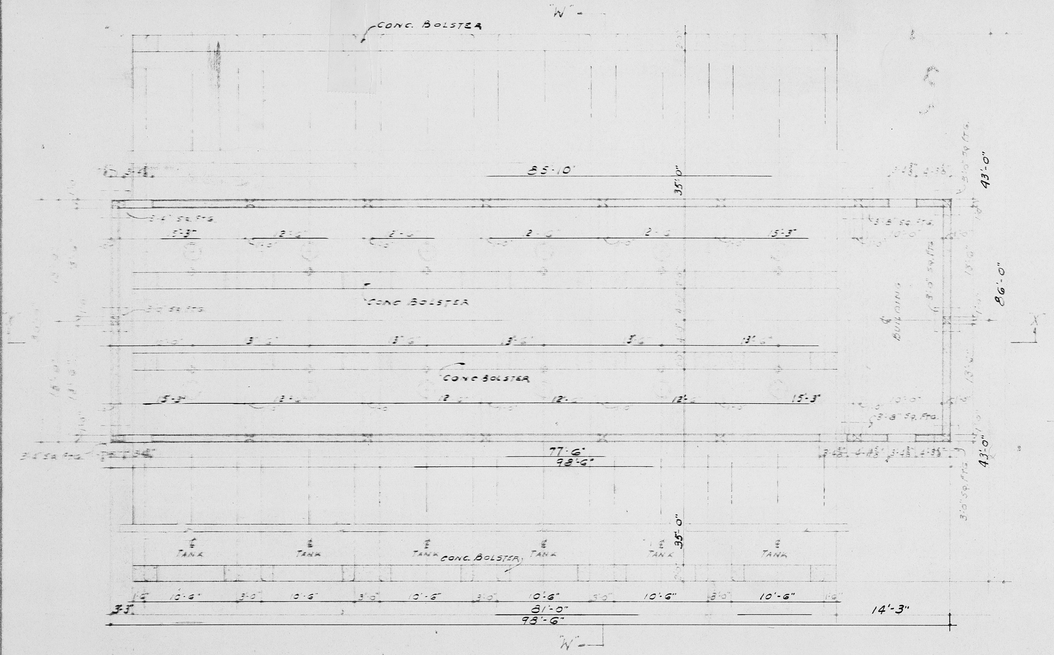
MTBE - Methyl-tert-butyl ether

1,2 DCE = 1,2-Dichloroethane

RE: Summary of 1994 Soil Borings Advanced by Plaines Environmental
Pump House 305
31100-01

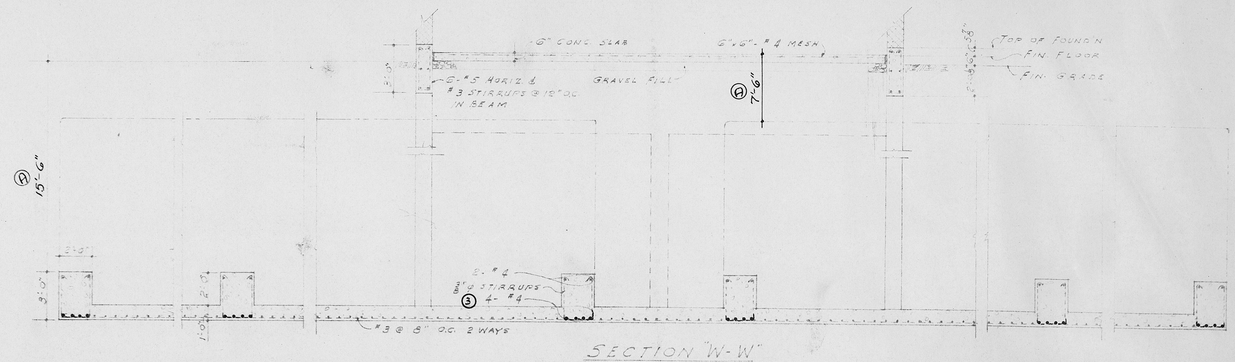
Boring ID	Total Depth (ft)	Sample Intervals (ft)	
		2 - 3	11 - 12
#1		x	x
#2		x	x
#3		x	x
#4		x	x
#5		x	x
#6		x	x

