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REPORT ON

ON-SITE GROUND WATER EXTRACTION SYSTEM AS-BUILT DOCUMENTATION AND CONSTRUCTION CERTIFICATION BELL AEROSPACE TEXTRON WHEATFIELD, NEW YORK

VOLUME I OF II

Submitted to:

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DISTRIBUTION:

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June 1995

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June 16, 1995

933-9068

Bell Aerospace Textron
P.O. Box One
Buffalo, New York 14240

Attention: Mr. John Devic

RE: REPORT ON AS-BUILT DOCUMENTATION AND CONSTRUCTION CERTIFICATION, ON-SITE GROUND WATER EXTRACTION SYSTEM BELL AEROSPACE TEXTRON, WHEATFIELD, NEW YORK

Gentlemen:

Golder Associates Inc. (Golder Associates) is pleased to submit this Report on As-Built Documentation and Construction Certification for the On-Site Ground Water Extraction System (On-Site System) at the Bell Aerospace Textron (BAT) facility located in the Town of Wheatfield, in Niagara County, New York. The attached document is submitted in compliance with the requirements of BAT's Title 6 New York Code of Rules and Regulations (6NYCRR) Part 373 Post Closure Permit (No. 9-2940-00001/00079-0) dated September 14, 1992.

This report documents that the construction of the On-Site System was performed in substantial compliance with the plans and specifications in the approved Corrective Measures Implementation Plan (CMI) for the On-Site System and subsequent design modifications and design clarifications issued by the designer for this project. This report incorporates the certification report for the electrical components of the project, prepared by Wendel Engineers P.C., included as Appendix C to this report.

Golder Associates appreciates the opportunity to have provided BAT with construction quality assurance services during the construction of the On-Site System. If you have any questions regarding this report, please call.

Very truly yours,

GOLDER ASSOCIATES INC.

Anthony L. Grasso, P.G.
Project Director/Associate

ALG:dml
Attachments
F/N: FINAL/CERTDFT.DOC

STATEMENT OF CERTIFICATION

Golder Associates Inc. (Golder Associates) certifies that the Construction Quality Assurance (CQA) program was conducted under the supervision of a Licensed New York State registered Professional Engineer (P.E.). Based on the CQA monitoring of the On-Site Ground Water Extraction System (On-Site System) performed by Golder Associates and Wendel Engineers, P.C. (Wendel), Golder Associates certifies that the On-Site System has been constructed in substantial compliance with the plans and specifications in the approved Corrective Measures Implementation Plan (CMI) for the On-Site System and approved design modifications and design clarifications. The limits and scope of the portion of the On-Site System that Golder Associates is certifying are identified in the attached report. The letters of certification from Wendel and the General Contractor who worked on this project accompany this report. Design changes made during the construction are documented on the as-built drawings accompanying this report. It is the opinion of Golder Associates and Wendel that the changes are minor and did not change the intent of the design. This certification for the work completed by Golder Associates is issued under the seal of Mr. Jeffrey B. Fassett, P.E., of Golder Associates Inc., with New York State License No. 070347.

Jeffrey B. Fassett, P.E.
Senior Engineer

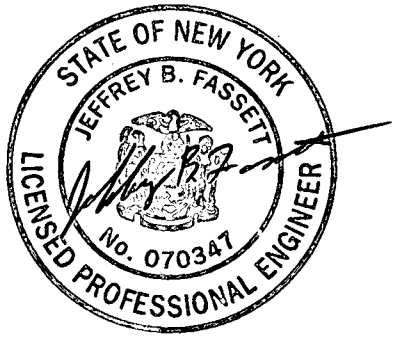


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1. INTRODUCTION

1.1 General

Bell Aerospace Textron (BAT) has been issued a Title 6 New York Code of Rules and Regulations (6NYCRR) Part 373 Post Closure Permit (No. 9-2940-00001/00079-0) dated September 14, 1992, for the BAT facility located in Wheatfield, New York (see Figure 1). Corrective remedial measures have been stipulated in the permit for two areas associated with past activities at the Wheatfield facility. A Corrective Measures Study (CMS) (Golder Associates Inc. (Golder Associates), June 1991) has been performed and approved by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) for these two areas, designated as the "on-site" area and the "off-site" area. Subsequently, a Corrective Measures Implementation Plan (CMI) (Golder Associates, March 1992) for the off-site area, which included a remedial design, was submitted to and approved by the NYSDEC and USEPA. The remedial measures were implemented for the off-site area in 1992. In March 1993, a CMI Plan for the on-site area was submitted to and accepted by the NYSDEC (Golder Associates, March 1993). The remedial measures were implemented for the on-site area in September 1993.

The remedial design for the on-site area consisted of a ground water extraction system and ground water treatment system. The On-Site ground extraction system was designed by Golder Associates (Golder Associates, March 1993) and the ground water treatment system was designed by Resource Technologies Group, Inc. (RTG) (RTG, August 1992). This report serves as the as-built documentation for the On-Site ground water extraction system. This documentation includes descriptions and as-built drawings of the various system components and results of the construction quality assurance (CQA) monitoring excluding the treatment facility components. RTG prepared and submitted the as-built documentation for the ground water treatment facility (RTG, November 1994).

1.2 General Site Geology/Hydrogeology

The site is underlain by approximately 12 feet to 16 feet of silty and clayey overburden. Beneath the overburden, the bedrock stratigraphy consists of four zones. The zones are based on lithology and permeability characteristics as follows:

- Zone 1 comprises approximately the upper 10 feet to 20 feet of dolostone bedrock. It is a thinly bedded to laminated dolostone of moderate to high permeability and constitutes the upper bedrock aquifer;
- Zone 2 is a massive dolostone layer that averages approximately 8 feet in thickness. It directly underlies Zone 1 and is considered a bedrock aquitard that restricts the vertical movement of ground water;
- Zone 3 is a porous, vuggy dolostone of moderate permeability that varies in thickness from 18 feet to 28 feet. It constitutes an aquifer beneath Zone 2; and
- Zone 4 is a massive, low permeability dolostone underlying Zone 3.

1.3 Project Organization

BAT is the owner and operator of the Wheatfield facility and is responsible for the implementation of the corrective measures at the on-site area. BAT contracted the following parties for this project:

Golder Associates was retained by BAT as the design engineer of record (Designer) for the On-Site ground water extraction system. Golder Associates and its subcontractor, Conserva-Tech Engineering Services (Conserva-Tech), prepared the design drawings and technical specifications used in permitting and constructing the On-Site ground water extraction system (excluding the treatment facility components and building) (Golder Associates, May 1993). RTG was the design engineer of record for the ground water treatment facility and treatment building.

Golder Associates was also retained by BAT to serve as BAT's on-site representative (Owner's Representative) during construction of the On-Site ground water extraction system, and was present throughout drilling, trenching, and system installation to provide CQA services. Golder Associates' CQA services excluded the treatment facility components and building foundation, but did include CQA of the treatment facility building shell. Wendel Engineers, P.C. (Wendel) was subcontracted by Golder Associates to provide CQA monitoring services and serve as the Owner's Representative for the electrical components of the system. RTG provided CQA services of the treatment facility.

Laidlaw Environmental Services, Inc. (Laidlaw) was retained by BAT as the General Contractor for the project. Subcontractors to Laidlaw included Sicoli and Massaro (S&M) as the general earth works contractor, Ferguson Electric Construction Co., Inc. (Ferguson) as the electrical contractor, TreaTek-CRA Company (TreaTek) and Innovative Controls as the process control equipment contractors, and Pennsylvania Drilling Co., Inc. (Penndrill) as the drilling and well installation contractor. LBM Construction Inc. (LBM) and Cayuga Plumbing and Heating (Cayuga), both subcontracted to S&M, were the treatment building erection contractors and the project plumbing contractors, respectively.

1.4 Project Execution

Construction of the On-Site ground water extraction system and pretreatment facility began September 20, 1993, and continued on a predominantly full-time basis until early March 1994; after that work progressed on a part-time basis until late 1994. The On-Site System was substantially completed by November 1994 allowing for the conditional start-up of the system to be initiated in November 1994 through April 1995. The activities that continued during or after start-up of the system included:

- Several modifications to the components of the treatment facility; and
- Repair of extraction well DW-9 vault/casing seal.

The On-Site ground water extraction system was accepted by BAT as complete on April 30, 1995.

CQA monitoring activities by Golder Associates were performed on a full-time basis during the drilling/trenching phases and on a part-time basis during the system completion phase and during the system start-up phase. Golder Associates' field reports of these activities are presented in Appendix A. CQA monitoring was provided by Wendel on a part-time basis throughout the installation of the system's electrical components.

1.5 Purpose and Scope of the Certification Report

The purpose of this report is to present as-built documentation and certification of the construction of the On-Site ground water extraction system to comply with the requirements of the site permit 6NYCRR Part 373, Permit No. 9-2940-00001/00079-0. This report includes:

- An overview of the project design;
- Documentation of the trench system construction activities and the materials used during the construction;
- Documentation of the extraction well system construction activities and the materials used during construction;
- Summaries of soils and air testing;
- Summaries of field hydraulic conductivity testing of the extraction wells;
- Design modifications, upgrades, and clarifications; and
- As-built drawings.

This report presents a brief discussion of the above items and activities that occurred during the construction period that are relevant to the construction of the designed system. A certification letter from the General Contractor who constructed the On-Site ground water extraction system is presented in Appendix B.

2. DESIGN OVERVIEW

2.1 General

The On-Site ground water extraction system consists of six ground water extraction wells placed on the BAT facility (Figure 2). The extraction wells are designed to extract ground water primarily from the uppermost bedrock (Zone 1) aquifer system. The extracted ground water is transferred via a pumping system and a double-containment underground pipeline network to an On-Site treatment facility and subsequently to a sanitary sewer inlet for eventual treatment at the Niagara County Sewer District Number 1 publicly owned treatment works (POTW).

2.2 System Components

Each extraction well was designed to be capable of extracting ground water via a submersible pump at a rate of approximately 5 gallons per minute (gpm) to 14 gpm. The well head is recessed, installed in a vault buried below the ground surface. A buried double-walled pipeline network transmits extracted ground water to the on-site treatment facility. The pipeline from the four northerly wells located near the contaminant source (designated DNAPL (dense non-aqueous phase liquid) wells or DW wells) enters the treatment plant separately from the pipeline from the remaining two wells (designated extraction wells or EW wells).

A 2-inch diameter pipe, constructed of polypropylene material serves as the carrier pipe; a 6-inch diameter pipe, consisting of high density polyethylene (HDPE) serves as the containment pipe. These materials are chemically compatible with the known contaminants presented in the ground water of Zone 1 in the on-site area based on the pipe manufacturer's review of the data.

The buried vaults consist of pre-cast concrete material with two spring-loaded roof scuttles for access into the vaults.

The water level in each extraction well is designed to be maintained between prescribed elevations by using a water level control pressure transducer unit to activate and deactivate the pump based on the water level in the well. The pumping rate is controlled by manually adjusting two butterfly valves at the well head to establish the desired flow rate. A high and low alarm setting has also been established for each well.

The leak detection system installed in the On-Site ground water extraction system consists of a water-sensitive cable installed in the containment pipe annuli between all the vaults and the treatment building. The cable and associated controls are able to detect multiple leaks and indicate their position in the line, as well as shut down the pumping in the event of a detection.

At each well, a flow meter registers the flow rate and totalized flow, both of which are displayed at the vault. In the treatment building, two flow meters register and display the influent flow rate for the DW and EW wells separately. The water level in the well is also displayed in each vault, as recorded by the level control system.

The On-Site ground water extraction and treatment system can be monitored from the treatment facility, the BAT plant, and remote terminals. Operational data may be transmitted, directly or via a telephone line and modem system, to a computer equipped with the necessary software. The following information can be monitored at the computer terminals:

- Water level elevation in each well;
- Flow rate at each well;
- Flow rate for the DW wells;
- Flow rate for the EW wells;
- Alarm status for leak detection, pump overload, high alarms, and low alarms; and
- Treatment process parameters.

3. SUMMARY OF CONSTRUCTION AND CONSTRUCTION QUALITY ASSURANCE (CQA) ACTIVITIES

3.1 General

The following sections discuss activities performed during construction of the On-Site System. As-built drawings (Sheets B-1 through B-6), prepared by Golder Associates, along with supporting appendices attached hereto, present the final construction details of the On-Site ground water extraction system. As-built documentation of the electrical components of the system, prepared by Wendel, is presented as Appendix C. Appendix D presents a listing of products used in the construction of the On-Site ground water extraction system and the corresponding manufacturer/supplier of the product.

3.2 Extraction Wells

Construction activities were initiated with the installation of the extraction wells on October 4, 1993. Six extraction wells (designated EW-7, EW-8, DW-9, DW-10, DW-11, and DW-12) were completed by November 2, 1993. Sheet B-2 presents the documented locations of the extraction wells and a profile of the extraction system. Detailed extraction well boring and drilling logs are included in Appendix E.

EW-7 was relocated approximately 100 feet east of its original location. This modification in the design was approved by the Designer and was performed due to the low ground water production at EW-7's original location, designated EW-7A (see Sheet B-2). EW-7A was decommissioned.

The six extraction wells were installed following the procedures presented herein. The overburden was drilled to the bedrock surface using 12½-inch inside diameter (ID) hollow stem augers. The borehole was then advanced from 2 feet to 3.5 feet into the Zone 1 dolostone using a 14-inch tricone bit or the hollow stem augers. Polypropylene overburden casing (10-inch nominal) was installed in the borehole and tremie grouted in place using a cement/bentonite mixture. Subsequent drilling was completed by advancing

through the inside annulus of the casing and into the Zone 1 bedrock using HQ or NQ size rock coring techniques with air. The rock core was logged and stored in core boxes by Golder Associates' personnel. Rock coring continued to a depth of approximately 0.4 feet to 1.5 feet into the Zone 2 dolostone as determined by Golder Associates' personnel. The rock coring drill rods were removed from the borehole and drilling continued by reaming the cored bedrock with a 9⅝-inch roller cone bit using air rotary techniques or a 10-inch downhole hammer. Following reaming, the borehole was developed by blowing air through the drill rods in a "pulsing" fashion until drill cuttings were removed and clear water was returned to the surface. Drilling fluids and cuttings generated during drilling and development activities were contained for disposition by BAT.

Due to cave-in of the bedrock into the open borehole at DW-9, the borehole was re-drilled and a 8-inch diameter, stainless steel casing and screen were installed to prevent potential future borehole cave-in. DW-9 was redeveloped upon well casing/screen installation.

After the extraction wells were developed, a rising head test was performed on each well to estimate the approximate hydraulic conductivity of the screened strata. Table 1 presents a summary of the rising head tests while rising head test data are presented in Appendix F.

After installation of the extraction wells, the overburden material was excavated from around the overburden casing and the concrete vaults were set in place over the casing with the casing protruding through the floor of the vault. The overburden casing stick-up inside the vault was subsequently fitted to the design stick-up of approximately 2 inches above the floor of the vault. As-built details for the extraction wells are presented on Sheet B-4 and vault details are presented on Sheet B-5.

3.3 Trench Excavation/Backfill

Sheet B-2 presents the as-built layout of the trench in which the pipeline and power and communication conduits were installed. Excavation work commenced November 12, 1993, and was completed by approximately May 9, 1994. Work included excavating around the extraction well overburden casings for placement of the concrete vaults and trench excavation.

The excavation and placement of the vault 7 (for EW-7) initiated this portion of the field activities. Trenching proceeded from vault 7, east to the vault 8 location. Trenching then proceeded from the vault 12 location south to the treatment building, then from the building to the vault 8 location. The next section of trench excavated was from the vault 12 location north towards the pipeline "Tee", then west to the vault 11 location. Trenching excavation was completed with the excavation from the vault 9 location south and east through the vault 10 location to the "Tee".

Excavation of the piping trench and vault pits was performed with a Caterpillar 215 track-mounted excavator with a 2-foot bucket or with a smaller Case 680L 4x4 backhoe with a 2-foot bucket. The smaller machine was used to excavate the trench section from vault 7 through vault 8 to the building and from vault 12 to the building.

Trench wall stability was anticipated to be a problem due to the site soil conditions. For this reason, the trench was benched to maintain stability except for the paved portion of the trench from the building through vault 8 to vault 7. This portion of the trench was cut vertically to minimize the amount of pavement repairing needed. Trench cross-sectional dimensions were measured by Golder Associates every 50 feet and are documented in Table 2. Trench bottom slopes were field measured by S&M with a laser aligner to verify that the final slope met the design requirements.

The trenches were generally excavated from vault to vault prior to backfilling, with the excavated material placed to the side of the open trench. If a portion of the trench remained open overnight, it was encircled with caution cones for safety reasons.

Trench backfill consisted of New York State Department of Transportation (NYSDOT) #1A stone (#1A stone) and 2-inch run-of-crusher (ROC) stone. The bottom of the trench was filled with approximately 6 inches of compacted #1A stone. After placement of the piping on this layer, 6 inches of compacted #1A stone was placed above the pipe. At this point, the communication and power conduits were placed on the stone and covered with an additional 12 inches of compacted #1A stone. The #1A stone was covered with a geotextile prior to backfilling the top of the trench with compacted, excavated native material (see Sheet B-5, Cross Sections C-C' and D-D').

In one instance, the backfill installation sequence deviated from the above description. Under the driveway at the BAT plant Gate 6, 2-inch ROC stone was substituted for the native backfill material to better support the heavy vehicular traffic this area receives.

Laidlaw was informed by Golder Associates on April 12, 1994, that the conduit was unacceptable due to water leaking into the conduit and must be replaced. The replacement procedure, approved by the Designer, involved re-excavating the native backfill materials to within an inch or two of the geotextile and placing approximately 6 inches of compacted #1A stone in the bottom of the excavation. New conduit was placed on this layer and an additional 6 inches of compacted #1A stone was placed above the conduit. The conduit was pressure tested by Cayuga to guard against further leakage, though this testing was not required by the specifications. The remaining portion of the trench was backfilled with 2-inch ROC stone and then capped with the material originally present along the trench alignment prior to excavating (i.e. asphalt, concrete, or stone).

The concrete vaults were placed on a minimum of 6 inches of compacted #1A stone. The area between the vault excavation and vault sidewalls was backfilled with compacted excavated material after placing bentonite powder around the well casing, containment pipe and conduit vault entry points as an aid in sealing them.

Golder Associates obtained representative samples of the #1A stone at a frequency of one per every five truckloads and performed particle size analyses, in accordance with the design specifications. A total of 10 tests were performed representing 54 truckloads and one preconstruction sample of the #1A stone. Test results are presented in Appendix G. Of the 10 tests, two of the tests met the design specification for a #1A stone, the specification of which was provided by the NYSDOT. The NYSDOT #1A stone specification was chosen by the Designer since it was anticipated to be readily available. However, the #1A stone received at the site deviated slightly from the NYSDOT specification, as the stone was generally slightly finer than specified. The Designer reviewed the test results during construction and considered the #1A stone to be in substantial compliance with the intent of the design. As such, the #1A stone was used as backfill material.

Prior to backfilling, relative density testing of the #1A stone was conducted (see Appendix H). During backfilling, the density of compacted #1A stone was determined using a nuclear/density gauge. A Troxler Model 4311B was used throughout the backfilling activities. The #1A stone was compacted with a vibrating compactor or a hand rake and tested at a minimum frequency of one test per every 50 feet for the first and fourth lifts. The second and third lifts were not tested as the close proximity of the hollow plastic containment pipe and conduit to the stone surface would skew test results and testing risked damage to the pipe. The compaction of lifts two and three was visually observed by Golder Associates. Each lift was approximately 6 inches in thickness. The native material was stockpiled on site for disposition by BAT.

The 2-inch ROC stone was not tested. The backfill material around the vaults was compacted with the excavator bucket but was not compaction tested due to insufficient clearance for testing. However, Golder Associates' personnel approved the compaction effort completed by the contractor at the vaults. Backfill compaction test results and design requirements are summarized in Table 3. Nuclear density gauge field test results are found in Appendix I.

3.4 Piping/Pumping System

The containment and carrier pipes were prefabricated in 40 to 80-foot lengths by Cayuga. The inner carrier pipe was simultaneously butt fused with the outer containment pipe as per the pipe manufacturer's specifications for assembly. The pre-assembled sections were placed on 6 inches of compacted #1A stone in the open excavations then welded together in the trench and backfilled. Where the carrier and containment pipes cross below utilities, the piping has been protected with Schedule 80 steel pipe (see Sheet B-2).

The top of pipe elevations and locations were surveyed every 20 feet, at every weld and at all 90-degree elbows or "Tees" by Laidlaw's surveying subcontractor, Klettke Land Surveyors, P.C. The survey data was reviewed by Golder Associates and in all cases the average pipe slope (vault to vault) met the minimum specified design slope of 1 inch (0.08 feet) per 20 feet. The pipe manufacturer's minimum slope for an individual 20-foot section was 0.05 feet per 20 feet, and in all cases this specification was met. A summary of the survey data of the top of pipe elevations and other survey data as provided by Laidlaw is presented in Appendix J.

Much of the piping within the vaults was prefabricated on-site by Cayuga and joined, in large sections, within the vault. A submersible pump connected to a 1¼-inch diameter stainless steel riser pipe was installed at each extraction well to a depth specified by the Designer (see Sheet B-4). In addition, a 2-inch diameter stainless steel stilling well was installed at each extraction well, with the exception of DW-9, in which a 1¼-inch stilling

well was installed due to space constraints at DW-9 (only well with 8-inch casing, see Section 3.2). The vault piping configuration details are shown on Sheets B-4 and B-5.

The containment and carrier pipes were separately air tested as per manufacturer's recommendations and as approved by the Designer. The pressure test procedure and results are found in Appendix K. No leaks were detected in the 6-inch containment pipe during testing, with the exception of one leak which was found in the 2-inch carrier pipe between vaults 7 and 8. It was repaired by subdividing the piping run into sections and individually air-testing them until the leaking 40-foot section was removed and replaced with new pipe. The newly installed section passed subsequent pressure testing.

3.5 Electrical

As previously mentioned, part-time CQA monitoring services for the electrical components of the On-Site System were provided by Wendel. Wendel's as-built certification report for the electrical portion of the On-Site System is included as Appendix C.

Some electrical CQA monitoring services were provided by Golder Associates, with prior oversight review and briefing by Wendel, when necessary. The activities monitored by Golder Associates include:

- Conduit installation between all vaults;
- Pulling of power/communication cable between all vaults;
- Heat trace wrapping in vaults 7 through 12;
- Installation of junction, breaker, and control boxes in vaults; and
- Replacement of defective conduit.

3.6 Building Shell Structure

Golder Associates performed CQA monitoring of construction of the treatment building shell (i.e. the structural members and siding) but did not monitor construction of the building foundation or interior components. These items, as previously mentioned, were monitored by RTG. Golder Associates did not note any deficiencies from the design drawings. These design drawings of the treatment building shell, as prepared by Butler Manufacturing Company, are presented on Sheets D93-048747-00 through D93-048747-07 (18 sheets total).

3.7 Health and Safety

Golder Associates and its subcontractor, Wendel, followed the procedures outlined in the Health and Safety Plan (Golder Associates, December 1991), approved by the NYSDEC for this project. Health and safety air monitoring was provided by Golder Associates during construction activities when on-site. Air monitoring performed during excavation and drilling operations indicated that the action levels for total volatile organics, percent oxygen, hydrogen sulfide, the lower explosive limit, and particulates specified in the Health and Safety Plan were not exceeded, with one exception:

The action level for organic vapors inside the breathing zone (5 ppm) was exceeded on October 12, 1993, at 9:30 with a reading of 17 ppm while reaming well DW-11. As per the Health and Safety Plan, work could continue at organic vapor concentrations of 5 ppm to 25 ppm in the breathing zone if level C protection was worn. A level C upgrade was performed. At 9:45 (at the same location and date) the action level for organic vapors downwind of the exclusion zone (5 ppm) was exceeded with a reading of 8 ppm. Drilling was shut down and the organic vapor concentrations in the breathing zone and downwind of the exclusion zone fell quickly to zero. The drilling fluid used at DW-11 was changed from air to water for the remainder of the reaming (only a few feet). This temporary alteration of drilling procedures allowed completion of the well without exceeding airborne VOC action levels. Air monitoring field forms are presented in Appendix L.

4. DESIGN MODIFICATIONS AND CLARIFICATIONS

During construction of the On-Site System, it occasionally became necessary to clarify or modify the design and/or specification. The Designer provided a design modification and/or clarification in writing as outlined on the forms presented in Appendix M. A summary of the design modifications and clarifications made during the project are presented in Table 4. All design modification and clarifications were approved by the Designer.

5. SUMMARY

Golder Associates was contracted by BAT to perform the CQA monitoring of the On-Site System installed at the BAT Wheatfield, New York, plant. A representative of Golder Associates, or a subcontracted firm, was present on site on a full-time or part-time basis, as required, for the project construction.

This document, including all appendices and drawings attached hereto, serves as the As-Built documentation for the On-Site System which was installed as required by BAT's permit. This document reflects the construction methods and the resulting constructed systems, including the modifications from the original design.

GOLDER ASSOCIATES INC.

David C. Wehn
Staff Hydrogeologist

Jeffrey B. Fassett, P.E.
Senior Engineer

Anthony L. Grasso, P.G.
Project Director/Associate

DCW/JBF/ALG:dml

F/N: FINAL/CERTDFT.DOC

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Golder Associates Inc., May 1993, "On-Site Remedial System Bid Package: On-Site Ground Water Extraction System Design and Specifications, Bell Aerospace Textron, Wheatfield Plant, Wheatfield, New York".

Resource Technologies Group, Inc., August 1992, "Detailed Engineering for Onsite Wastewater Treatment Facility", Bell Aerospace Textron, Niagara Falls, NY.

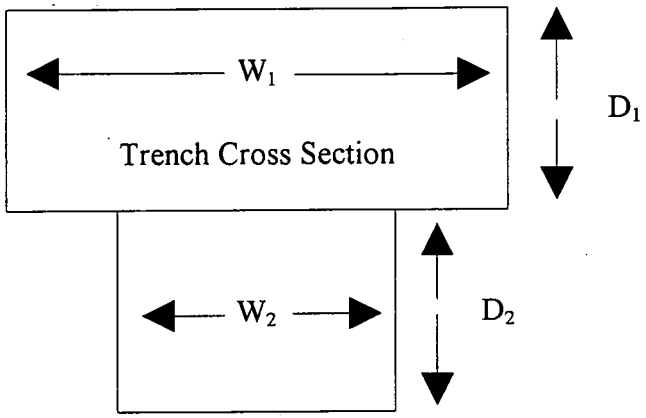
Resource Technologies Group, Inc., November 1994, Onsite Groundwater Treatment Plant Operations and Maintenance Manuals", Bell Aerospace Textron, Niagara Falls, NY., Volumes I through IV and Drawing Package.

TABLE 1
EXTRACTION WELL RISING HEAD TEST SUMMARY
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

WELL I.D.	DATE TESTED	HYDRAULIC CONDUCTIVITY cm/s
EW-7	11/03/93	3.9×10^{-3}
EW-8	10/25/93	1.7×10^{-3}
DW-9	11/03/93	1.2×10^{-3}
DW-10	11/03/93	2.3×10^{-3}
DW-11	10/12/93	1.6×10^{-3}
DW-12	10/25/93	3.3×10^{-2}

NOTE:
cm/s = centimeters per second

TABLE 2
TRENCH PROFILE
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK



ORIGINAL FIELD CQA STATION NO.	(1) SURVEY MAP STATION NOS.	D_1 (FT)	D_2 (FT)	W_1 (FT)	W_2 (FT)
2	2	6.9	-	2.7	-
3	5	7.3	-	2.8	-
4	13	7.0	-	2.9	-
5	16/17*	6.6	-	2.5	-
6	21	6.5	-	2.7	-
7	24/26*	6.6	-	2.6	-
8	29	7.0	-	2.8	-
9	33/35*	7.0	-	2.5	-
10	39	7.3	-	2.8	-
11	43/44*	7.5	-	2.9	-
12	48	7.3	-	2.6	-
13	52	7.2	-	2.6	-
14	56/57*	7.3	-	2.6	-
15	60	7.5	-	2.6	-
16	66	7.4	-	2.9	-
17	69	7.4	-	2.9	-
18	72/73*	7.3	-	2.7	-
19	76	7.2	-	2.7	-
20	80	7.2	-	2.8	-
21	94	1.0	4.6	8.0	4.0
22	100	2.4	4.0	8.8	2.4

NOTES:

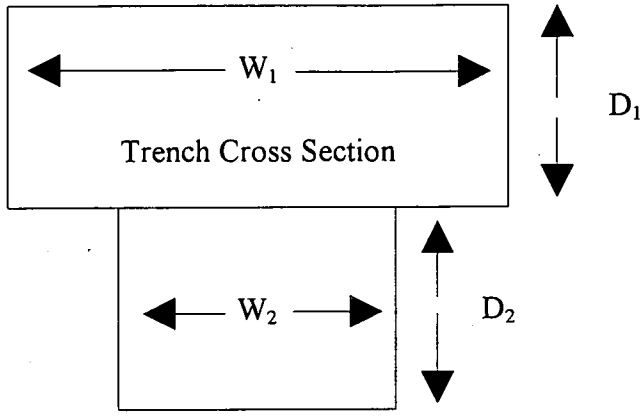
(1) Refer to survey map in Appendix J for station locations.

FT. = feet

* Indicates station is midway between survey station locations.

- = Not applicable, trench is not benched.

TABLE 2
TRENCH PROFILE
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK



ORIGINAL FIELD CQA STATION NO.	(1) SURVEY MAP STATION NOS.	D_1 (FT)	D_2 (FT)	W_1 (FT)	W_2 (FT)
23	103	3.1	4.1	9.0	2.4
24	109	3.5	4.0	7.5	2.6
25	113/114*	4.1	3.5	9.1	2.4
26	117	3.7	4.1	9.0	2.4
27	121	3.5	4.2	9.7	2.5
28	126	3.0	4.2	9.3	2.3
29	129/130*	2.8	4.1	9.5	2.6
30	154	7.0	-	2.6	-
31	158/160*	3.0	4.2	7.4	2.7
32	164	7.2	-	12.0	-
33	169/170*	7.1	-	11.5	-
34	174	4.5	3.0	10.5	4.0
35	180	2.1	4.7	7.9	2.8
36	184/186*	3.2	4.2	2.6	2.6
37	191	3.5	4.4	8.0	2.6
38	196/198*	4.0	4.5	8.5	2.5
39	201/204*	3.5	4.2	9.6	2.5
40	207	4.0	4.3	6.0	2.6
41	211	3.0	5.2	8.6	2.7
42	135	1.8	4.4	9.8	2.4
43	138/140*	2.5	4.0	8.9	2.5
44	143	3.7	3.9	7.8	2.9
45	146/147*	3.7	3.9	7.6	2.4

NOTES:

(1) Refer to survey map in Appendix J for station locations.

FT. = feet

* Indicates station is midway between survey station locations.

- = Not applicable, trench is not benched.

TABLE 3
IN-PLACE FIELD MOISTURE/DENSITY TEST SUMMARY
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

DATE	TEST NO.	BACKFILL TYPE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	PERCENT COMPACTION (1)	PASS/ FAIL	LIFT NO.	STATION (2)
12/08/93	1	#1A Stone	97.3	6.2	91	P	1	2
12/08/93	2	#1A Stone	90.6	5.7	85	P	1	5
12/08/93	3	#1A Stone	90.8	5.9	85	P	1	13
12/08/93	4	#1A Stone	93.2	5.0	87	P	1	16/17*
12/08/93	5	#1A Stone	95.1	5.9	89	P	1	21
12/09/93	6	#1A Stone	90.5	4.6	85	P	1	24/26*
12/09/93	7	#1A Stone	90.0	6.8	84	P	1	29
12/09/93	8	#1A Stone	91.2	5.3	85	P	1	33/35*
12/09/93	9	#1A Stone	89.3	9.9	84	P	1	39
12/09/93	10	#1A Stone	84.4	15.1	79	P	1	43/44*
12/17/93	11	#1A Stone	93.4	2.5	87	P	4	2
12/17/93	12	#1A Stone	96.0	3.0	90	P	4	5
12/17/93	13	#1A Stone	92.6	2.5	87	P	4	13
12/17/93	14	#1A Stone	93.8	2.6	88	P	4	16/17*
12/17/93	15	#1A Stone	92.2	3.1	86	P	4	21
12/17/93	16	#1A Stone	92.9	5.9	87	P	4	66
12/17/93	17	#1A Stone	91.6	6.5	86	P	4	69
12/17/93	18	#1A Stone	93.4	4.7	87	P	4	72/73*
12/17/93	19	#1A Stone	90.8	3.9	85	P	4	76
12/17/93	20	#1A Stone	92.4	5.7	87	P	4	80
12/30/93	21	#1A Stone	91.8	4.4	86	P	1	94
12/30/93	22	#1A Stone	85.7	6.4	80	P	1	100
12/30/93	23	#1A Stone	85.2	6.1	80	P	1	103
01/06/94	24	#1A Stone	92.1	5.7	86	P	4	100
01/06/94	25	#1A Stone	87.1	5.5	82	P	4	103
01/11/94	26	#1A Stone	87.6	6.8	82	P	1	80
01/11/94	27	#1A Stone	81.8	6.1	77	P	1	76
01/11/94	28	#1A Stone	89.1	5.4	83	P	1	73/72*
01/11/94	29	#1A Stone	82.5	7.1	77	P	1	69
01/11/94	30	#1A Stone	83.7	9.9	78	P	1	66
01/11/94	31	#1A Stone	79.1	15.7	74	P	1	60

(1) Compaction requirement for #1A Stone = 70% Maximum Laboratory Density
(2) Station designation is equivalent to survey shot locations.
See Appendix J for survey map.
* Indicates station is midway between survey locations.
P = Pass
pcf = pounds per cubic foot
% = percent

TABLE 3
IN-PLACE FIELD MOISTURE/DENSITY TEST SUMMARY
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

DATE	TEST NO.	BACKFILL TYPE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	PERCENT COMPACTION (1)	PASS/ FAIL	LIFT NO.	STATION (2)
01/11/94	32	#1A Stone	85.5	7.7	80	P	1	56/57*
01/11/94	33	#1A Stone	85.3	7.0	80	P	1	52
01/11/94	34	#1A Stone	77.8	14.7	73	P	1	48
01/17/94	35	#1A Stone	86.6	5.0	81	P	4	48
01/17/94	36	#1A Stone	79.7	6.0	75	P	4	52
01/17/94	37	#1A Stone	79.1	6.4	74	P	4	56/57*
01/17/94	38	#1A Stone	81.3	6.0	76	P	4	60
01/17/94	39	#1A Stone	76.0	11.0	71	P	4	66
01/17/94	40	#1A Stone	83.9	9.0	79	P	4	69
01/17/94	41	#1A Stone	79.2	7.3	74	P	4	72/73*
01/17/94	42	#1A Stone	77.4	9.7	72	P	4	76
01/18/94	43	#1A Stone	80.7	12.8	76	P	1	109
01/18/94	44	#1A Stone	79.5	12.0	74	P	1	113/114
01/18/94	45	#1A Stone	79.6	15.6	75	P	1	117
01/18/94	46	#1A Stone	86.2	6.4	81	P	1	12
01/18/94	47	#1A Stone	80.1	5.0	75	P	1	126
01/18/94	48	#1A Stone	79.0	11.2	74	P	1	129/130
01/18/94	49	#1A Stone	83.4	7.3	78	P	4	94
01/20/94	50	#1A Stone	86.5	5.9	81	P	1	135
01/20/94	51	#1A Stone	81.7	6.2	76	P	1	138/140*
01/20/94	52	#1A Stone	85.6	6.6	80	P	1	143
01/20/94	53	#1A Stone	84.6	7.2	79	P	1	146/147*
01/27/94	54	#1A Stone	79.7	10.1	75	P	4	146/147*
01/27/94	55	#1A Stone	93.9	6.5	88	P	4	143
01/27/94	56	#1A Stone	91.9	4.1	86	P	4	138/140*
01/27/94	57	#1A Stone	79.2	11.0	74	P	4	135
02/09/94	58	#1A Stone	75.2	10.7	70	P	1	211
02/09/94	59	#1A Stone	81.5	12.2	76	P	1	207
02/09/94	60	#1A Stone	76.8	14.9	72	P	1	201/204*
02/09/94	61	#1A Stone	76.1	14.2	71	P	1	196/198*
02/09/94	62	#1A Stone	76.6	11.2	72	P	1	191

(1) Compaction requirement for #1A Stone = 70% Maximum Laboratory Density
(2) Station designation is equivalent to survey shot locations.
See Appendix J for survey map.
* Indicates station is midway between survey locations.
P = Pass
pcf = pounds per cubic foot
% = percent

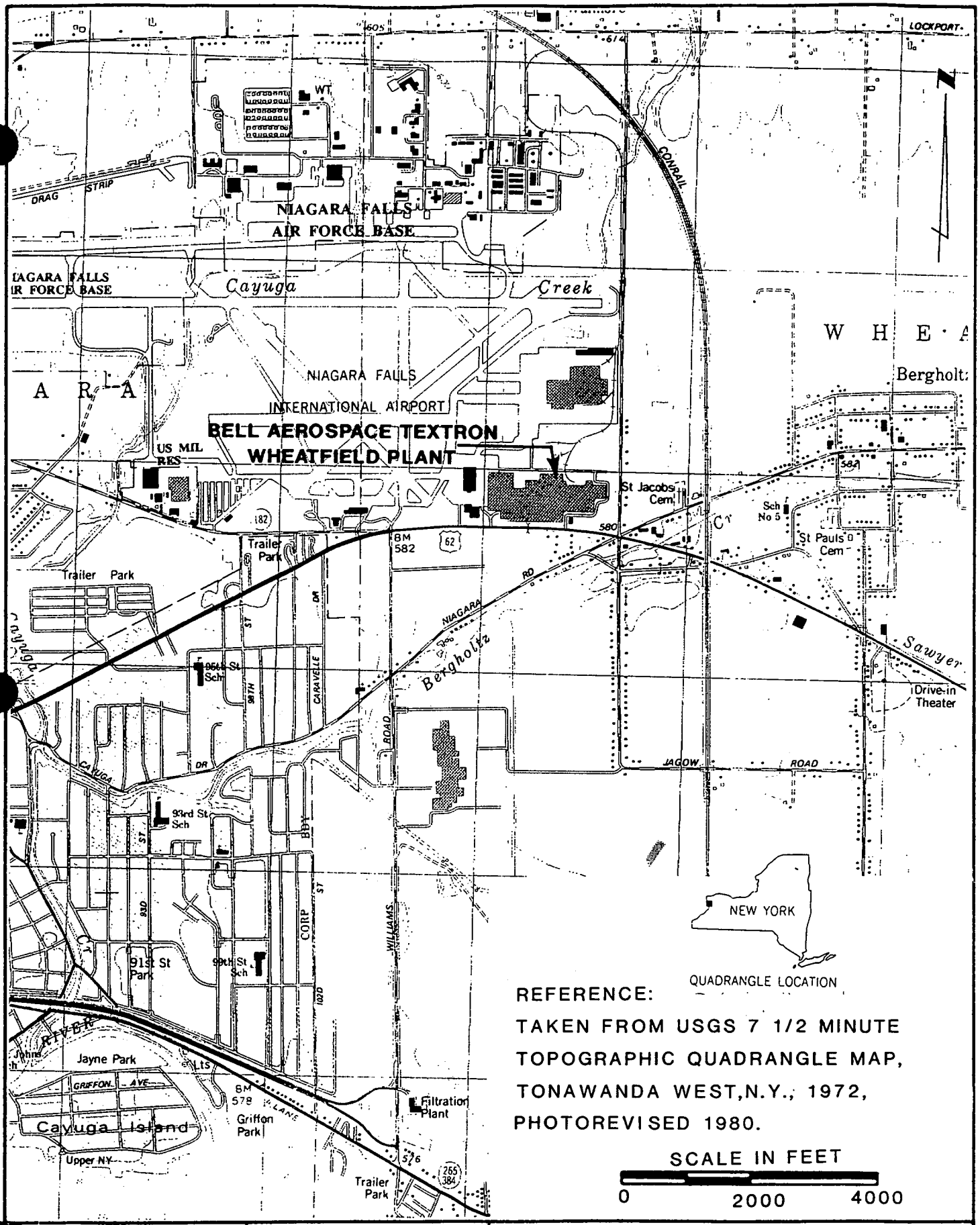
TABLE 3
IN-PLACE FIELD MOISTURE/DENSITY TEST SUMMARY
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

DATE	TEST NO.	BACKFILL TYPE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	PERCENT COMPACTION (1)	PASS/ FAIL	LIFT NO.	STATION (2)
02/09/94	63	#1A Stone	79.3	15.6	74	P	1	184/186*
02/09/94	64	#1A Stone	76.5	11.9	72	P	1	180
02/09/94	65	#1A Stone	84.9	11.4	80	P	1	174
02/11/94	66	#1A Stone	78.2	12.2	73	P	1	154
02/11/94	67	#1A Stone	81.4	7.4	76	P	1	158/160*
02/11/94	68	#1A Stone	79.6	10.7	75	P	1	164
02/11/94	69	#1A Stone	82.9	9.3	78	P	1	169/170
02/17/94	70	#1A Stone	81.7	7.2	76	P	4	109
02/17/94	71	#1A Stone	82.4	7.2	77	P	4	121
02/17/94	72	#1A Stone	75.8	10.5	71	P	4	126
02/18/94	73	#1A Stone	92.5	3.7	87	P	4	211
02/18/94	74	#1A Stone	92.5	4.9	87	P	4	207
02/18/94	75	#1A Stone	90.7	3.3	85	P	4	201/204*
02/18/94	76	#1A Stone	98.9	1.7	93	P	4	196/198*
02/18/94	77	#1A Stone	95.9	4.9	90	P	4	191
02/18/94	78	#1A Stone	97.1	3.1	91	P	4	184/186*
02/18/94	79	#1A Stone	89.4	6.4	84	P	4	180
02/18/94	80	#1A Stone	85.9	7.3	80	P	4	174
02/18/94	81	#1A Stone	92.6	3.9	87	P	4	169/170*
02/22/94	82	#1A Stone	79.0	7.6	74	P	4	154
02/22/94	83	#1A Stone	88.8	4.4	83	P	4	129/130*
02/22/94	84	#1A Stone	89.3	6.0	84	P	4	128
02/22/94	85	#1A Stone	94.5	3.3	88	P	4	158/160*
02/22/94	86	#1A Stone	94.3	5.1	88	P	4	164
02/24/94	87	#1A Stone	93.3	3.4	87	P	4	113/114
02/24/94	88	#1A Stone	87.8	9.8	82	P	4	117

(1) Compaction requirement for #1A Stone = 70% Maximum Laboratory Density
(2) Station designation is equivalent to survey shot locations.
See Appendix J for survey map.
* Indicates station is midway between survey locations.
P = Pass
pcf = pounds per cubic foot
% = percent

TABLE 4
SUMMARY OF DESIGN MODIFICATIONS AND CLARIFICATIONS
ON-SITE GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

DESIGNER APPROVAL DATE	CLASSIFICATION	SUBJECT	FORM NO.
12/15/93	Clarification	Grating support installation	1
12/10/93	Clarification	Reduction of transfer pipe slope	2
02/22/94	Clarification	Transducer depths	3
03/04/94	Clarification	Water level/alarm elevations	4
12/93 - 5/94	Clarification	#1A stone specification	5
12/93 - 2/94	Clarification	#1A stone compaction specification	6
10/27/93	Modification	Well EW-7 moved	1
11/15/93	Modification	Pea gravel substituted for bentonite near pump out/maintenance ports	2
10/26/93	Modification	SDR of containment pipe changed from 17.6 to 32.5	3
10/11/93	Modification	Leak detection cable in vaults changed to jumper	4
03/09/94	Modification	Conduit/pull box detail changes	5
03/08/94	Modification	1/3 HP, 208 volt pump motors replaced by 1/2 HP, 230 volt motors	6
03/18/94	Modification	Installation of 8-inch stainelss steel screen in DW-9	7
04/21/94	Modification	Replacement of defective conduit / change of trench backfill to stone	8R



REFERENCE:
TAKEN FROM USGS 7 1/2 MINUTE TOPOGRAPHIC QUADRANGLE MAP, TONAWANDA WEST,N.Y., 1972, PHOTOREVISED 1980.