Boring I.D.	Sample Interval (ft)	Chemical Concentration (µg/kg)			
		Benzene	Ethylbenzene	Toluene	Total Xylenes
#1	2 - 3	40	< 30	< 40	< 40
	11 - 12	**>140,000**	39,900	3,920	2,300
#2	2 - 3	**111,000**	19,000	2,990	3,620
	11 - 12	**> 120,000**	15,100	1,030	515
#3	2 - 3	1,750	32	< 40	< 40
	11 - 12	**38,500**	7,210	828	518
#4	2 - 3	218	< 30	< 40	< 40
	11 - 12	**> 110,000**	37,800	3,450	940
#5	2 - 3	54	< 30	< 40	< 40
	11 - 12	**49,300**	8,110	1,050	560
#6	2 - 3	< 20	< 30	< 40	< 40
	11 - 12	**>180,000**	27,000	1,850	980

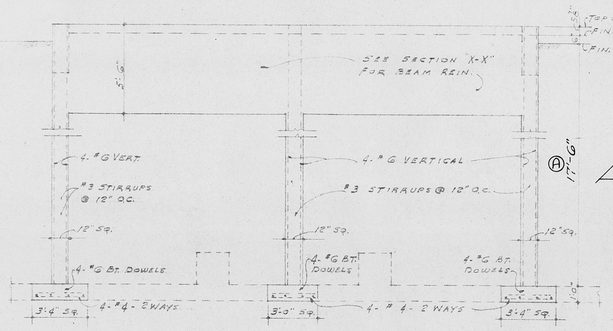


FOUNDATION PLAN
SCALE 1/8" = 1'-0"

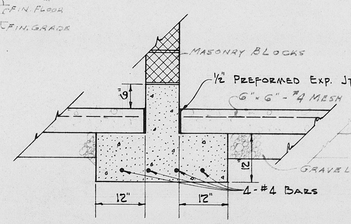
NORTH



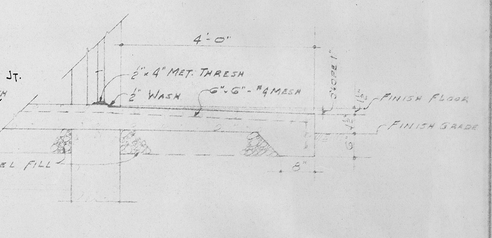
SECTION "W-W"
SCALE 1/4" = 1'-0"



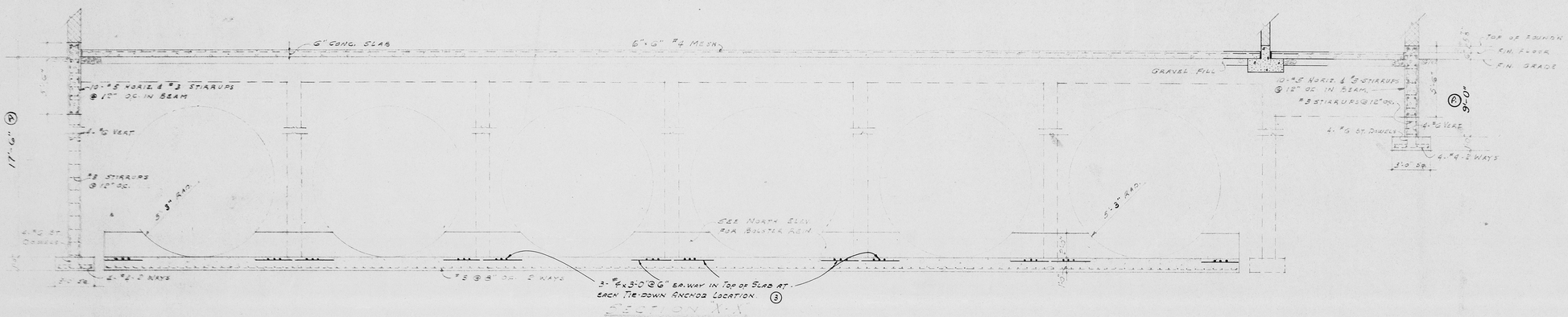
EAST ELEVATION
SCALE 1/4" = 1'-0"