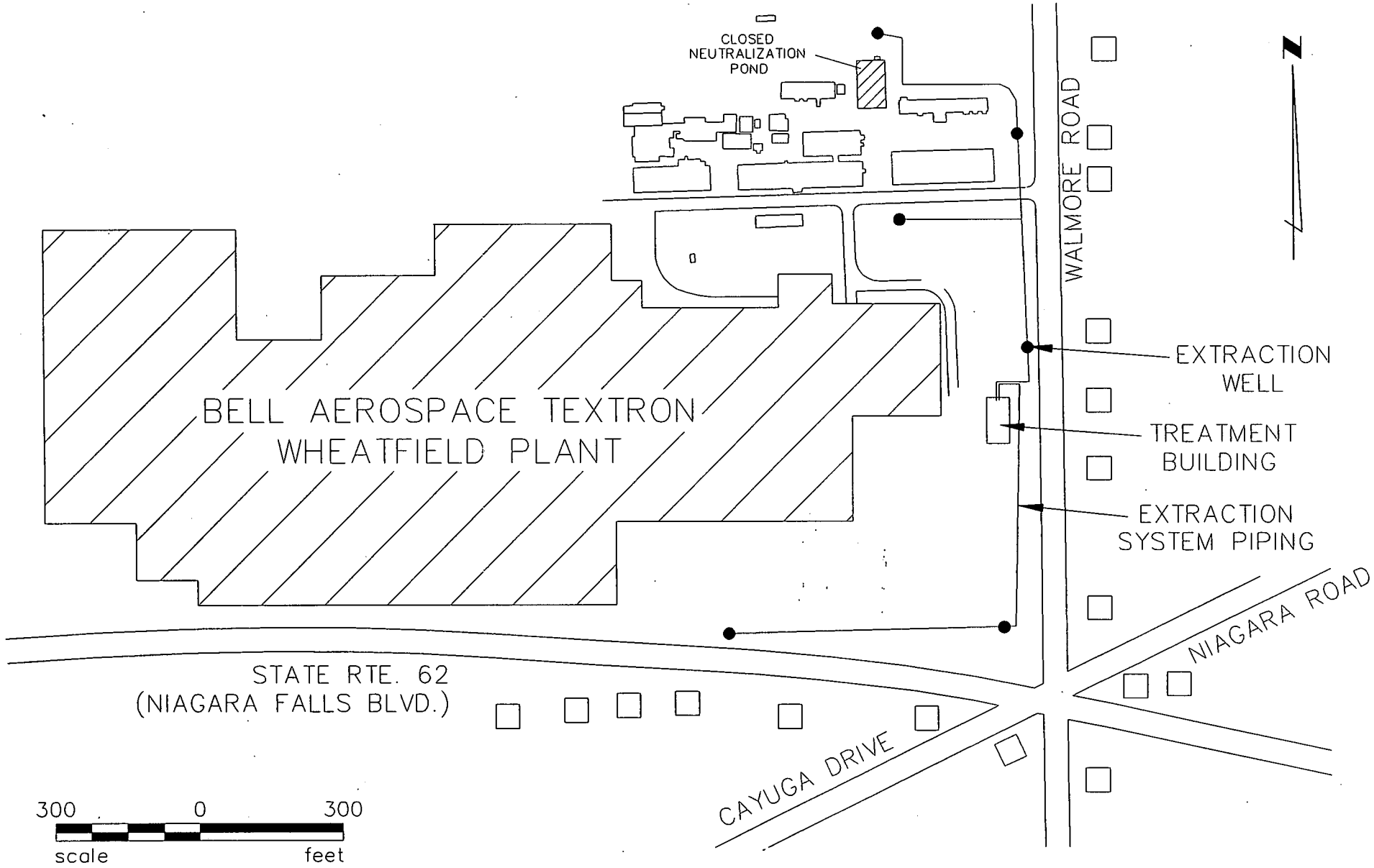
SCALE IN FEET

0 2000 4000

08 No.: 933-9068	SCALE: AS SHOWN	SITE LOCATION MAP	
DRAWN: BEC	DATE: 6/4/93		
CHECKED: ALG	DWG. No.: 8		
Golder Associates		BELL AEROSPACE TEXTRON	FIGURE 1

158686

BUF/FILE # 9141014



CLIENT/PROJECT						TITLE		
BELL AEROSPACE TEXTRON			Golder Associates Buffalo, New York			ON-SITE EXTRACTION SYSTEM LOCATION		
DRAWN BEC	CHECKED DCW	REVIEWED ALG	DATE 5/25/95	SCALE AS SHOWN	FILE NO. 933-9068	JOB NO. 933-9068	DWG NO. BELL63	FIGURE 2

Bell Aerospace TEXTRON

WHEATFIELD, NEW YORK

RECORD DRAWINGS
ONSITE GROUNDWATER EXTRACTION SYSTEM
FOR
BELL AEROSPACE TEXTRON
WHEATFIELD PLANT
WHEATFIELD, NEW YORK

DRAWING LIST

Drawing No.	Drawing Title
B-1	COVER SHEET
B-2	GROUNDWATER EXTRACTION SYSTEM PLAN
B-3	EXTRACTION SYSTEM PROFILE
B-4	EXTRACTION SYSTEM DETAILS (SHEET 1 OF 2)
B-5	EXTRACTION SYSTEM DETAILS (SHEET 2 OF 2)
B-6	PIPING DETAILS

Prepared by:

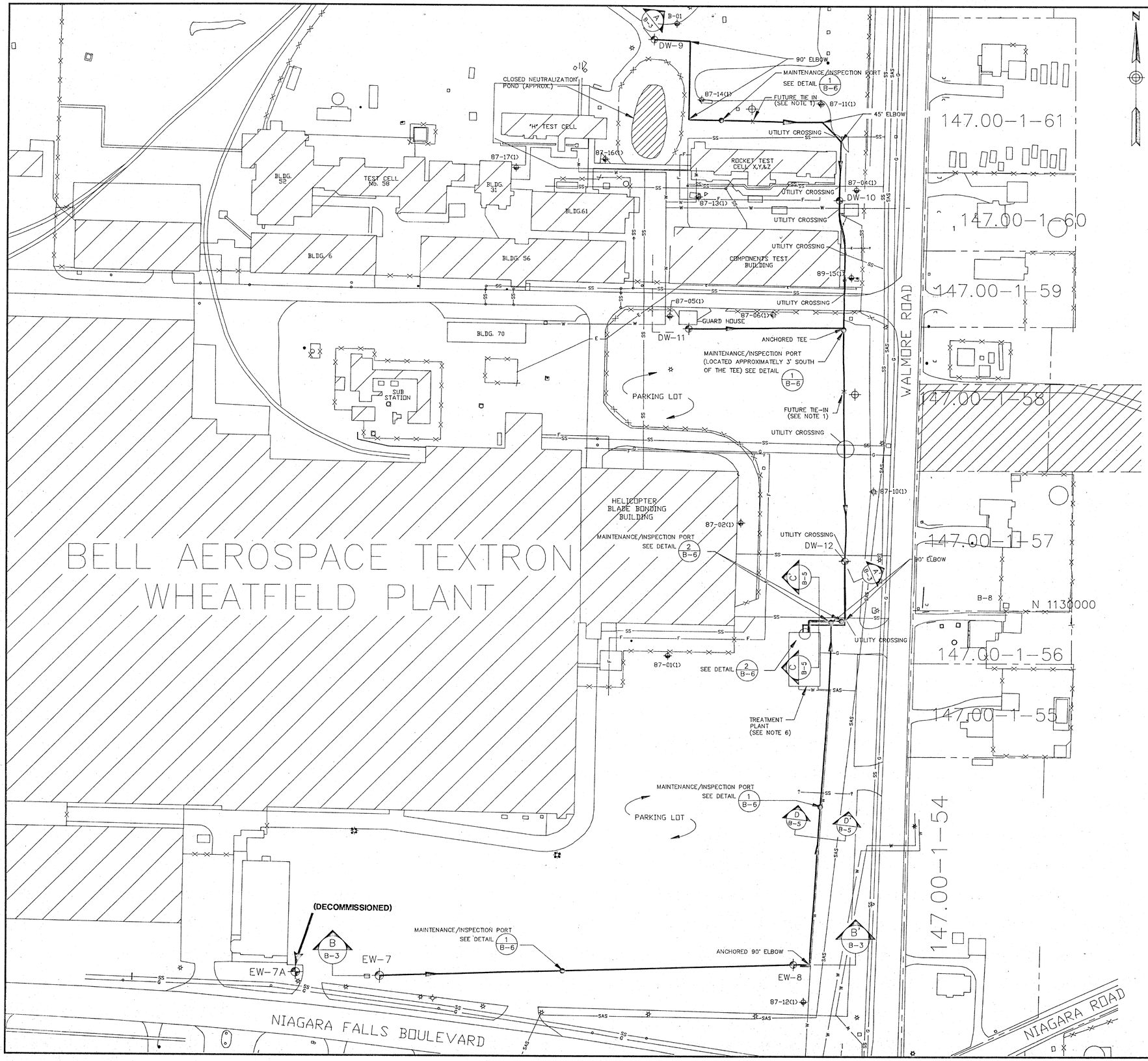
Golder Associates

Buffalo, New York

JUNE 1995

STATE OF NEW YORK
JEFFREY B. FASSETT
LICENSED PROFESSIONAL ENGINEER

JUN 16 1995



LEGEND

- MONITORING WELL LOCATION
- DNAPL WELL
- EXTRACTION WELL
- PROPOSED LOCATION OF ADDITIONAL EXTRACTION WELL (IF NECESSARY)
- BURIED PIPELINE
- MAINTENANCE/INSPECTION PORT
- INDICATES DIRECTION OF FLOW
- W — WATER UTILITY
- F — FIRE PROTECTION UTILITY
- G — GAS UTILITY
- E — ELECTRICAL UTILITY
- SS — STORM SEWER UTILITY
- SAS — SANITARY SEWER UTILITY

4/B-5 — DETAIL/CROSS SECTION DESIGNATION
DWG. No. WHERE DETAIL/CROSS SECTION IS PRESENTED

NOTES

1. TEE INSTALLED HORIZONTALLY, WITH FLANGED END TOWARD FUTURE WELL LOCATION. TEE INCLUDES LEAK DETECTION JUNCTION FOR LEAK DETECTION CABLE AT FUTURE WELL. SURFACE MONUMENT PLACED AT TEE FOR REFERENCE.
2. BASE TOPOGRAPHIC MAP PREPARED BY AERO-METRIC ENGINEERING, INC. ON 5/3/91.
3. THE UNDERGROUND UTILITIES SHOWN ARE BASED ON MAPS PROVIDED BY BELL AEROSPACE TEXTRON. THERE MAY BE ADDITIONAL UTILITIES NOT SHOWN.GOLDER ASSOCIATES IS IS NOT RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF THE UTILITY MAPS PROVIDED BY BELL AEROSPACE TEXTRON. APPROXIMATE LOCATIONS OF UTILITIES ARE FOR SURVEYED LOCATIONS OF UTILITIES WHICH CROSS EXTRACTION SYSTEM, SEE SURVEY RECORD DRAWING. (APPENDIX J)
4. PIPING INSTALLED BENEATH UNDERGROUND UTILITIES. SEE SURVEY RECORD DRAWING FOR PIPE INVERT ELEVATIONS. AT EACH UTILITY CROSSING, AN 8-INCH DIA. STEEL PIPE SLEEVE (SCH 80) WAS PLACED AROUND THE CONTAINMENT PIPE AS MEANS OF PROTECTION. THE STEEL PIPE EXTENDS 2 FT. BEYOND EITHER SIDE OF THE UTILITY.
5. PULL CORDS INSTALLED IN CONDUITS FOR COMMUNICATION AND ELECTRICAL CABLES FOR FUTURE WELLS.
6. REFER TO ON-SITE WASTE WATER TREATMENT FACILITY DESIGN FOR DETAILS.

JUN 16 1995

60 0 60 120
scale feet

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN
PROJECT No. 933-9068

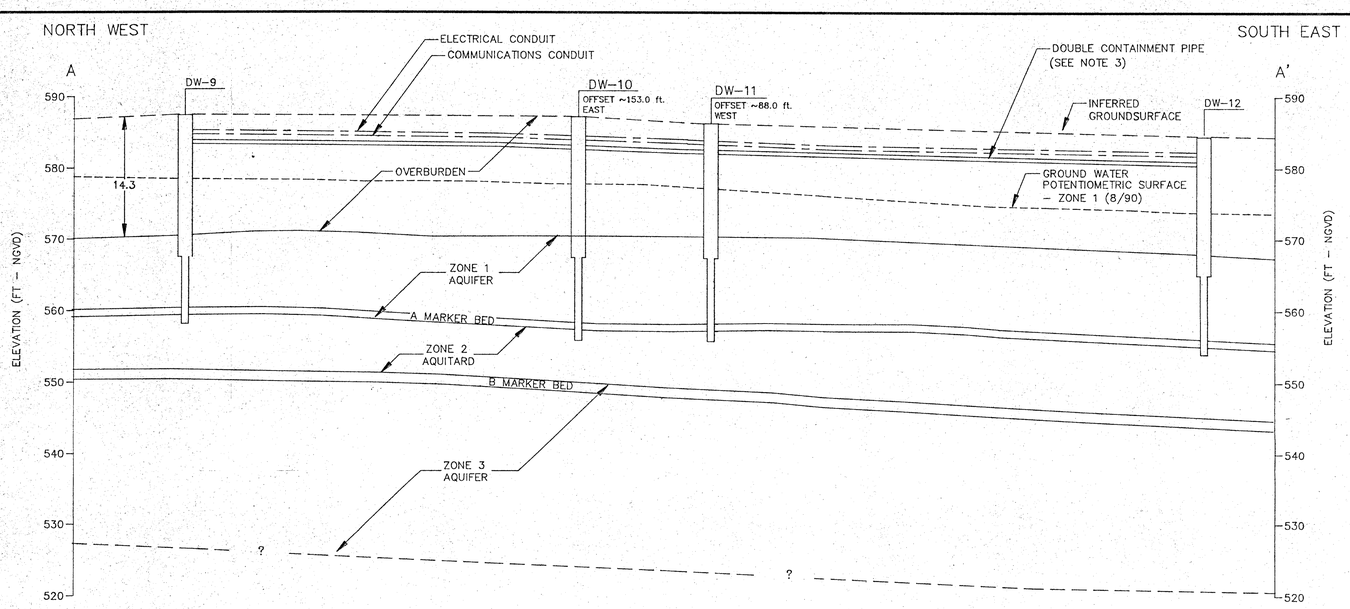
DR BY	BEC	6/13/95
CHK BY	ALG	6/13/95
RVW BY	JBF	6/13/95

PROJECT: Bell Aerospace TEXTRON WHEATFIELD, NEW YORK

SHEET TITLE: RECORD DRAWING GROUNDWATER EXTRACTION SYSTEM PLAN

Golder Associates
Buffalo, New York

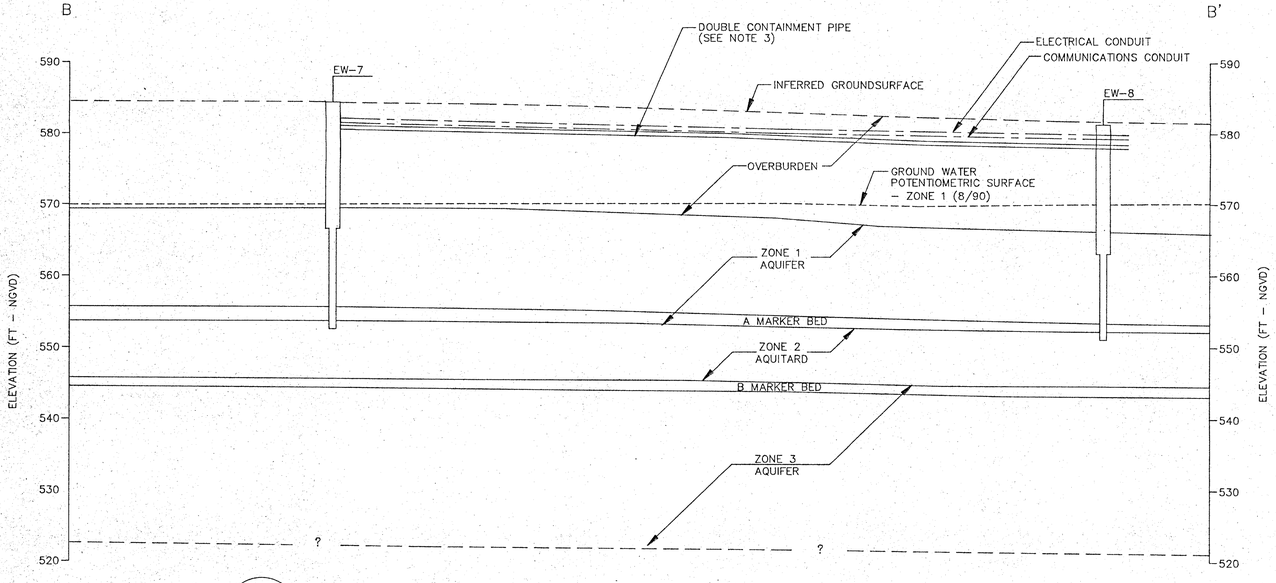
SHEET OF
FILE No. NY01-297
B-2



A-A' / B-3 **EXTRACTION SYSTEM PROFILE SECTION A-A'**

50 0 50 100 horizontal scale feet

10 0 10 20 vertical scale feet



B-B' / B-3 **EXTRACTION SYSTEM PROFILE SECTION B-B'**

50 0 50 100 horizontal scale feet

10 0 10 20 vertical scale feet

LEGEND

- INFERRED GROUND SURFACE
- GROUNDWATER PHREATIC SURFACE
- GROUNDWATER POTENTIOMETRIC SURFACE – ZONE 1 AQUIFER
- EW-8 — EXTRACTION WELL ID
- SURFACE CASING
- UNCASED BOREHOLE (SEE NOTE 6)
- PIPELINE
- CONDUIT LINES
- 4 / B-5 — DETAIL/CROSS SECTION DESIGNATION; DWG. No. WHERE DETAIL/CROSS SECTION IS PRESENTED

NOTES

1.) STRATIGRAPHY AND WATER LEVEL DATA OBTAINED FROM RFI REPORT. (GOLDER ASSOCIATES 1990)

2. MAINTENANCE/INSPECTION PORTS AND CHANGE OF DIRECTION IN PIPELINE ARE NOT SHOWN. SEE DRAWING B-2 FOR LOCATIONS.

3.) INVERT ELEVATION OF BURIED PIPELINE SHOWN ON RECORD SURVEY DRAWING (APPENDIX J)

4.) WELLS AND SURFACE CASING NOT SHOWN TO SCALE.

5.) GROUND SURFACE ELEVATIONS AT WELL LOCATIONS ARE APPROXIMATE.

6.) DW-9 CONTAINS 8-INCH STAINLESS STEEL CASING.

JUN 16 1995

STATE OF NEW YORK — JEFFREY D. PASSETT — LICENSED PROFESSIONAL ENGINEER — NO. 070847

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN

PROJECT No. 933-9068

DES BY	JPR	2/18/92
DR BY	BEC	6/13/95
CHK BY	ALG	6/13/95
RVW BY	JBF	6/13/95

PROJECT: Bell Aerospace TEXTRON, WHEATFIELD, NEW YORK

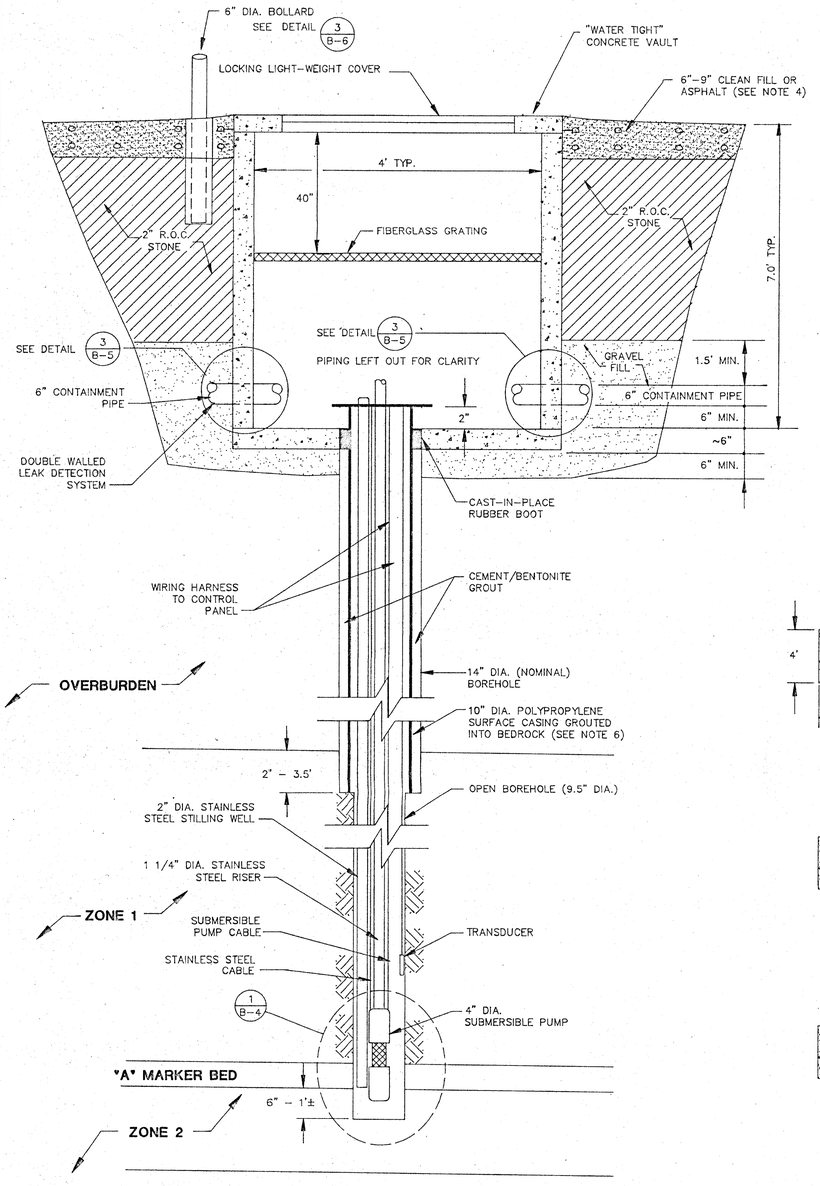
SHEET TITLE: RECORD DRAWING EXTRACTION SYSTEM PROFILE