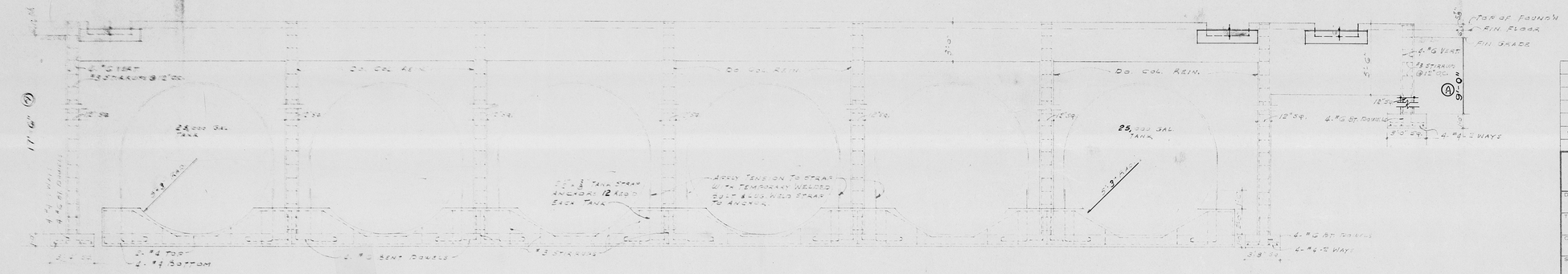
NON-BEARING PARTITIONS
SCALE 3/4" = 1'-0"



TYPICAL ENTRANCE SLAB
SCALE 3/4" = 1'-0"



SECTION X-X
SCALE 1/4" = 1'-0"



NORTH ELEVATION
SCALE 1/4" = 1'-0"
SOUTH ELEVATION SIMILAR EXCEPT REVERSED.

NOTE:
CONSTRUCTION SHALL BE EXECUTED ACCORDING TO GIVEN DIMENSIONS & NOT TO SCALE MEASUREMENTS.

RECORD DRAWING
Dec. 1955

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISED DRAWING TO SHOW "AS BUILT" CONDITIONS	DEC. 55	
(3)	Added 3-#6 @ 6" for Tie-down Anchors (Add. No. 3)	Mar. 52	
(3)	Lowered 2-#4, Section W-W (Add. No. 3)	Mar. 52	
(A)	Lowered Footings C.O. No. 2	5 Apr. 52	