Golder Associates, Buffalo, New York

SHEET OF

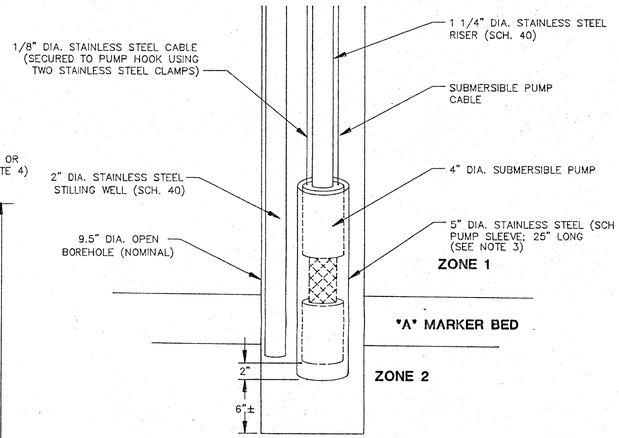
FILE No. NY01-296

B-3



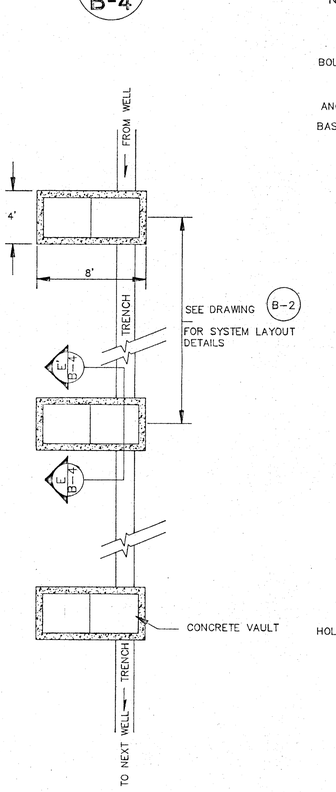
E-E' / B-4 TYPICAL EXTRACTION WELL (SEE NOTE 6)

NOT TO SCALE



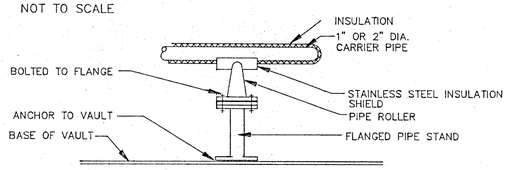
1 / B-4 BOTTOM DETAIL - (SEE NOTE 6)

NOT TO SCALE



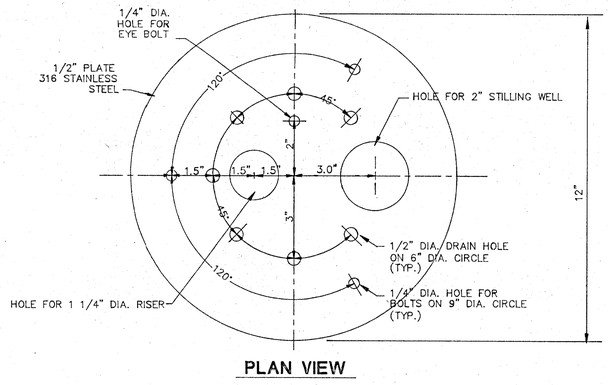
3 / B-4 TYPICAL EXTRACTION SYSTEM LAYOUT

NOT TO SCALE

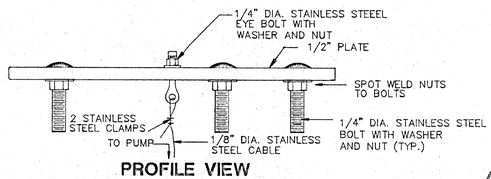


4 / B-4 PIPE ROLLER DETAIL (ELEVATION VIEW)

NOT TO SCALE



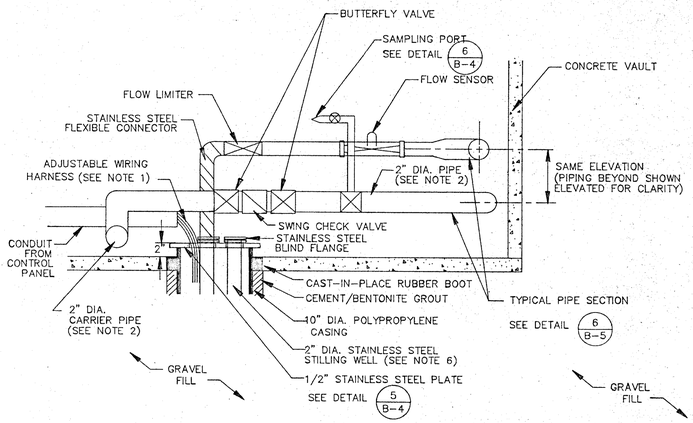
PLAN VIEW



PROFILE VIEW

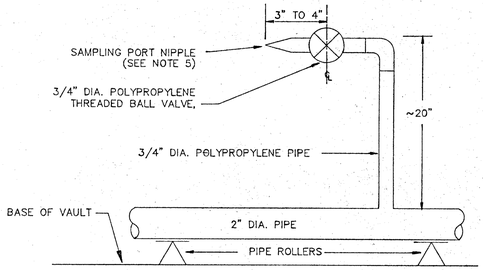
5 / B-4 STAINLESS STEEL PLATE

NOT TO SCALE



2 / B-4 CONTROL/DATA COLLECTION SYSTEM

NOT TO SCALE



6 / B-4 SAMPLING PORT - ELEVATION VIEW

NOT TO SCALE

LEGEND

4/B-5 — DETAIL/CROSS SECTION DESIGNATION
DWG. No. WHERE DETAIL/CROSS SECTION IS PRESENTED

NOTES:

1. TRANSDUCER AND PUMP POWER CABLES INSTALLED TO MAINTAIN A 6 IN. SEPARATION IN VAULT AND IN WELL BORE.
2. INVERT OF PIPING ARRANGEMENT AT WELL HEAD IS A NOMINAL 17 IN. ABOVE BASE OF VAULT. INVERT OF 2 IN. DIA. CARRIER PIPE IN VAULT IS A NOMINAL 8 INCHES ABOVE BASE OF VAULT.
3. PUMP SLEEVE IS SECURED TO PUMP RISER USING TWO 1/4" DIA. STAINLESS STEEL SET SCREWS.
4. TOP 6"-9" OF FILL IS CONSISTENT WITH ORIGINAL GROUND SURFACE.
5. BOLLARDS INSTALLED AT THE CORNERS OF EACH VAULT.
6. DW-9 HAD THE 10-INCH SURFACE CASING REMOVED, WAS REDRILLED TO 12-INCH DIA. AND HAS AN 8-INCH DIA. STAINLESS CASING AND SCREEN INSTALLED. SEE DESIGN MODIFICATION No.7. STILLING WELL IS 1.5-INCH DIA.

JUN 16 1995

STATE OF NEW YORK JEFFREY B. FASSETT LICENSED PROFESSIONAL ENGINEER No. 070844

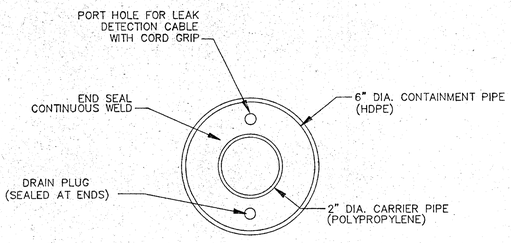
REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE:	AS SHOWN
PROJECT No.	933-9068
PROJECT:	Bell Aerospace TEXTRON, WHEATFIELD, NEW YORK
SHEET TITLE:	RECORD DRAWINGS EXTRACTION SYSTEM DETAILS (SHEET 1 OF 2)

DR BY	BEC	6/13/95
CHK BY	ALG	6/13/95
RVW BY	JBF	6/13/95

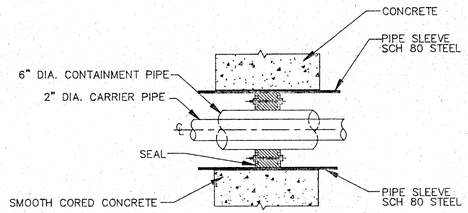
Golder Associates, Buffalo, New York

SHEET OF
FILE No. NY01-289
B-4



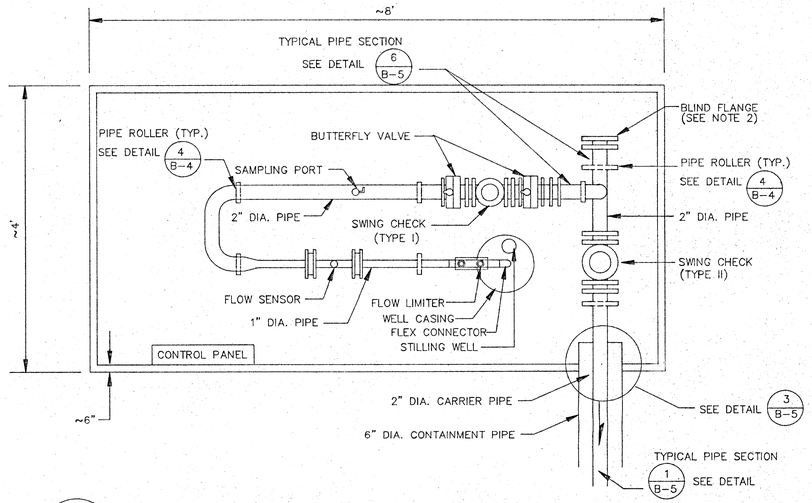
1 B-5 TYPICAL PIPE CROSS SECTION OUTSIDE VAULT

NOT TO SCALE



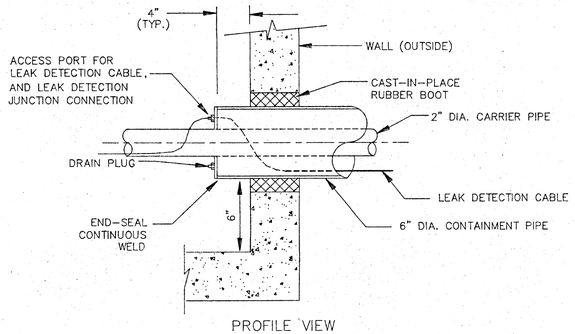
2 B-5 LINK SEAL (TYP.)

NOT TO SCALE



4 B-5 VAULT DETAIL EW-7, DW-9, DW-11 (PLAN VIEW)

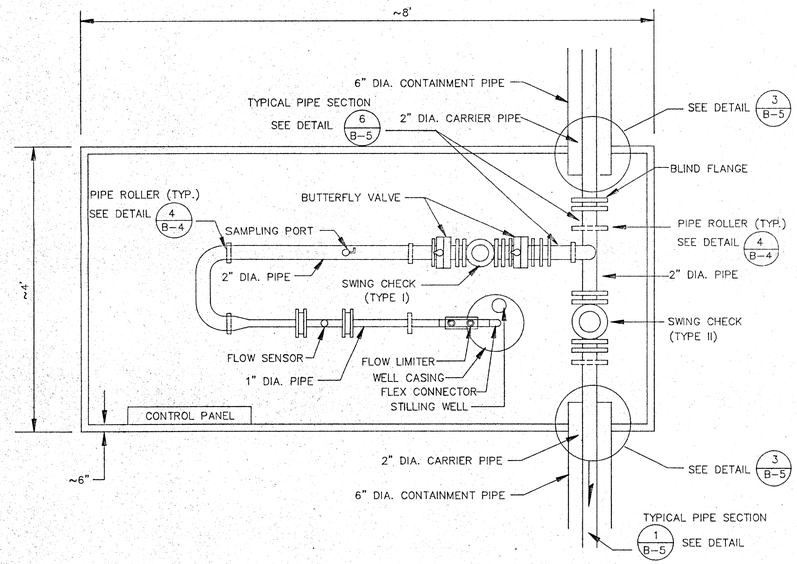
1 0 1 2
scale feet



PROFILE VIEW

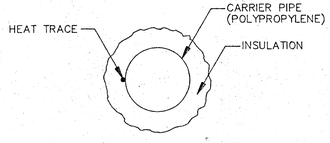
3 B-5 CONTAINMENT / VAULT CONNECTION DETAIL

NOT TO SCALE



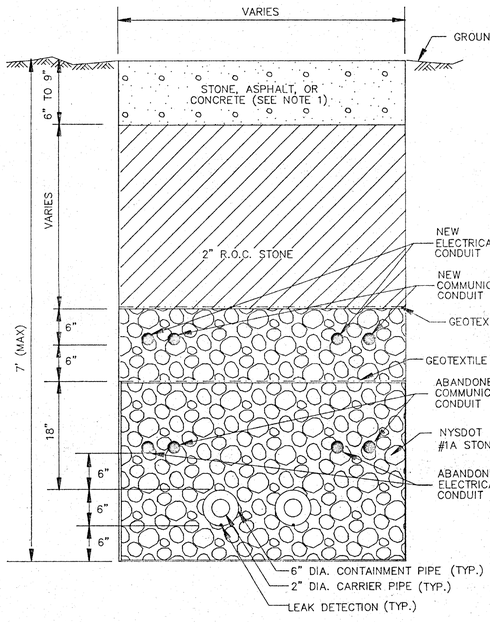
5 B-5 VAULT DETAIL DW-10, DW-12, EW-8 (PLAN VIEW)

1 0 1 2
scale feet



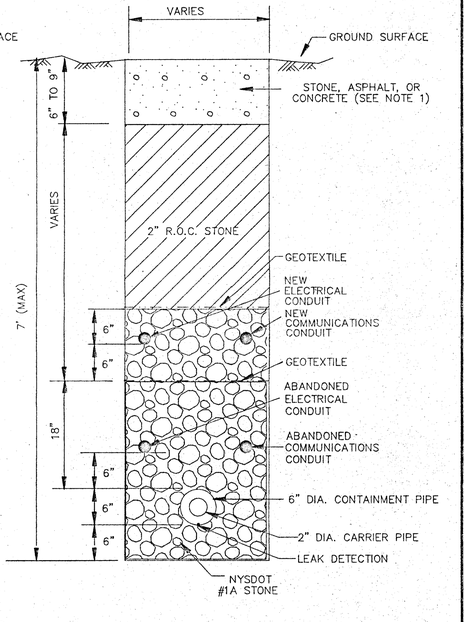
6 B-5 TYPICAL PIPE CROSS SECTION INSIDE VAULT

NOT TO SCALE



C-C' B-5 TYPICAL TRENCH DETAIL

1 0 1 2
scale feet



D-D' B-5 TYPICAL TRENCH DETAIL

1 0 1 2
scale feet

JUN 16 1995

LEGEND

4 / B-5 — DETAIL/CROSS SECTION DESIGNATION; DWG. No. WHERE DETAIL/CROSS SECTION IS PRESENTED

NOTE

1. CONTRACTOR RESTORED SITE TO ORIGINAL SURFACE CONDITIONS.
2. LEAK DETECTION JUNCTION INCLUDED FOR LEAK DETECTION CABLE FOR FUTURE WELL.

STATE OF NEW YORK JEFFREY D. FASSETT LICENSED PROFESSIONAL ENGINEER NO. 070567

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE:	AS SHOWN	
PROJECT No.	933-9068	
DR BY	BEC	6/13/95
CHK BY	ALG	6/13/95
RVW BY	JBF	6/13/95

PROJECT: Bell Aerospace TEXTRON, WHEATFIELD, NEW YORK

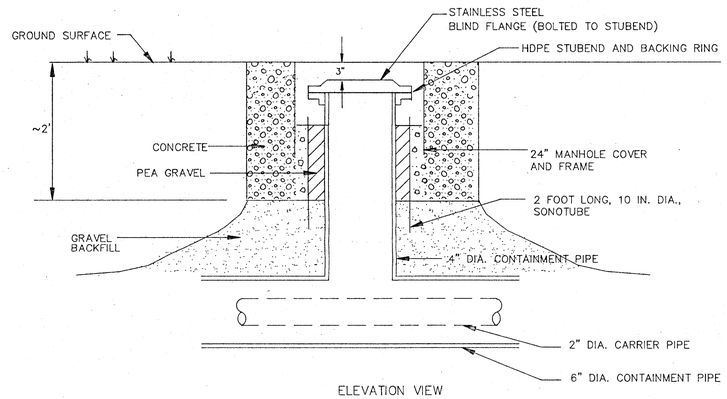
SHEET TITLE: RECORD DRAWING EXTRACTION SYSTEM DETAILS (SHEET 2 OF 2)

Golder Associates, Buffalo, New York

SHEET OF

FILE No. NY01-290

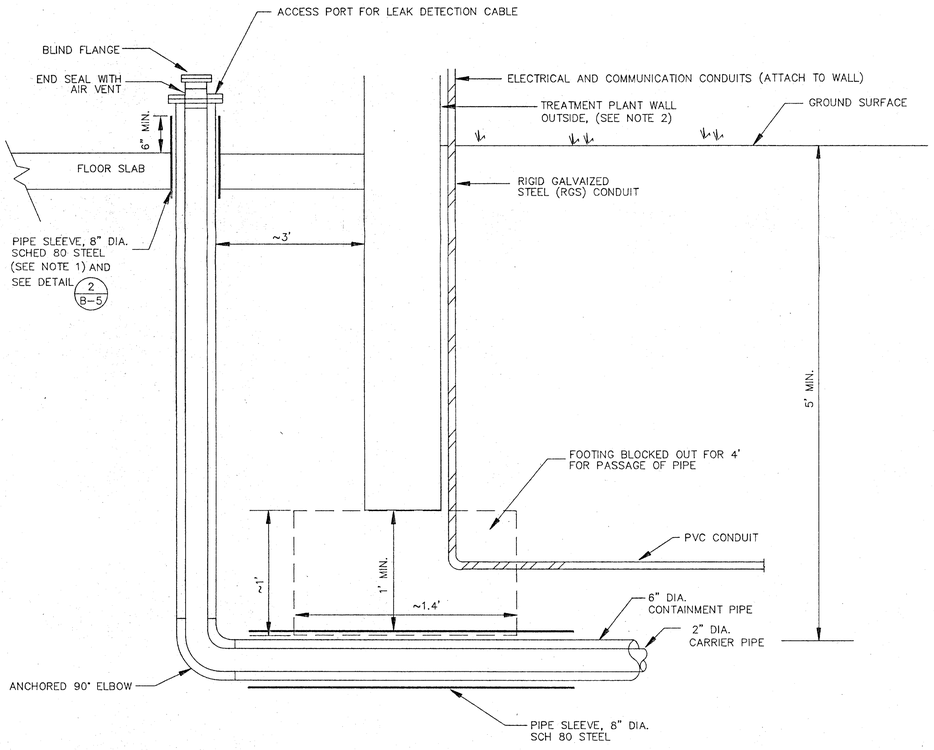
B-5



ELEVATION VIEW

1 / B-6 MAINTENANCE/INSPECTION PORT

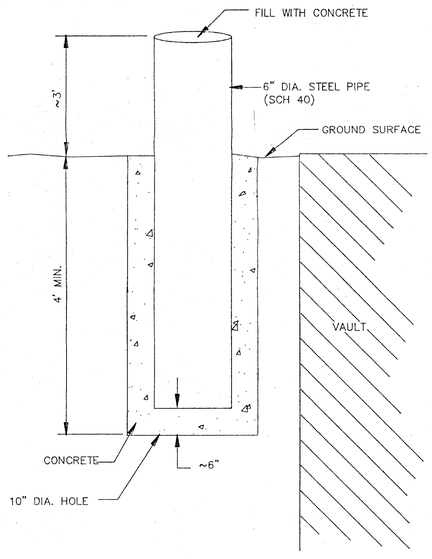
NOT TO SCALE



ELEVATION VIEW

2 / B-6 PIPING INTO BUILDING ELEVATION DETAIL

NOT TO SCALE



3 / B-6 BOLLARD DETAIL

NOT TO SCALE

LEGEND

4/B-5 — DETAIL/CROSS SECTION DESIGNATION
DWG. No. WHERE DETAIL/CROSS SECTION IS PRESENTED

NOTE

1. TOP OF PIPE ESTIMATED TO BE 5 FT. BELOW GROUND SURFACE.
2. TWO SEPERATE PIPELINES ENTER TREATMENT PLANT BUILDING, AS SHOWN ON DRAWING B-2. REFER TO ON-SITE WASTE WATER TREATMENT FACILITY DESIGN FOR ENTRANCE LOCATIONS.

JUN 16 1995

STATE OF NEW YORK — JEFFREY B. FASSETT — LICENSED PROFESSIONAL ENGINEER

REV	DATE	DESCRIPTION	DR BY	RVW BY

SCALE: AS SHOWN
PROJECT No. 933-9068

DR BY	BEC	6/13/95
CHK BY	ALG	6/13/95
RVW BY	JBF	6/13/95

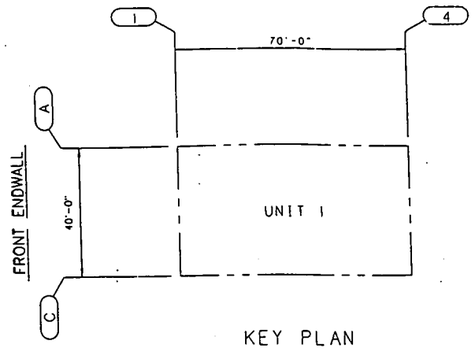
PROJECT: Bell Aerospace TEXTRON
WHEATFIELD, NEW YORK

SHEET TITLE: RECORD DRAWING
PIPING DETAILS

Golder Associates
Buffalo, New York

SHEET OF
FILE No. NY01-292
B-6

TREATMENT BUILDING SHELL
DESIGN DRAWINGS PREPARED BY
BUTLER MANUFACTURING COMPANY



KEY PLAN

SPECIFIC ERECTION DRAWING LIST

THE DRAWINGS LISTED BELOW HAVE BEEN CREATED BY COMPUTER SPECIFICALLY FOR YOUR ORDER TO ASSIST YOU IN PUTTING UP YOUR BUILDING. THESE SPECIFIC ERECTION DRAWINGS ARE THE SAME SIZE AS THIS SHEET AND CAN BE IDENTIFIED INDIVIDUALLY FROM THE TITLES AND DRAWING SEQUENCE NUMBERS THAT APPEAR IN THE LOWER RIGHT HAND CORNER OF EACH DRAWING.

DRAWING TITLE:		AC FILE NO.:
ROOF SECONDARY STRUCTURAL FRAMING PLAN		DATE: 02/16/83
	DRAWING NUMBER: D 83-123456-05L	REVISION 02

TITLE

THE YEAR DURING WHICH YOUR ORDER WAS ENTERED

THE BUTLER ORDER NUMBER OF YOUR ORDER

DRAWING SEQUENCE NUMBER

REVISION LEVEL OF THE DRAWING. IF THE DRAWING HAS NEVER BEEN REVISED. 00 APPEARS HERE.

D93-048747-00 COVER DRAWING - SHEET 1
D93-048747-01 SPECIFIC ANCHOR BOLT DRAWING - SHEET 1
D93-048747-01A SPECIFIC REACTION DRAWING - SHEET 2
D93-048747-01B ANCHOR BOLT DETAIL SHEET - SHEET 3
D93-048747-02 CROSS SECTION ERECTION DRAWING - SHEET 1
D93-048747-02A CROSS SECTION ERECTION DRAWING - SHEET 2
D93-048747-02B CROSS SECTION ERECTION DRAWING - SHEET 3
D93-048747-02C CROSS SECTION ERECTION DRAWING DETAIL SHEET - SHEET 4
D93-048747-03 WIND BRACING DRAWING - SHEET 1
D93-048747-03A WIND BRACING DETAIL SHEET - SHEET 2
D93-048747-04 ROOF SECONDARY STRUCTURAL FRAMING PLAN - SHEET 1
D93-048747-04A ROOF SECONDARY STRUCTURAL DETAIL SHEET - SHEET 2
D93-048747-05 WALL SECONDARY STRUCTURAL ELEVATION - SHEET 1
D93-048747-05A WALL SECONDARY STRUCTURAL ELEVATION - SHEET 2
D93-048747-05B WALL SECONDARY STRUCTURAL ELEVATION DETAIL SHEET - SHEET 3
D93-048747-06 WALL PANEL DRAWING - SHEET 1
D93-048747-06A WALL PANEL DRAWING - SHEET 2
D93-048747-07 ROOF PANEL DRAWING - SHEET 1

SUPPLEMENTING THE SPECIFIC ERECTION DRAWINGS LISTED ARE SEVERAL GENERAL ERECTION DRAWINGS CALLED "PLANOGRAPHS". SEE THE DRAWING MANIFEST FOR A COMPLETE LIST OF THESE DRAWINGS.

COVER DRAWING NOTES

STANDARD NOTES:

CD0001 ATTACH PATENT PLATE 007849 TO THE WEB OF AN INTERMEDIATE FRAME COLUMN AT EYE LEVEL.

CD0002 PARTS SHOWN MAY BE UPGRADED DUE TO STANDARDIZED FABRICATION. REFER TO THE SHIPPING MANIFEST FOR POSSIBLE SUBSTITUTIONS.

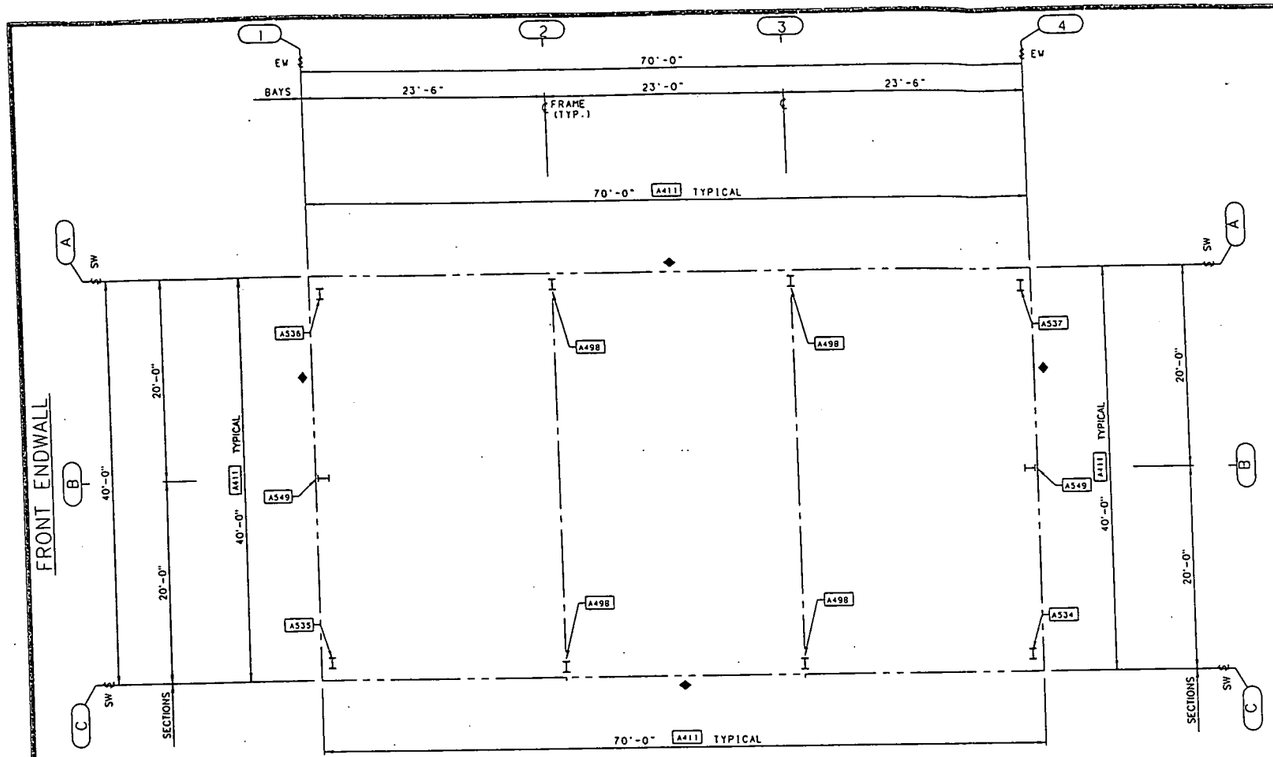
CD0010 MATERIALS

	ASTM DESIGNATION	
STRUCTURAL STEEL PLATE	EQUIV TO A-572	FY= 50KSI (GRADE 50)
LIGHT GAGE/COLD FORMED	EQUIV TO A-570	FY= 55KSI (GRADE 55)
BRACE RODS 3/4" & LESS	EQUIV TO A-108	GRADE 1018
BRACE RODS OVER 3/4"	EQUIV TO A-572	GRADE 50 OR GREATER
HOT ROLLED MILL SHAPES	A-36, A-572	FY= 36KSI, FY=50KSI
ROOF AND WALL PANELS	A-446	GRADE 45 OR GREATER
BOLTS	A-307 AND A-325	

CD0011 HIGH STRENGTH BOLTING:

ALL HIGH STRENGTH BOLTS ARE A-325-T WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE "TURN-OF-THE-NUT" METHOD SPECIFIED IN THE NINTH EDITION OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" PER SECTION 8.0 (1). A-325 BOLTS MAY BE INSTALLED WITHOUT WASHERS WHEN TIGHTENED BY THE "TURN-OF-THE-NUT" METHOD. IT IS THE RESPONSIBILITY OF THE ERECTOR TO ASSURE PROPER TIGHTNESS. SEE INSTALLATION OF A-325T BOLT DRAWING 0-1080268 (GROUP 52-38).

REVISION NO. 1	REVISION NO. 2							
DATE:		DATE:		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: COVER DRAWING	HNA / AC FILE NO.:
DRAWN BY:		DRAWN BY:								GROUP: A / DATE: 09/21/93
CHECKED BY:		CHECKED BY:								DRAWING NUMBER: D93-048747-0C / REV. 00



STANDARD NOTES:

AB0007 GIVE TOP OF FOUNDATION A TROWEL FINISH. THE FOUNDATION MUST BE SQUARE, LEVEL, AND SMOOTH.

AB0009 ANCHOR BOLTS MUST BE LOCATED BY MEANS OF A TEMPLATE. DO NOT HAND SET ANCHOR BOLTS.

AB0010 ANCHOR BOLTS, NUTS AND WASHERS MUST BE ASTM TYPE A307.

AB0013 USE REINFORCING STEEL AS REQUIRED. PROVIDE FOR HORIZONTAL LOAD ON ANCHOR BOLTS.

AB0014 C A U T I O N
****
RIGID FRAMES HAVE BOTH HORIZONTAL AND VERTICAL REACTIONS ACTING AT THE BASE OF THE COLUMN. IN SOME CASES THE HORIZONTAL FORCE IS GREATER THAN THE VERTICAL. A FOUNDATION DESIGNED FOR A CONVENTIONAL STRUCTURE WILL NOT BE SATISFACTORY. FAILURE TO MAKE ADEQUATE PROVISION FOR THE HORIZONTAL THRUST CAN RESULT IN FOUNDATION FAILURE.

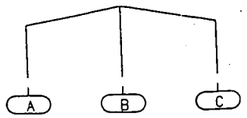
AB0015 FOUNDATION DESIGN AND ANCHOR BOLTS. NUTS AND WASHERS ARE NOT FURNISHED BY BUTLER. PROPER EMBEDMENT LENGTH MUST BE DESIGNED BY FOUNDATION DESIGN ENGINEER.

AB0016 REFER TO DRAWING C-104161 FOR BUTLERIB OR SHADOWRIB WALL BASE ANGLE INSTALLATION.

AB0017 THE SOLID BLACK <> SYMBOL DESIGNATES A BRACED BAY OR SECTION.

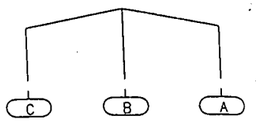
UNIT 1 ANCHOR BOLT PLAN

REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: SPECIFIC ANCHOR BOLT DRAWING	HNA GROUP: A DRAWING NUMBER: D93-048747-01	AC FILE NO: DATE: 09/21/93 REV. 00
DRAWN BY:	DRAWN BY:								
CHECKED BY:	CHECKED BY:								



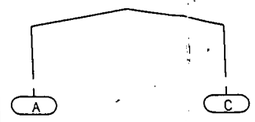
UNIT 1 - ENDWALL FRAME AT SIDEWALL GRID 1

		A		B			C	
		H	V	H	V	Z	H	V
DL	DEAD LOAD	0.01	0.52	0.00	1.55	0.00	-0.01	0.52
CLL	COLLATERAL LOAD	0.03	0.92	0.00	2.97	0.00	-0.03	0.92
SL	SNOW LOAD	0.11	2.91	0.00	9.41	0.00	-0.11	2.91
WLL	WIND LOAD LEFT	-4.74	-5.85	0.00	-0.59	0.00	-0.63	-1.71
WLR	WIND LOAD RIGHT	0.56	3.06	3.56	-10.14	0.00	1.24	-1.08
EQ	SEISMIC LOAD	-0.27	-0.34	0.00	0.36	0.00	-0.01	-0.02
SLL	MIN SNOW LOAD LEFT	-0.07	2.30	0.00	3.58	0.00	0.07	-0.54
SLR	MIN SNOW LOAD RIGHT	-0.07	-0.25	0.22	3.01	0.00	-0.15	2.59
EWP	EW WIND PRESSURE	1.22	-2.61	0.00	-2.94	4.39	-1.22	-2.61
EWS	EW WIND SUCTION	1.22	-2.61	0.00	-2.94	-4.39	-1.22	-2.61
	MAX. POS. REACTION	1.32	6.78	3.56	13.93	4.39	1.26	4.35
	MAX. NEG. REACTION	-4.72	-5.34	0.00	-8.59	-4.39	-1.32	-2.09



UNIT 1 - ENDWALL FRAME AT SIDEWALL GRID 4

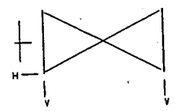
		C		B			A	
		H	V	H	V	Z	H	V
DL	DEAD LOAD	0.01	0.52	-0.00	1.55	0.00	-0.01	0.52
CLL	COLLATERAL LOAD	0.03	0.92	-0.00	2.97	0.00	-0.03	0.92
SL	SNOW LOAD	0.11	2.91	-0.00	9.41	0.00	-0.11	2.91
WLR	WIND LOAD RIGHT	0.63	-1.71	-0.00	-0.59	0.00	4.74	-5.85
WLL	WIND LOAD LEFT	-1.24	-1.08	-3.56	-10.14	0.00	-0.56	3.06
EQ	SEISMIC LOAD	0.01	-0.02	-0.00	0.36	0.00	0.27	-0.34
SLR	MIN SNOW LOAD RIGHT	-0.07	-0.54	-0.00	3.58	0.00	0.07	2.30
SLL	MIN SNOW LOAD LEFT	0.15	2.59	-0.22	3.01	0.00	0.07	-0.25
EWP	EW WIND PRESSURE	1.22	-2.61	-0.00	-2.94	4.39	-1.22	-2.61
EWS	EW WIND SUCTION	1.22	-2.61	-0.00	-2.94	-4.39	-1.22	-2.61
	MAX. POS. REACTION	1.32	4.35	-3.56	13.93	4.39	4.72	6.78
	MAX. NEG. REACTION	-1.26	-2.09	-0.00	-8.59	-4.39	-1.32	-5.34



UNIT 1 - FRAME AT SIDEWALL GRIDS 2 & 3

		A		C	
		H	V	H	V
DL	DEAD LOAD	0.38	2.02	-0.38	2.02
CLL	COLLATERAL LOAD	1.00	4.66	-1.00	4.66
SL	SNOW LOAD	3.17	14.78	-3.17	14.78
WLL	WIND LOAD LEFT	-7.47	-11.87	-2.92	-3.93
WLR	WIND LOAD RIGHT	2.92	-3.93	7.47	-11.87
EQ	SEISMIC LOAD	-0.30	-0.32	-0.30	0.32
SLL	MIN SNOW LOAD LEFT	1.11	7.90	-1.11	2.44
SLR	MIN SNOW LOAD RIGHT	1.11	2.44	-1.11	7.90
EWP	EW WIND PRESSURE	1.40	-7.90	-1.40	-7.90
EWS	EW WIND SUCTION	1.40	-7.90	-1.40	-7.90
	MAX. POS. REACTION	6.01	21.46	7.09	21.46
	MAX. NEG. REACTION	-7.09	-9.85	-6.01	-9.85

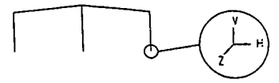
BRACED BAY REACTION - UNIT 1



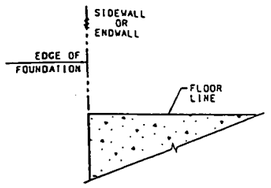
SIDEWALL GRID	BETWEEN GRIDS	H	V
A	2-3	5	4
C	2-3	5	4

REACTION NOTES:

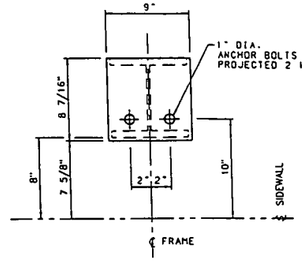
1. THE VERTICAL (V) AND HORIZONTAL (H AND Z) REACTION ARE STATED IN KIPS. (1 KIP = 1000 POUNDS) POSITIVE DIRECTION IS AS SHOWN IN THE FOLLOWING DIAGRAM.
2. MOMENT REACTIONS ARE STATED IN INCH-KIPS AND ARE POSITIVE IN A CLOCKWISE DIRECTION.
3. THE FORCE ON THE ANCHOR BOLTS OR FOUNDATION WILL BE IN THE OPPOSITE DIRECTION TO THAT SHOWN.
4. MAXIMUM REACTION SUMMARY IS THE MAXIMUM POSITIVE AND NEGATIVE REACTIONS BASED ON THE REQUIRED LOAD COMBINATIONS.



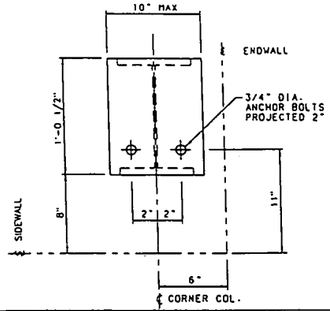
REVISION NO. 1	REVISION NO. 2						
DATE:		DATE:		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PROMIS® ORDER ENGINEERING SYSTEM	BUILDER: L&M CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: SPECIFIC REACTION DRAWING	HNA	AG FILE NO:
DRAWN BY:		DRAWN BY:								GROUP: A	DATE: 09/21/93
CHECKED BY:		CHECKED BY:								DRAWING NUMBER: D93-048747-01A	REV. 00



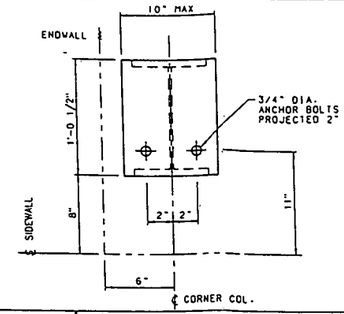
SECTION A411 | TYP. SECTION AT EDGE OF FOUNDATION UN-NOTCHED BASE



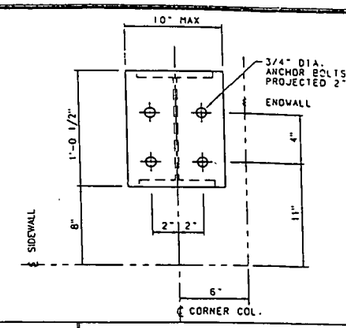
DETAIL A498 | SIDEWALL COLUMN



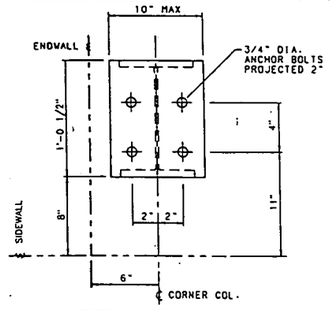
DETAIL A534 | CORNER COLUMN



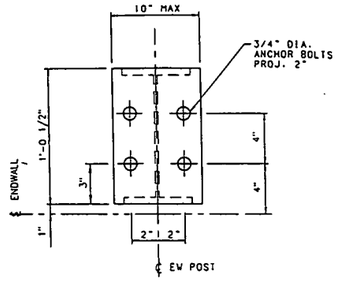
DETAIL A535 | CORNER COLUMN



DETAIL A536 | CORNER COLUMN

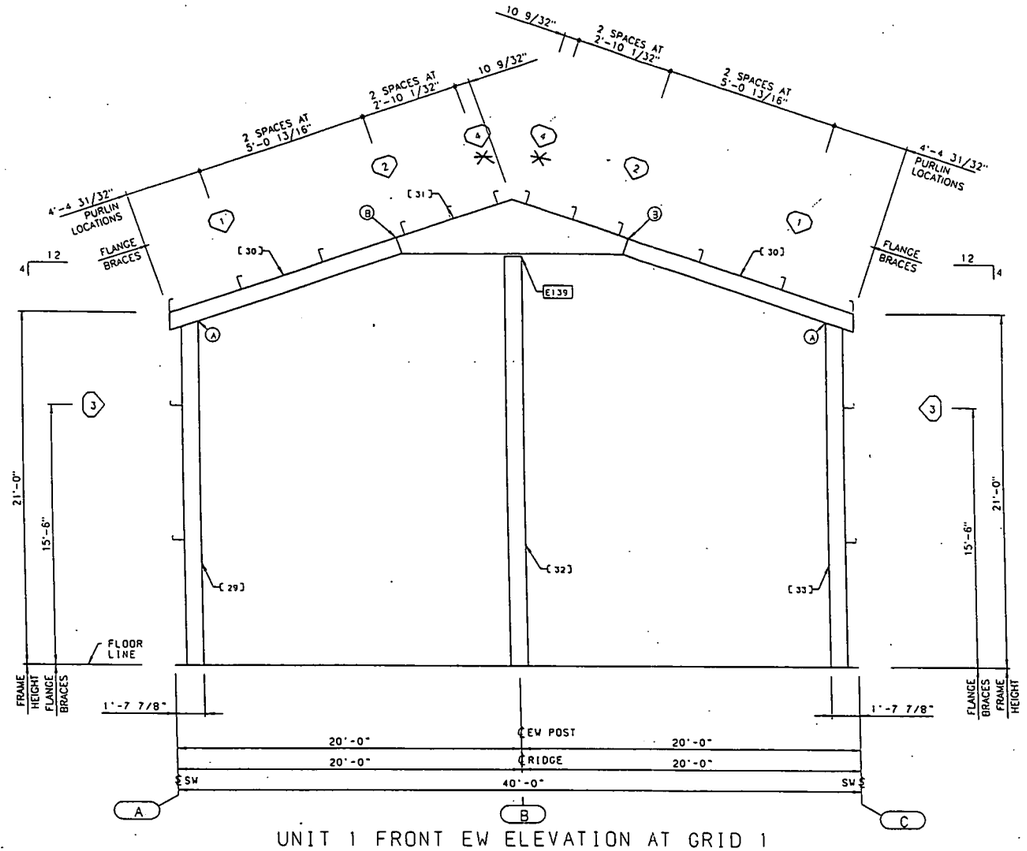


DETAIL A537 | CORNER COLUMN



DETAIL A549 | ENDWALL POST

REVISION NO. 1		REVISION NO. 2		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRO/TO® ORDER ENGINEERING SYSTEM	BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	HNA	AG FILE NO:
DATE:		DATE:								GROUP: A	DATE: 09/21/93
DRAWN BY:		DRAWN BY:				LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	ANCHOR BOLT DETAIL SHEET	DRAWING NUMBER: D93-048747-01B	REV. 00
CHECKED BY:		CHECKED BY:									



UNIT 1 FRONT EW ELEVATION AT GRID 1

PART SCHEDULE				
[ ]	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
29	EW CORNER POST	A06910	20'-2 5/32"	
30	EW ROOF BEAM	A06920	14'-0 5/32"	
31	EW ROOF BEAM	A06930	13'-4 11/16"	
32	EW INTERM POST	A06940	24'-3 27/32"	
33	EW CORNER POST	A06950	20'-2 5/32"	

BOLTED CONNECTION SCHEDULE					
◯	QUANTITY	BOLT NO.	DESCRIPTION	NUT NO.	DETAIL
A	08	097282	5/8X2-1/4 BOLT A325T	095233	
B	04	097282	5/8X2-1/4 BOLT A325T	095233	

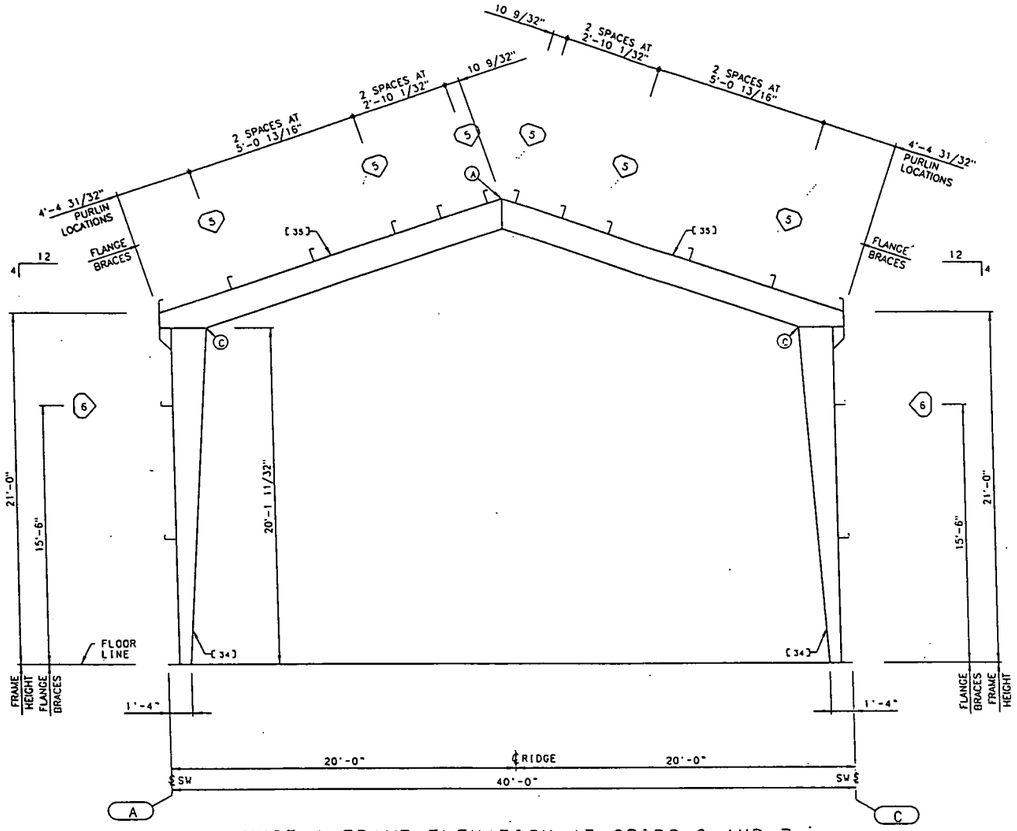
FLANGE BRACE SCHEDULE				
◯	PART NO.	DIM. "Y"	DETAIL	FIELD WORK ▲
1	005660	1'-4 1/2"	C001	
2	005665	1'-4 1/2"	C003	
3	005660	1'-4 1/2"	C007	
4	005697	3'-4 1/2"	C025	

STANDARD NOTES:

1F000) ALL HIGH STRENGTH BOLTS ARE A-325-T WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE "TURN-OF-THE-NUT" METHOD SPECIFIED IN THE NINTH EDITION OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" PER SECTION 8 D (1). A-325 BOLTS MAY BE INSTALLED WITHOUT WASHERS WHEN TIGHTENED BY THE "TURN-OF-THE-NUT" METHOD. IT IS THE RESPONSIBILITY OF THE ERECTOR TO ASSURE PROPER TIGHTNESS. SEE INSTALLATION OF A-325T BOLT DRAWING 0-1080268 (GROUP 52-38).