REVISIONS

WILSON — SHAVER — MANN
ARCHITECTS - ENGINEERS SALINA, KAN.
WILSON & COMPANY

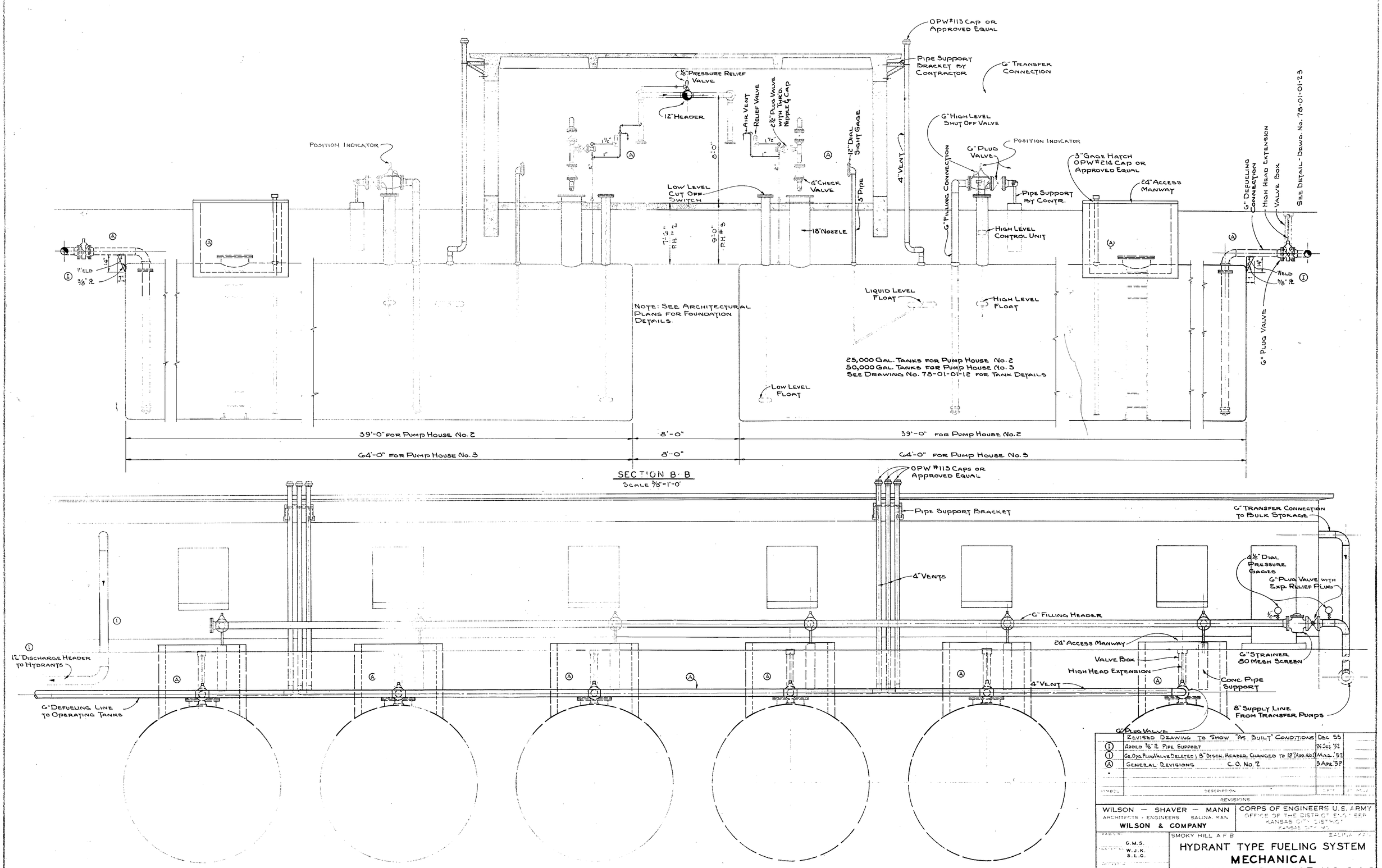
CORPS OF ENGINEERS U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.

DRAWN BY: W H C
TRACED BY: W H C
CHECKED BY: G L G
SUBM'D: Harry H. Connell
CHIEF DESIGN BRANCH

SMOKY HILL A F B — SALINA, KAN.

HYDRANT TYPE FUELING SYSTEM
ARCHITECTURAL
FUELING PUMP HOUSE NO. 2
FOUNDATION PLAN & DETAILS

APPROVED: Louis J. Feil, CHIEF ENGINEERING DIV.
DATE: OCTOBER 1951
APPROVED: L. J. Lincoln, CORPS OF ENGINEERS DISTRICT ENGINEER
SCALE: AS SHOWN
DRAWING NUMBER: 78-01-01-03
SHEET 5 OF 32



SECTION B-B
Scale ⅜"=1'-0"

TYPICAL SOUTH ELEVATION
Scale ⅜"=1'-0"

Symbol	Description	Date	Approved
	Revised Drawing to Show "As Built" Conditions	Dec 53	
I	Added ⅜" PL Pipe Support	24 Oct '52	
I	Gr. Opr. Plug Valve Deleted; 8" Disch. Header Changed to 12" (Add. No. 1)	Mar. '52	
A	General Revisions C.O. No. 2	5 Apr. '52	

REVISIONS

WILSON — SHAVER — MANN
ARCHITECTS - ENGINEERS SALINA, KAN.
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CORPS OF ENGINEERS U.S. ARMY
OFFICE OF THE DISTRICT ENGINEER
KANSAS CITY DISTRICT
KANSAS CITY, MO.

SMOKY HILL A F B SALINA, KAN.

G.M.S.
W.J.K.
S.L.G.
G.M.S.
Harry H. Connell

HYDRANT TYPE FUELING SYSTEM
MECHANICAL
FUELING PUMP HOUSE NO. 2 & 3
ELEVATION & SECTION

Louis G. Feil
OCTOBER 1951

AS SHOWN

L. J. Lenecher

78-01-01-20
20 32

RECORD DRAWING
Dec. 1953