✳BUILDER NOTE:
BUILDER TO FIELD DRILL
FLANGE BRACE HOLES

REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PROMO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10=COLLAT	DRAWING TITLE: CROSS SECTION ERECTION DRAWING	HNA / AG FILE NO:
DRAWN BY:	DRAWN BY:							GROUP: A / DATE: 09/21/93
CHECKED BY:	CHECKED BY:							DRAWING NUMBER: D93-048747-02 / REV. 00



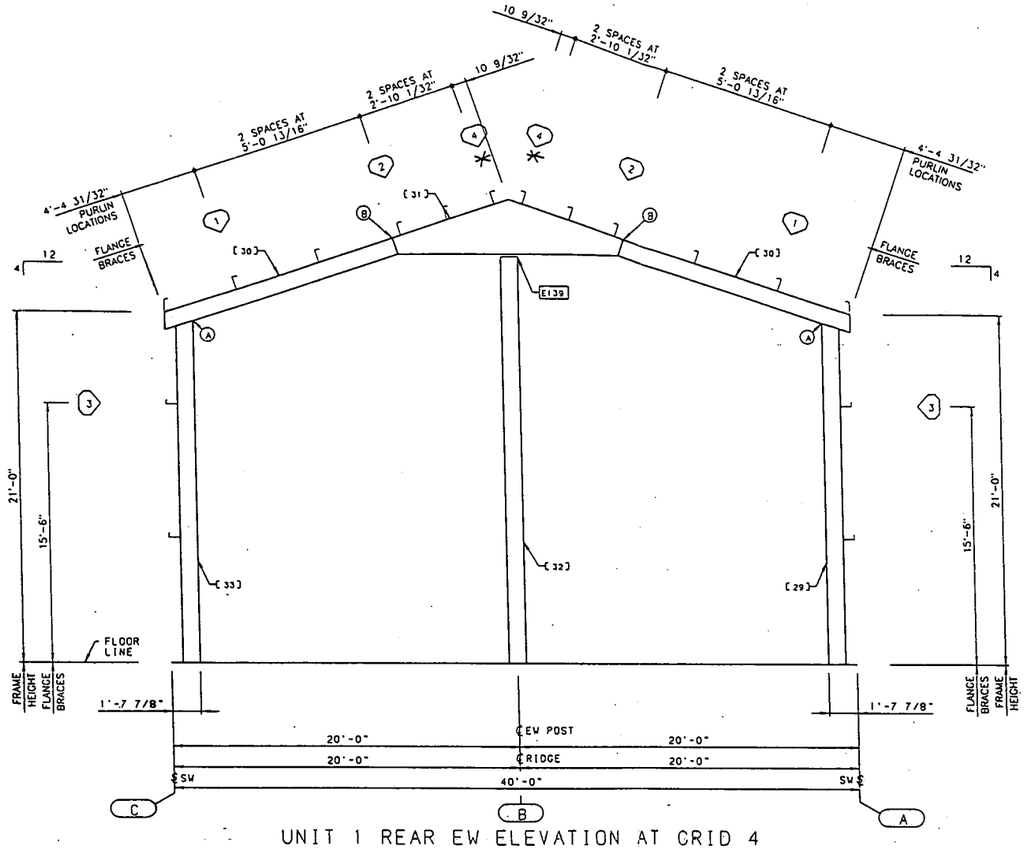
UNIT 1 FRAME ELEVATION AT GRIDS 2 AND 3

PART SCHEDULE				
[ ]	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
34	EXTERIOR COLUMN	A06980	20'-1 11/32"	
35	ROOF BEAM	A06990	21'-0 27/32"	

BOLTED CONNECTION SCHEDULE					
○	QUANTITY	BOLT NO.	DESCRIPTION	NUT NO.	DETAIL
A	08	097282	5/8X2-1/4 BOLT A325T	095233	
C	08	097284	3/4X2-1/2 BOLT A325T	095235	

FLANGE BRACE SCHEDULE				
⬡	PART NO.	DIM. "Y"	DETAIL	FIELD WORK ▲
5	005679	2'-4 1/2"	C002	
6	005683	2'-4 1/2"	C007	

REVISION NO. 1		REVISION NO. 2		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	HNA	AC FILE NO:
DATE:		DATE:				LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	CROSS SECTION ERECTION DRAWING	GROUP: A	DATE: 09/21/93
DRAWN BY:		DRAWN BY:								DRAWING NUMBER: D93-048747-02A	REV. 00
CHECKED BY:		CHECKED BY:									



UNIT 1 REAR EW ELEVATION AT GRID 4

PART SCHEDULE				
[ ]	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
29	EW CORNER POST	A06910	20'-2 5/32"	
30	EW ROOF BEAM	A06920	14'-0 5/32"	
31	EW ROOF BEAM	A06930	13'-4 11/16"	
32	EW INTERM POST	A06940	24'-3 27/32"	
33	EW CORNER POST	A06950	20'-2 5/32"	

BOLTED CONNECTION SCHEDULE					
○	QUANTITY	BOLT NO.	DESCRIPTION	NUT NO.	DETAIL
A	08	097282	5/8X2-1/4 BOLT A325T	095233	
B	04	097282	5/8X2-1/4 BOLT A325T	095233	

FLANGE BRACE SCHEDULE				
⬡	PART NO.	DIM. "Y"	DETAIL	FIELD WORK ▲
1	005660	1'-4 1/2"	C001	
2	005665	1'-4 1/2"	C001	
3	005660	1'-4 1/2"	C007	
4	005697	3'-4 1/2"	C025	

*BUILDER NOTE:
BUILDER TO FIELD DRILL FLANGE BRACE HOLES.

REVISION NO. 1		REVISION NO. 2	
DATE:		DATE:	
DRAWN BY:		DRAWN BY:	
CHECKED BY:		CHECKED BY:	

BUTLER MANUFACTURING COMPANY
GENERAL OFFICES-KANSAS CITY, MISSOURI

PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM

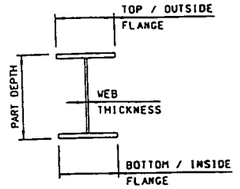
BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO

PROJECT: BELL AEROSPACE NIAGARA FALLS, NY

BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT

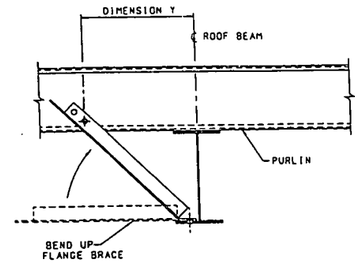
DRAWING TITLE: CROSS SECTION ERECTION DRAWING

HNA | AC FILE NO:
GROUP: A | DATE: 05/21/93
DRAWING NUMBER: D93-048747-02B | REV. 00



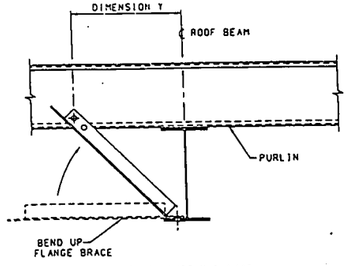
H - SECTION DESIGN INFORMATION

PART	DESCRIPTION
ROOF BEAM A06990 252-7	TOP FLANGE = 5" X .250"
	BOTTOM FLANGE = 5" X .250"
	WEB THICKNESS = .180"
	PART DEPTH = 20"
EW CORNER POST A06910 242-1	TOP FLANGE = 5" X .188"
	BOTTOM FLANGE = 5" X .188"
	WEB THICKNESS = .100"
	PART DEPTH = 11 7/8"
EW ROOF BEAM A06920 168-1	TOP FLANGE = 5" X .188"
	BOTTOM FLANGE = 5" X .188"
	WEB THICKNESS = .100"
	PART DEPTH = 11 7/8"
EW ROOF BEAM A06930 160-5	TOP FLANGE = 7" X .250"
	BOTTOM FLANGE = 7" X .250"
	WEB THICKNESS = .160"
	PART DEPTH = VARIES 12" TO 36 7/32" TO 12"
EW INTERM POST A06940 291-7	TOP FLANGE = 5" X .188"
	BOTTOM FLANGE = 5" X .188"
	WEB THICKNESS = .100"
	PART DEPTH = 11 7/8"
EW CORNER POST A06950 242-1	TOP FLANGE = 5" X .188"
	BOTTOM FLANGE = 5" X .188"
	WEB THICKNESS = .100"
	PART DEPTℓ = 11 7/8"
EXTERIOR COLUMN A06980 241-3	TOP FLANGE = 6" X .250"
	BOTTOM FLANGE = 6" X .313"
	WEB THICKNESS = .120"
	PART DEPTH = VARIES 8" TO 24"



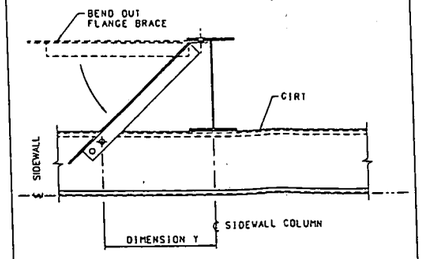
USE (2) 1/2" X 1 1/4" HEX. BOLT (095085) AND 1/2" HEX. NUT (095032)

DETAIL C001 — SINGLE FLANGE BRACE CONNECTION USE FIRST HOLE AT PURLIN CONNECTION



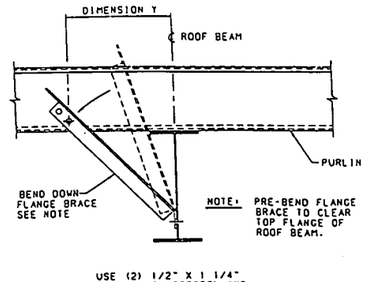
USE (2) 1/2" X 1 1/4" HEX. BOLT (095085) AND 1/2" HEX. NUT (095032)

DETAIL C002 — SINGLE FLANGE BRACE CONNECTION USE SECOND HOLE AT PURLIN CONNECTION



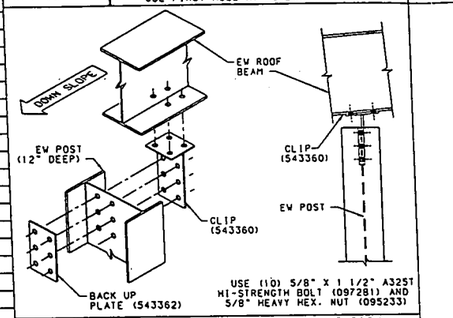
USE (2) 1/2" X 1 1/4" HEX. BOLT (095085) AND 1/2" HEX. NUT (095032)

DETAIL C007 — SINGLE FLANGE BRACE CONNECTION USE FIRST HOLE AT SIDEWALL GIRT CONNECTION



USE (2) 1/2" X 1 1/4" HEX. BOLT (095085) AND 1/2" HEX. NUT (095032)

DETAIL C025 — SINGLE FLANGE BRACE CONNECTION USE FIRST HOLE AT PURLIN CONNECTION



USE (10) 5/8" X 1 1/2" A325T HI-STRENGTH BOLT (097281) AND 5/8" HEAVY HEX. NUT (095233)

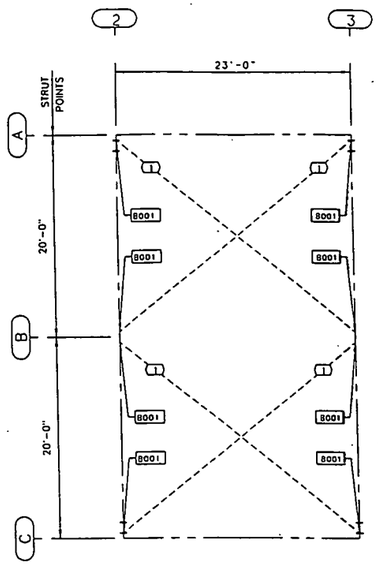
DETAIL E139 — ENDWALL POST TOP CONNECTION LOW SLOPE RANGE - HEAVY LOAD - 12" POST

REVISION NO. 1	REVISION NO. 2
DATE:	DATE:
DRAWN BY:	DRAWN BY:
CHECKED BY:	CHECKED BY:

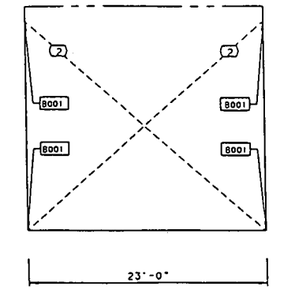
BUTLER MANUFACTURING COMPANY
GENERAL OFFICES-KANSAS CITY, MISSOURI

PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM

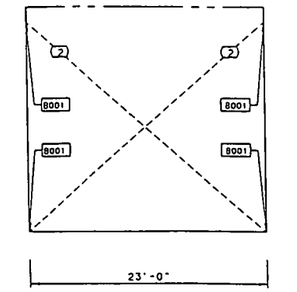
BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	HNA	AC FILE NO:
L&M CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	CROSS SECTION ERECTION DRAWING DETAIL SHEET	GROUP: A	DATE: 09/21/93
				DRAWING NUMBER: D93-048747-02C	REV. 00



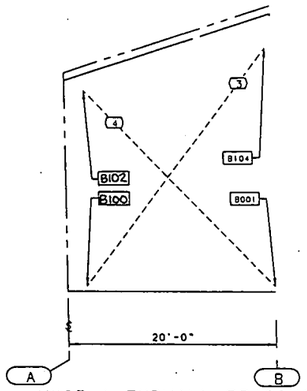
UNIT 1 ROOF BRACING



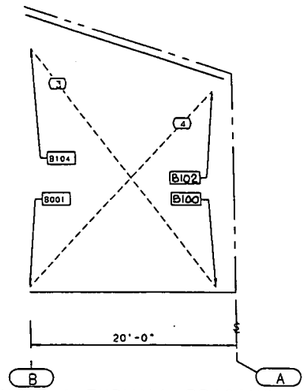
UNIT 1 SIDEWALL BRACING
AT GRID A



UNIT 1 SIDEWALL BRACING
AT GRID C



UNIT 1 ENDWALL BRACING
AT GRID 1



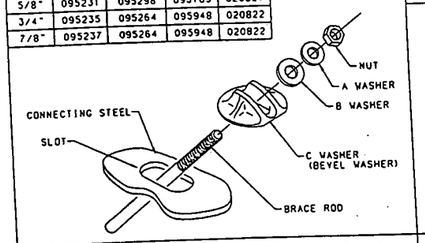
UNIT 1 ENDWALL BRACING
AT GRID 4

BRACE ROD SCHEDULE

	PART NUMBER	DESCRIPTION	THREAD	TURNBUCKLE
1	544046 -374	7/16 " BRACE ROD	RH-RH	NONE
2	544047 -374	1/2 " BRACE ROD	RH-RH	NONE
3	544047 -362	1/2 " BRACE ROD	RH-RH	NONE
4	544047 -320	1/2 " BRACE ROD	RH-RH	NONE

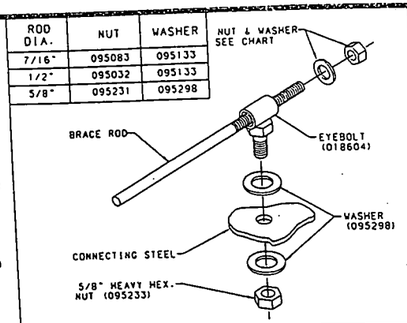
REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PROMO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK. NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS. NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: WIND BRACING DRAWING	HNA GROUP: A DRAWING NUMBER: D93-048747-03
DRAWN BY:	DRAWN BY:							AC FILE NO: DATE: 09/21/93 REV. 00
CHECKED BY:	CHECKED BY:							

ROD DIA.	NUT	WASHERS		
		A	B	C
7/16"	095083	095133	095165	020821
1/2"	095032	095133	095165	020821
5/8"	095231	095298	095165	020821
3/4"	095235	095264	095948	020822
7/8"	095237	095264	095948	020822

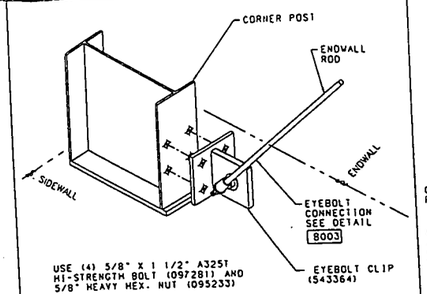


DETAIL B001 TYPICAL BEVEL WASHER CONNECTION

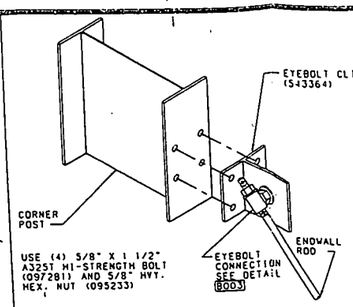
ROD DIA.	NUT	WASHER
7/16"	095083	095133
1/2"	095032	095133
5/8"	095231	095298



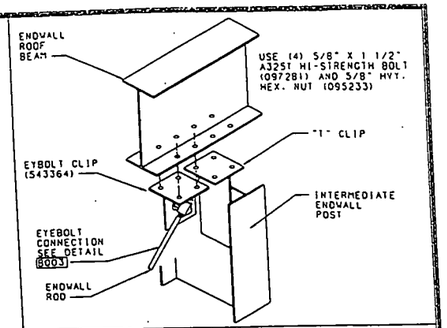
DETAIL B003 TYPICAL EYEBOLT CONNECTION



DETAIL B100 LOWER EYEBOLT CONNECTION BRACED EW AT CORNER POST



DETAIL B102 UPPER EYEBOLT CONNECTION BRACED EW AT CORNER POST



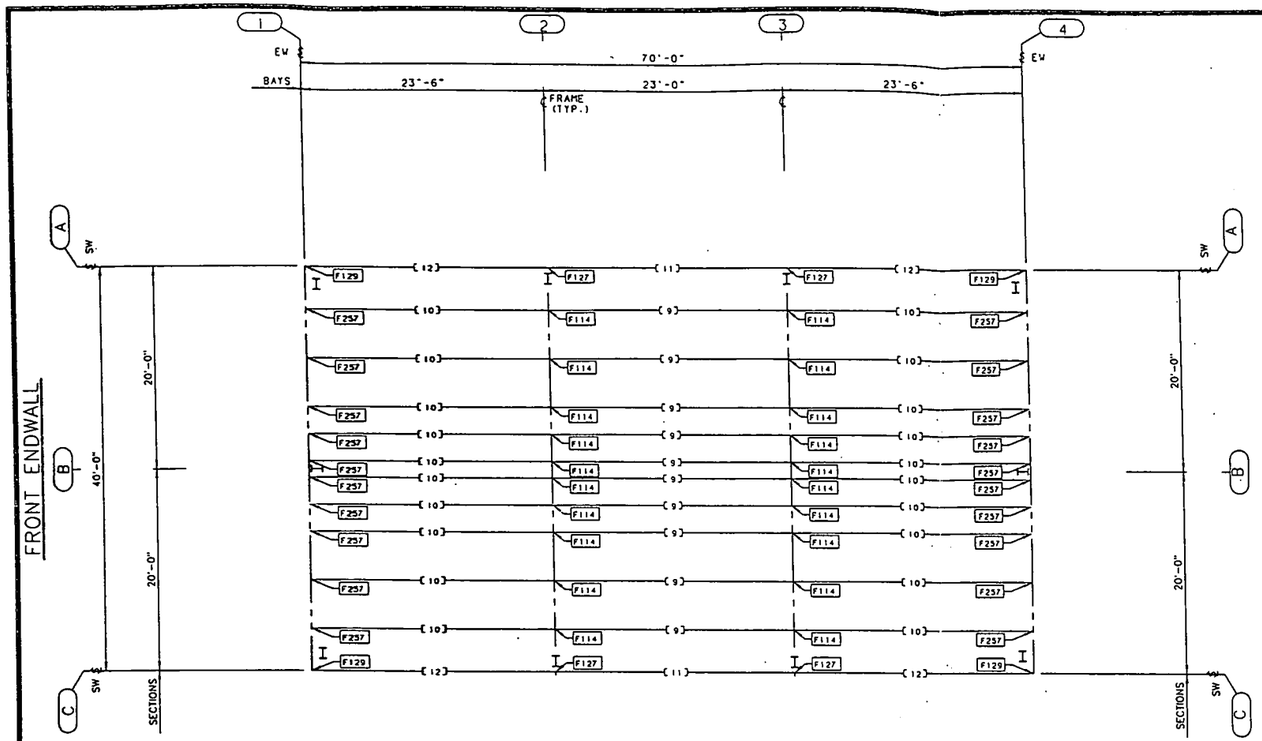
DETAIL B104 UPPER EYBOLT CONNECTION TO ENDWALL ROOF BEAM

REVISION NO. 1		REVISION NO. 2	
DATE:		DATE:	
DRAWN BY:		DRAWN BY:	
CHECKED BY:		CHECKED BY:	

BUTLER MANUFACTURING COMPANY
GENERAL OFFICES-KANSAS CITY, MISSOURI

PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM

BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	AG FILE NO: HNA
LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	WIND BRACING DETAIL SHEET	GROUP: A DATE: 09/21/93
				DRAWING NUMBER: D93-048747-03A REV. 00



UNIT 1 ROOF SECONDARY STRUCTURAL FRAMING PLAN

PART SCHEDULE

( )	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
9	PURLIN	530642 311-4	25'-11 1/2"	
10	PURLIN	530645 317-4	26'-5 1/2"	
11	EAVE STRUT	540206 275-4	22'-11 1/2"	
12	EAVE STRUT	540241 281-4	23'-5 1/2"	

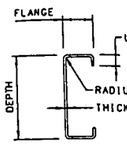
PURLIN BRACE LOCATION SCHEDULE

BETWEEN GRIDS	LOCATION DETAIL	BRACE SECTION TOP	BRACE SECTION BOTTOM	DIM. "B"	RIDGE BRACE
1 AND 2	F146	(2) A	-0-	6'-7 1/2"	(2)0544139
2 AND 3	F146	(2) A	-0-	6'-4 1/2"	(2)0544139
3 AND 4	F146	(2) A	-0-	6'-7 1/2"	(2)0544139

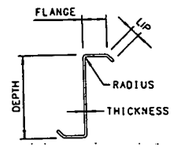
STANDARD NOTES:

RS0006 REFER TO DRAWING B-1080946 FOR PURLIN BRACE PART NUMBERS AND TYPICAL INSTALLATION FOR SLOPE GREATER THAN 0.75:12.

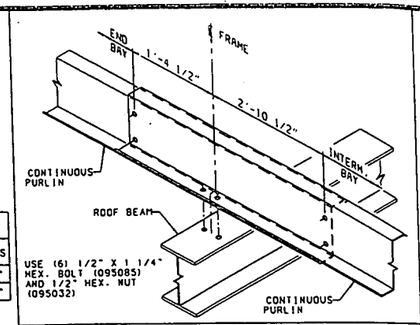
REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRO/ENGINEER® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: ROOF SECONDARY STRUCTURAL FRAMING PLAN	HNA / AC FILE NO:
DRAWN BY:	DRAWN BY:							GROUP: A / DATE: 09/21/93
CHECKED BY:	CHECKED BY:						DRAWING NUMBER: D93-048747-04	REV. 00



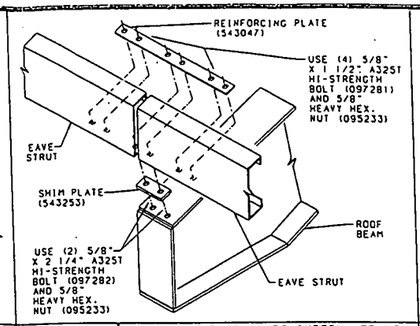
C - SECTION DESIGN INFORMATION					
PART	DEPTH	FLANGE	LIP	THICKNESS	RADIUS
EAVE STRUT 540206 275-4	9 1/2"	3 1/2"	1 1/8"	.098"	5/16"
EAVE STRUT 540241 281-4	9 1/2"	3 1/2"	1 1/8"	.098"	5/16"



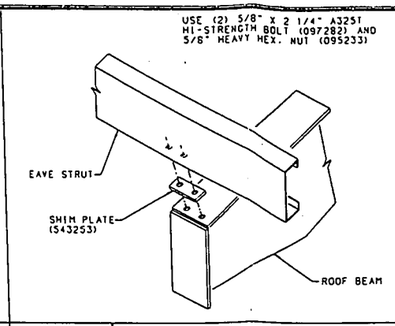
Z - SECTION DESIGN INFORMATION					
PART	DEPTH	FLANGE	LIP	THICKNESS	RADIUS
PURLIN 530642 311-4	9 1/2"	2 3/4"	1 1/16"	.067"	1/4"
PURLIN 530645 317-4	9 1/2"	2 3/4"	1 3/16"	.084"	1/4"



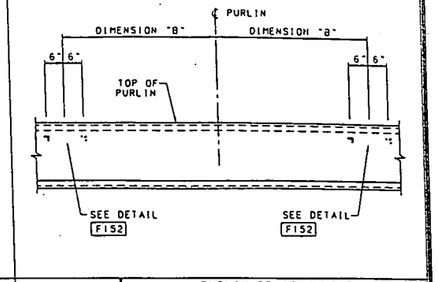
DETAIL F114 — CONTINUOUS SPAN PURLIN CONNECTION END BAY LOCATION - 9 1/2" PURLIN



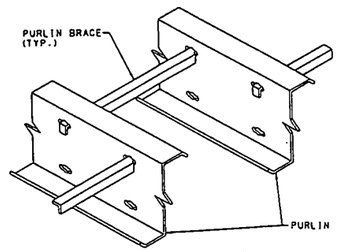
DETAIL F127 — EAVE STRUT CONN. TO INTERM. FRAME STRUT CONNECTION



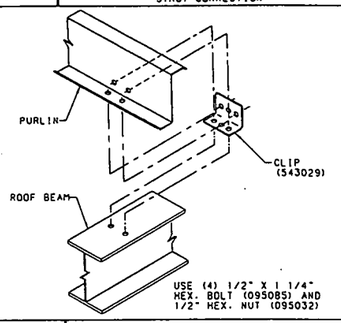
DETAIL F129 — EAVE STRUT CONN. TO ENDWALL FRAME



DETAIL F146 — PURLIN BRACE LAYOUT (2) ROWS TOP - (0) ROWS BOTTOM



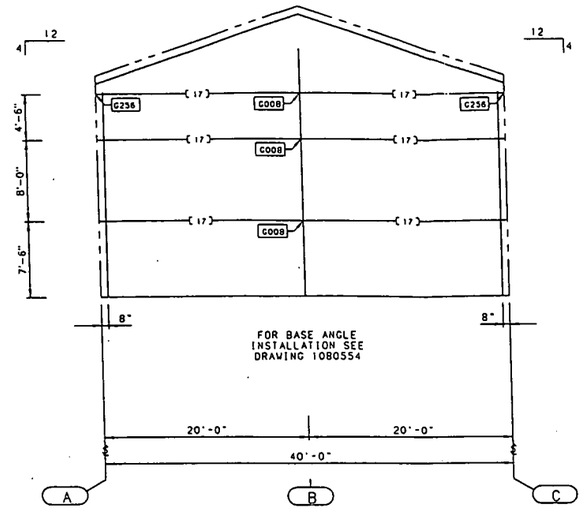
DETAIL F152 — PURLIN BRACE TOP ROW



DETAIL F257 — PURLIN CONNECTION TO EW ROOF BEAM

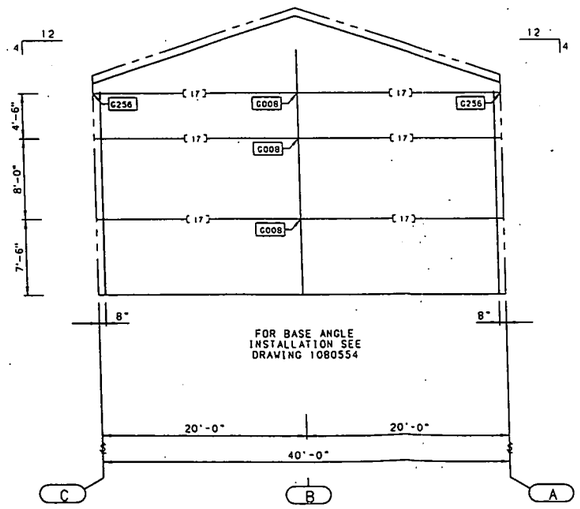
REVISION NO. 1	REVISION NO. 2		BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	HNA	AC FILE NO:
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	L&M CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	ROOF SECONDARY STRUCTURAL DETAIL SHEET	GROUP: A	DATE: 09/21/93
DRAWN BY:	DRAWN BY:	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM					DRAWING NUMBER: D93-048747-04A	REV. 00
CHECKED BY:	CHECKED BY:							

FOR GABLE ANGLE INSTALLATION SEE DRAWING 1080944



UNIT 1 FRONT EW STRUCTURAL ELEVATION AT GRID 1

FOR GABLE ANGLE INSTALLATION SEE DRAWING 1080944



UNIT 1 REAR EW STRUCTURAL ELEVATION AT GRID 4

PART SCHEDULE				
( )	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
17	GIRT	550308 211-2	17'-7 1/4"	

STANDARD NOTES:

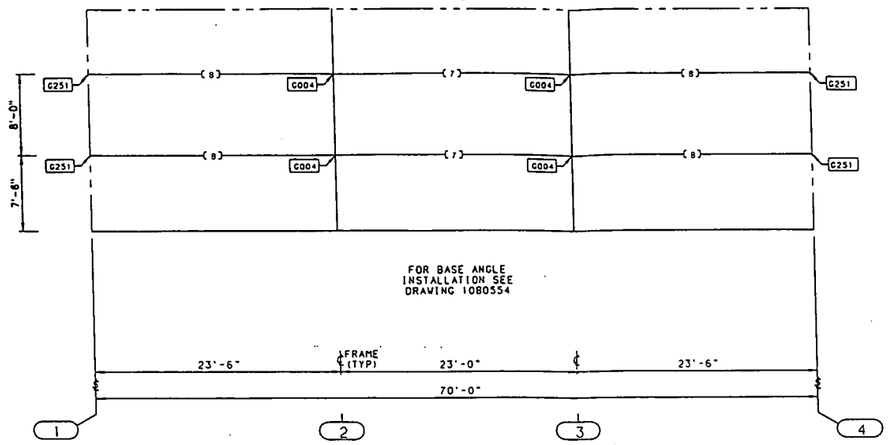
WS0003 DOOR SIDE GIRTS MUST BE INSTALLED WHEN DISTANCE BETWEEN DOOR POST & FRAME (OR EW POST) IS GREATER THAN 22 1/4"

WS0006 FILL ALL OPEN HOLES IN DOOR POST WEBS WITH PLASTIC SNAP-IN PLUGS (097229).

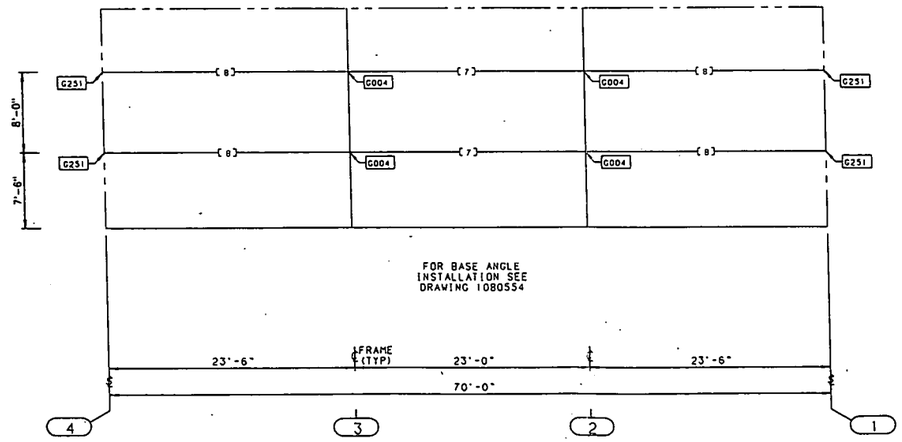
WS0023 I M P O R T A N T
REFER TO PRONTO DETAIL G047 FOR PROPER GIRT ALIGNMENT.

REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22'' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: WALL SECONDARY STRUCTURAL ELEVATION	HNA GROUP: A DRAWING NUMBER: D93-048747-05
DRAWN BY:	DRAWN BY:							AG FILE NO: DATE: 10/04/93 REV. 00
CHECKED BY:	CHECKED BY:							

PART SCHEDULE				
( )	PART NAME	PART NUMBER	PART LENGTH	FIELD WORK ▲
7	PURLIN / GIRT	530635 299-4	24'-11 1/2"	
8	PURLIN / GIRT	530637 305-4	25'-5 1/2"	

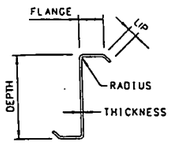


UNIT 1 RIGHT SW STRUCTURAL ELEVATION AT GRID C



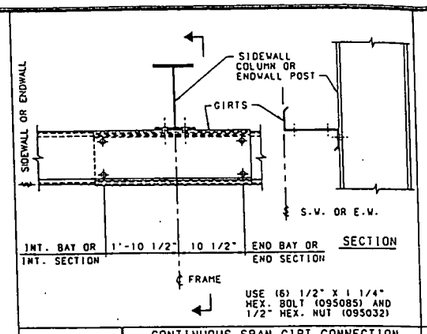
UNIT 1 LEFT SW STRUCTURAL ELEVATION AT GRID A

REVISION NO. 1		REVISION NO. 2		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER:	PROJECT:	BUILDING ORDER DESCRIPTION:	DRAWING TITLE:	HNA	AC FILE NO:
DATE:		DATE:				LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	BELL AEROSPACE NIAGARA FALLS, NY	40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	WALL SECONDARY STRUCTURAL ELEVATION	GROUP: A	DATE: 10/04/93
DRAWN BY:		DRAWN BY:								DRAWING NUMBER: D93-048747-05A	REV. 00
CHECKED BY:		CHECKED BY:									

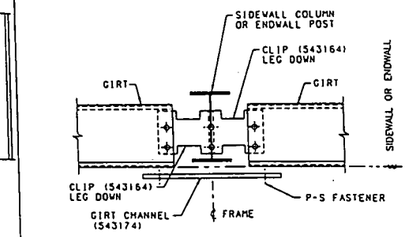


Z - SECTION DESIGN INFORMATION

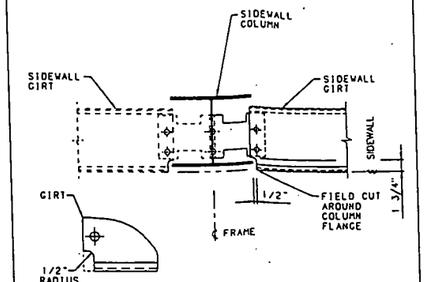
PART	DEPTH	FLANGE	LIP	THICKNESS	RADIUS
GIRT 550308 211-2	9 1/2"	2 3/4"	1 3/16"	.100"	1/4"
PURLIN / GIRT 530635 299-4	8"	2 5/8"	3/4"	.060"	1/4"
PURLIN / GIRT 530637 305-4	8"	2 5/8"	1 1/8"	.070"	1/4"



DETAIL G004 — CONTINUOUS SPAN GIRT CONNECTION END BAY OR SECTION LOCATION

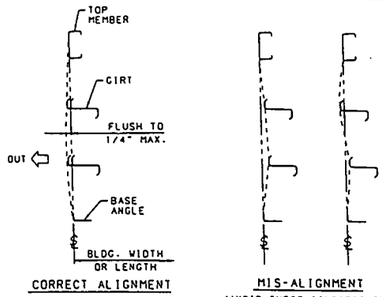


DETAIL G008 — DOUBLE GIRT TO COLUMN CONN.

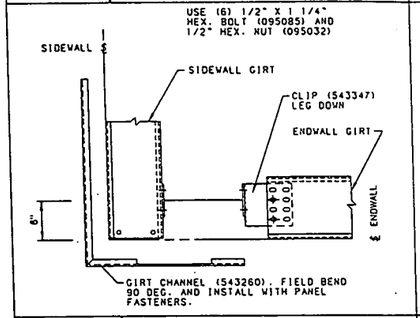


GIRT CUTTING DETAIL

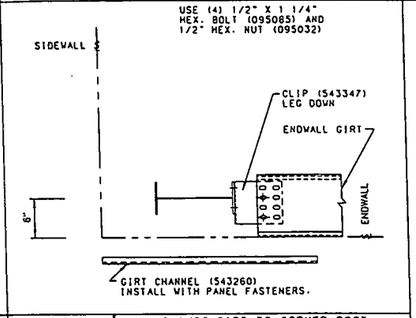
DETAIL G019 — FIELD WORK SIDEWALL GIRT COLUMN FLANGES WIDER THAN 10"



DETAIL G047 — SECONDARY STRUCTURAL ALIGNMENT

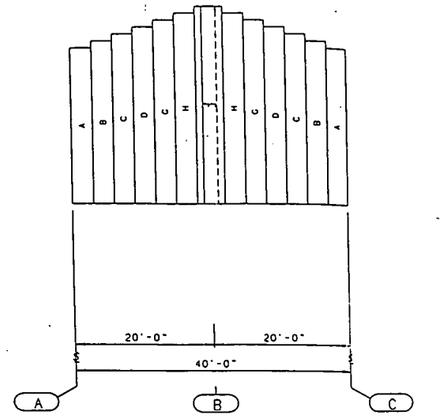


DETAIL G251 — 8" SW & 9 1/2" EW GIRTS TO CORNER POST 6" SETBACK ENDWALL

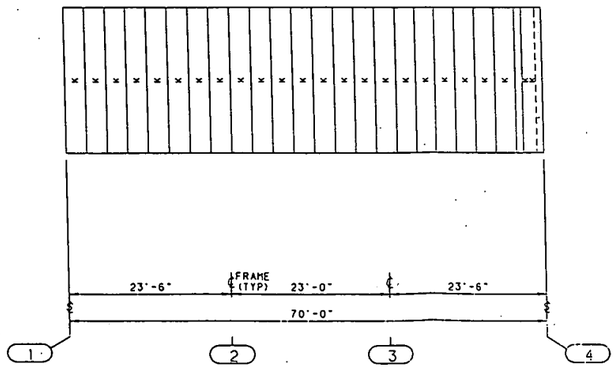


DETAIL G256 — 9 1/2" GIRT TO CORNER POST 6" SETBACK ENDWALL

REVISION NO. 1		REVISION NO. 2								
DATE:		DATE:		BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRO/TO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: WALL SECONDARY STRUCTURAL ELEVATION DETAIL SHEET	HNA GROUP: A DRAWING NUMBER: D93-048747-05B	AG FILE NO: DATE: 10/04/93 REV. 00
DRAWN BY:		DRAWN BY:									
CHECKED BY:		CHECKED BY:									



FRONT ENDWALL PANELING ELEVATION
AT GRID 1



RIGHT SIDEWALL PANELING ELEVATION
AT GRID C

WALL PANEL SCHEDULE

ID	PART NUMBER	EXT. SUFF.	INT. SUFF.	LENGTH	DESCRIPTION
A	570563	199		272-5	SHR1B UNPUNCH SO PNL
B	570563	199		284-5	SHR1B UNPUNCH SO PNL
C	570563	199		296-5	SHR1B UNPUNCH SO PNL
D	570563	199		308-5	SHR1B UNPUNCH SO PNL
G	570563	199		320-5	SHR1B UNPUNCH SO PNL
H	570563	199		332-5	SHR1B UNPUNCH SO PNL
J	570563	199		344-5	SHR1B UNPUNCH SO PNL
K	570561	199		261-2	SHR1B UNPUNCH SO PNL

STANDARD NOTES:

WP0044 FOR GENERAL SHR1B WALL PNL INFO REFER TO THE FOLLOWING DWGS :

D-1080553 - DRAWING INDEX
D-1080556 - WALL PANEL LENGTH CALCULATIONS
D-1080561 - CORNER PANEL AND TRIM INSTALLATION
D-1080562 - GENERAL INSTALLATION - PANELING AND FASTENERS
D-1080563 - PANEL CONNECTION DETAILS
D-1080799 - PANEL SIDELAP FASTENERS INSTALLATION

WP0046 THE DIRECTION OF ERECTION FOR SHADOWRIB WALL PANEL IS LEFT-TO-RIGHT.

IMPORTANT
FIELD TRIM INSULATION SO THAT THERE IS MAXIMUM OF 3" THICKNESS BETWEEN STRUCTURALS AND PANEL CORRUGATIONS. WHEN TRIMMING THE INSULATION, BE CAREFUL NOT TO CUT VAPOR BARRIER.

WP0047 FOR SHADOWRIB OVERHEAD DOOR TRIM INSTALLTION REFER TO DRAWINGS D-1080723 AND D-1080724

WP0052 SHR1B WALL PANEL-TO-PANEL FASTENERS ARE 097364 (1/4 X 3/4 T-30 TORX SELF DRILLING SCREW).

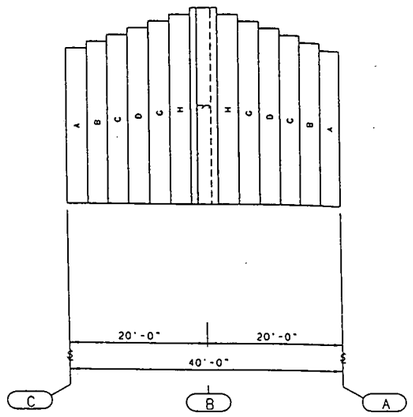
- QUANTITY OF FASTENERS TO INSTALL BETWEEN STRUCTURALS
- - GIRT SPACES 3' AND LESS = 0
- - GIRT SPACES OVER 3' THRU 6' = 1
- - GIRT SPACES OVER 6' = 2
- DO NOT EXCEED 3' BETWEEN SIDELAP FASTENERS

WP0065 SHR1B WALL PANEL-TO-STRUCTURAL TOP/BASE FASTENERS ARE 097365 (1/4 X 1 T-30 TORX SELF DRILLING SCREW).

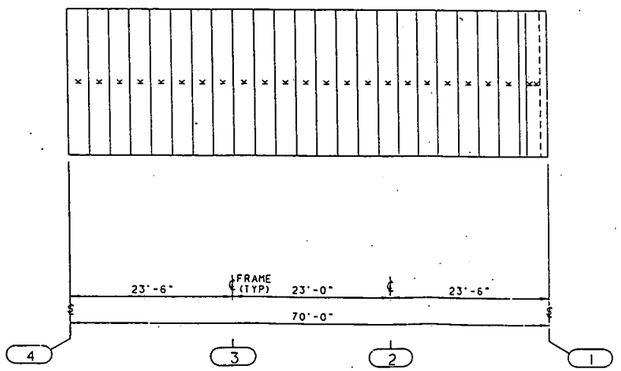
WP0083 SHR1B WALL PANEL-TO-GIRT FASTENERS ARE 097365 (1/4 X 1 T-30 TORX SELF DRILLING SCREW).

REVISION NO. 1	REVISION NO. 2						
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE PRONTO® ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22' LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: WALL PANEL DRAWING	AC FILE NO: GROUP: A DATE: 09/21/93 DRAWING NUMBER: D93-048747-06 REV: 00
DRAWN BY:	DRAWN BY:						
CHECKED BY:	CHECKED BY:						

WALL PANEL SCHEDULE					
ID	PART NUMBER	EXT. SUFF.	INT. SUFF.	LENGTH	DESCRIPTION
A	570563	199		272-5	SHR18 UNPUNCH SO PNL
B	570563	199		284-5	SHR18 UNPUNCH SO PNL
C	570563	199		296-5	SHR18 UNPUNCH SO PNL
D	570563	199		308-5	SHR18 UNPUNCH SO PNL
G	570563	199		320-5	SHR18 UNPUNCH SO PNL
H	570563	199		332-5	SHR18 UNPUNCH SO PNL
J	570563	199		344-5	SHR18 UNPUNCH SO PNL
K	570561	199		261-2	SHR18 UNPUNCH SO PNL

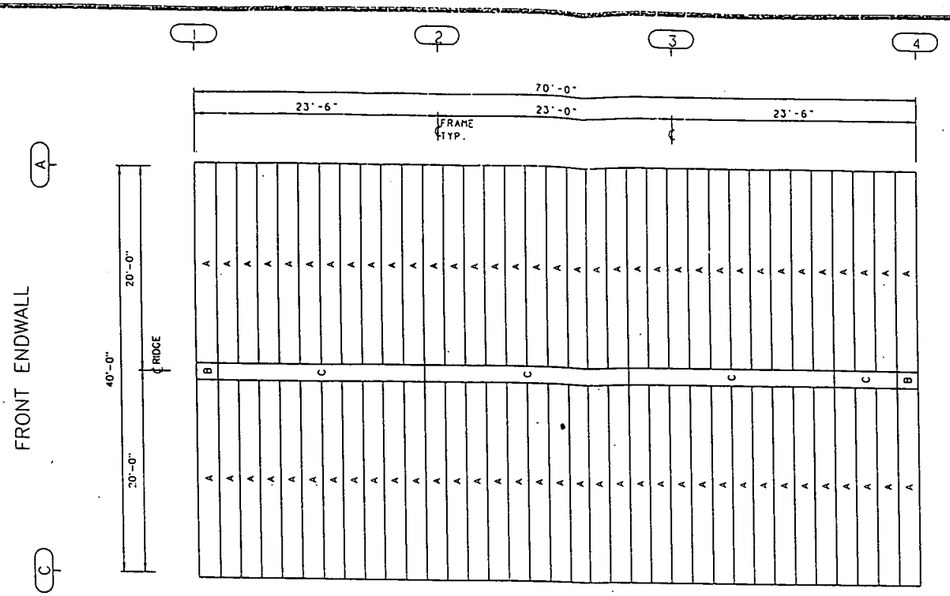


REAR ENDWALL PANELING ELEVATION
AT GRID 4



LEFT SIDEWALL PANELING ELEVATION
AT GRID A

REVISION NO. 1	REVISION NO. 2							
DATE:	DATE:	BUTLER MANUFACTURING COMPANY GENERAL OFFICES-KANSAS CITY, MISSOURI	PRODUCT OF THE TRONO ORDER ENGINEERING SYSTEM	BUILDER: LBM CONSTRUCTION INC. ORCHARD PARK, NEW YO	PROJECT: BELL AEROSPACE NIAGARA FALLS, NY	BUILDING ORDER DESCRIPTION: 40'X70'X22', LRF 35#SL/75MPH NY 88 10#COLLAT	DRAWING TITLE: WALL PANEL DRAWING	AC FILE NO: GROUP: A DATE: 05/21/93 DRAWING NUMBER: D93-048747-06A REV: 00
DRAWN BY:	DRAWN BY:							
CHECKED BY:	CHECKED BY:							



ROOF PANEL SCHEDULE					
ID	PART NUMBER	SUFF.	LENGTH	DESCRIPTION	HOLE TO HOLE
A	560117	042	256-5	MR24 EAVE PANEL ALZN	19'-11 11/32"
B	560173			MR24 RIDGE END COVER	
C	560157	058		MR24 RIDGE COVER	

STANDARD NOTES:

RP0031 REFER TO GENERAL ROOF INDEX DRAWING C-104995 FOR ADDITIONAL ERECTION DRAWING REQUIREMENTS.

REFER TO DWG. B-1080876 AND/OR B-1080877 WHEN FIELD WORK IS REQUIRED FOR NON-STD WIDTH PANELS.

RP0038 W A R N I N G
****
PANELS WITH PROTECTIVE OIL COATING ARE SLIPPERY. PROCEED WITH CAUTION. WIPE CLEAN IF NECESSARY.

RP0046 PANEL CLIP FASTENERS
****
USE SCRUBOLT 097196 (GREEN 3/8 X 1) FOR PANEL CLIP-TO-PURLIN CONNECTIONS.

RP0054 DIRECTION OF ERECTION FOR MR-24 PANELS ON LEFT SLOPE IS FRONT TO REAR OF ROOF SURFACE.

RP0055 DIRECTION OF ERECTION FOR MR-24 PANELS ON RIGHT SLOPE IS REAR TO FRONT OF ROOF SURFACE.

RP0059 MR24 RIDGE COVER IS FURNISHED IN 20' LENGTHS. FIELD CUT THE RIDGE COVER TO LENGTH AS REQUIRED.

RP0062 ROOF PANELS MUST BE ATTACHED TO ALL ROOF STRUCTURALS TO INSURE THE STRUCTURAL INTEGRITY OF THE ROOF. THIS INCLUDES ALL PURLINS ADDED FOR SPECIFIC LOADING CONDITIONS, ETC.

ENOUGH PANEL-TO-STRUCTURAL FASTENERS, CLIPS (IF MR-24/CMR-24) HAVE BEEN FURNISHED FOR ALL ROOF STRUCTURALS.

REVISION NO. 1	REVISION NO. 2							
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DRAWN BY:	DRAWN BY:							GROUP: A DATE: 09/21/93
CHECKED BY:	CHECKED BY:							DRAWING NUMBER: D93-048747-07 REV. 00

APPENDIX A

GOLDER ASSOCIATES INC.
FIELD REPORTS

. IELD REPORT

JOB NO. 933- 9068
PROJECT TDS QA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 9/20/93 TIME IN TIME OUT
WEATHER OVERCAST - 60's
PRESENT AT SITE DCW

13:00 On site - BAT plant. Met at trailer with AL Marzelli (Laidlaw P.M.), discuss project. Crew is laying out saw lines for treatment building foundation. Sawing of asphalt begins at 13:15. Monitoring air for O_2, LEL, H_2S, organics and dust as per plan. Wind direction is determined by orange survey flagging placed on post on the east edge of BAT parking lot bounding Walmore Rd.

15:15 Last two air monitoring events for dust (@ 14:32 = 1070 ug/m^3 and @ 15:10 = 710 ug/m^3) have exceeded limits of 150 ug/m^3* 100' downwind of saw. Shut down saw and consulted A Grasso. After consulting with Golder H+S personnel, he recommended that when monitoring for nuisance dust, the downwind perimeter of the exclusion zone should be considered the downwind BAT property boundary.

15:40 Indicate to saw operator to resume, but he said he was about done for today anyway
16:15 off site.

* This is very conservative - we may wish to increase.

Signed: Dick Welch

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TO: Brian Smith / File

NO. 1

FIELD REPORT

JOB NO. 933-9068
DATE 9/21/93 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER OVERCAST - RAIN - 60's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT TDS
OWNER
CONTRACTOR

7:30 On site - BAT plant

8:00 Remaining cut is made through asphalt. 1st 15 min TWA for particulates at downwind plant boundary meets specs. Asphalt is removed from treatment holding area. (Photos)

11:30 - 12:30 Lunch. Asphalt removal continues until 13:15

13:40 Bill Wertz, Stan Radon (Both NYSDEC) John Devic and I look at two locations for (temporary)? shallow monitoring wells - one on Niagara Mohawk transformer station plot and the second three properties to the North where campers are stored. Final locations were not decided upon.

14:00 Offsite

Signed: Dan Welch

TO: Brian Smith / File

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NO. 2

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 9/22/93 TIME IN TIME OUT
WEATHER SUN - 70's
PRESENT AT SITE DCW

13:30 On site - BAT plant. Crew is digging foundation for treatment plant. Air monitoring for all parameters: no hits. Snapped photos of excavation.

15:15 Backhoe excavator breaks down - crew repairs it by 16:00 - then they leave. Discuss design issues with A. Marzelli until 17:00 then offsite.

Signed: Di Welt

TO: Brian Smith / File

NO. 3

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FIELD REPORT

JOB NO. 933 9068 | DATE 9/30/93 TIME IN | TIME OUT
PROJECT TDS COA ON-SITE | WEATHER Sun - 50's
LOCATION WHEATFIELD | PRESENT AT SITE DCV
CLIENT
OWNER
CONTRACTOR

13:30 On site - BAT Plant. Crew is building concrete forms I discuss / review sub mittals with A. Marzelli

14:00 I pace off surveyed locations of wells and trench alignment. Locations look correct, but some are problematic. (1) The East gaurd house sliding gate passes directly over DW-11 when open. DW-11 should be moved ≈ 8' East. (2) At the first bend in the trench alignment South of DW-10, a catch basin is in the way. Al Marzelli plans on moving the basin several feet to the West to clear the trench. (3) At the bend in the trench alignment South of 87-11(1) is a monitoring well (B-1)? The E-W section of trench nearby should be relocated several feet to the north to clear it. (4) EW-7 is directly in front of Nutall Gear Company's front door. They will not like this once construction starts as this entire area (front yard) will be an exclusion zone. Moving the vault East more towards the parking lot will allow them to use their door.

Signed: [signature]

TO: Brian Smith / File

NO. 4

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/4/93 TIME IN TIME OUT
WEATHER Sun to RAIN - 50's
PRESENT AT SITE DCW

7:50 On site - BAT plant - Calibrate Instruments Crew is building forms. Kevin White (Laidlaw) reports that Ben Siragosa (Penndrill) and his crew will arrive about 8:30.

9:00 Penndrill crew arrives and decons equipment - sets up to auger DW-12

11:40 Augering begins on DW-12 with 6¼ ID augers. Refusal at approx 16' bgs. Break for lunch at 12:05

Driller - Bernie

12:55 Resume augering with 12¼ ID augers - refusal at ≈ 16' bgs at 1:55. Crew set temporary 15-inch casing to control drilling air circulation.

16:00 Offsite

Signed: Dave Welch

TO: Brian Smith / File

NO. 5

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FIELD REPORT

JOB NO. 933-9068
DATE 10/6/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER P. Sunny - 50's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:45 On site - BAT plant - calibration ✓ instrument.

The 10" overburden casing delivered late yesterday is PVC, not polypropylene as specified. No submittals have been received for this pipe, though they were requested. Ben Siracuse (Penndrill) is contacted to expedite the correct pipe - the drillers will need it within the next few days. Drillers are setting up to cut casing socket at DW-12 with a 14" tricone bit.

10:35 Socket reaming begins. It is soon apparent that there is insufficient air to bring the cuttings up. Driller calls office for larger hoses and compressor at 11:00

11:15 Socket reaming resumes. Cuttings will have to be bailed out of the hole, as they are not being blown out.

12:00 - 13:00 Lunch
Reaming resumes. Stan Radon of NYSDEC stops by. He would like advance notice of coring dates, as he wishes to observe coring. All else O.K.

Signed: Dan Doh

TO: Brian Smith / File

NO. 6

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FIELD REPORT

JOB NO. 933-9068
DATE 10/5/93 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER P. Sunny - 50's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

13:35 Reaming complete at 19 ft bgs. Drillers break down equipment, bail out hole of drill cuttings. Penndrill calls, poly pipe will arrive tomorrow morning.

J Devic stops by - if drillers are going to use a large poly tank to contain drillwater, he needs to know in advance.

15:60 Drillers move rig to EW-8. start augering with 6¼ augers. Bedrock at 13 ft bgs. Auger to same depth with 12¼ augers. Larger compressor and hoses arrive - ready for tomorrow.

16:00 Offsite

Signed: Dave Wahr

TO: Brian Smith / File

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NO. 6

FIELD REPORT

JOB NO. 933-9068
DATE 10/6/93 TIME IN TIME OUT
PROJECT TDS CGA ON-SITE
WEATHER Sun 60's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

Page 1 of 2

7:50 On site BAT plant - Calibration ✓ of instruments - O.K. Drillers auger casing socket of EW-8 to 16 ft bgs. Drillers decon, switch bits while awaiting polypropylene casing. *Treatment building walls poured today*

I take water levels in several (20) wells near the on-site system for performance monitoring. (8:55 to 10:32)

10:45 Check over location of EW-7 for new location options. Set up meeting with Al Marzelli and J. Devic this afternoon at well site #1 so the well location can be finalized

12:30 Polypropylene casing (10") arrives - it is not stamped Sch 40. Paperwork does not indicate a schedule. I tell Ben. Siracusa it will not be approved if the pipe is not the equivalent of Sch 40. He understands that and will submit the proper paperwork to Al Marzelli. The pipe looks good to me, so A. Carasso conditionally approves its use for today's installation.

Signed: Dan Welch

TO: Brian Smith / File

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NO. 7

FIELD REPORT

JOB NO. 933- 9068 | DATE 10/6/93 TIME IN . TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER

LOCATION WHEAT FIELD | PRESENT AT SITE DCW

CLIENT

OWNER | Page 2 of 2

CONTRACTOR

13:30 A. Marzelli, J. Devic, J. Winarski and I go to location of EW-7 (In front of Nuthall gear) to discuss location of vault. J.D. and J.W. favor moving vault away from door either approx. 30 ft West or approx 100 ft East. A.M. would prefer not to move it at all. A. Gresso and I think the 30 ft West option is best.* A final decision will be made tomorrow.

13:45 Drillers grout casing in EW-8. Casing is 16.4 ft long with a stickup of 0.8 ft. 18 bags of grout were used. Photo.

16:00 Offsite → paperwork.

* Later discussions in the office, involving modeling considerations, alter this.

Signed: Dave Welch

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TO:

NO. 7

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/7/93 TIME IN TIME OUT
WEATHER Sun 70's
PRESENT AT SITE DCW

Page 1/2

7:40 On site. BAT plant. Instrument calibration ✓ - O.K.

8:30 Drillers grout DW-12. Casing is 19.5' long (16.4 Ft plus temporary extension of 3.1 Ft). Stickup is 0.9 Ft. Seventeen bags of grout used. Drillers clean up. Will move to either EW-7 or DW-11 next.

Cars need to be moved at both EW-7 and DW-11 locations. I contact S. Devic - he starts the process.

10:00 A. Corasso calls and indicates B. Smith has some input yet on the EW-7 location - DO NOT move there next.

10:30 BAT cable locator finds unexpected signals in the new DW-11 location, it must be moved again. Drillers claim standby time while waiting for locator - parked cars to be moved. (They can move nowhere else). Final position cleared for DW-11 is approx. 9 Ft East of original position under the gate.

11:30 Drillers get the go-ahead - set up at DW-11.

Signed: Dave Welch

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TO: Brian Smith / File

NO. 8

FIELD REPORT

JOB NO. 933- 9068
DATE 10/7/93 TIME IN TIME OUT
PROJECT TDS CCA ON-SITE
WEATHER
LOCATION WHEATFIELD
PRESENT AT SITE
CLIENT
OWNER
Page 2/2
CONTRACTOR

12:00- 12:45 Lunch

Drillers begin to auger DW-11. Soil is sandier that the previous two borings. Bedrock at 14.5 ft bgs. No air monitoring hits at planned stations - actually inserting OVM into borehole gives a max reading of 9 ppm. Drillers replace auger teeth and continue (try to cut casing socket)

16:00 Drillers offsite

16:30 Offsite → paperwork.

Signed: David Welch

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TO: Brian Smith / File

NO. 8

FIELD REPORT

JOB NO. 933-9068
DATE 10/8/93 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER Sun - 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:30 On site BAT plant - calibration ✓ - O.K. Drillers switch bits to cut casing socket at DW-11. Start cutting at 8:00.

9:45 Casing socket cut to 18.0 ft bgs with 14" tricone bit. No water came up with drill air return. Drillers grout up casing - which is 19.0 ft long (16.4' + temporary 2.6') with a stick up of 1.0 ft. 18 bags of grout used.

11:00 Stan Radon of NYSDEC stops by - all O.K. - wishes to see coring. We will probably core Wed. or Thurs. next week. in addition to Monday (a holiday for NYSDEC)

12:00 - 13:00 Lunch
Drillers decon equipment - switch bits - prepare to core DW-11 Monday

13:30 Offsite - paperwork until 16:00

Signed: Dave Welch

TO: Brian Smith / File

NO. 9

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FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/11/93 TIME IN TIME OUT
WEATHER SUN- 50's
PRESENT AT SITE DCW

7:30 On site - BAT plant Instrument calibration ✓ - O.K.
Drillers prepare to core DW-11

9:05 Coring run one starts - "HQ" size bit.

11:00 Air pressure from coring forced water and air up well 87-05(1), which is located approx. 25' from DW-11. Drilling ceased, and dry cement was placed around 87-05(1)'s casing to sop up the estimated five gallons of spillage. Air monitoring indicated no action levels for organic vapors were exceeded. A. Crosse and S. Devic notified. Well was plugged with 2" sealing plug and covered with an overturned 55 gallon drum.

12:00 - 12:45 Lunch
Coring resumes. Core bit jams on rod and was destroyed trying to remove it. Drillers switch to an "N" size bit and continue. Hole bottomed at 30.5 ft bgs. for a one foot socket into zone 2.

16:00 Offsite → paperwork until 17:00

Signed: Dave Wake

TO: Brian Smith / File

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NO. 10

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/12/93 TIME IN TIME OUT
WEATHER Cloudy 50's
PRESENT AT SITE DCW

7:40 On site - BAT plant. Instrument calibration ✓ - O.K. Drillers set up to ream DW-11 with a 9 5/8 roller cone bit. Water level before reaming was 13 Ft bgs. Well volume = 70 gallons.

8:30 Reaming begins on DW-11

9:30 OVM readings in Exclusion Zone exceed action levels. Establish level "C" respiratory protection level in Exclusion Zone. Continuous monitoring at downwind perimeter of exclusion zone has been in effect since 8:30.

9:45 OVM readings downwind (N) of Exclusion Zone exceed action levels. Drilling is shut down. A Grasso and S. Devic notified. Gaurd leaves gaurd house as he is frightened of the respirators. Immediately after drilling ceases, OVM readings downwind of Exclusion Zone fall to zero. Within 1 min levels near top of casing fall to zero

11:00 A. Grasso approves drilling last few feet using water instead of air. Driller set up to ream with water. Water supply is from BAT plant.

Signed: Dan Welch

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TO: Brian Smith / File

NO. 11

FIELD REPORT

JOB NO. 933-9068
DATE 10/12/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
Page 2/2
CONTRACTOR

11:45 Attempt is made ream DW-11 - mud pump not working properly (hydraulics).

12:15-12:45 Lunch

13:00 Reaming of DW-11 with water starts.

13:40 Reaming of DW-11 complete at 30.5 ft bgs. Approx 200 gallons of water (100 fresh - 100 from drilling) lost to formation. This is roughly equal to the amount produced while air drilling.

Well is bailed to clear cuttings - 120 gal. removed.

15:30 Well is pumped dry with a submersible pump to perform rising head well test. - 70 gal. removed.

16:30 Recovery test complete. Offsite → paperwork until 17:30

Signed: David Wuk

TO: Brian Smith / File

NO. 11

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FIELD REPORT

JOB NO. 933-9068
DATE 10/13/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER Sun 40's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:45 On site - BAT plant. Instrument calibration ✓ - O.K
Drillers cleaning rig - tools

10:15 Drillers relocate rig to EW-7 - set up to auger well.
Rig hydraulics give trouble - downtime.

13:00 Hydraulics repaired

13:15 - 1400 Lunch
Augering of EW-7 starts with 6¼" ID augers.
Bedrock at 13 Ft bgs. Casing socket cut with augers to 16 Ft bgs.

16:00 Offsite → paperwork in office.

Signed: Dick Wehr

TO: Brian Smith / File

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NO. 12

FIELD REPORT

JOB NO. 933 9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/14/93 TIME IN TIME OUT
WEATHER Sun 30's
PRESENT AT SITE DCW

9:00 On site BAT plant - Instrument calibration ✓ O.K. Drillers have been on downtime - truck with grout mixer attached wouldn't start.

9:30 Truck starts (new batteries) - drillers set up to grout casing in EW-7. Casing is 16.4 ft long, stickup is 0.6 feet. Add water inside of casing to prevent collapse from grout pressure. 20 bags of grout used.

11:45 Grouting complete - Seal top of well. Relocate rig to EW-8 for coring

12:00 - 12:45 Lunch
Prep rig to core

14:20 N size coring starts on EW-8. Core barrel blocks off once

16:00 Coring complete for day at 27 ft bgs. Offsite → Paperwork at office.

Signed: Dan Wahl

TO: Brian Smith / File

NO. 13

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FIELD REPORT

JOB NO. 933-9068 | DATE 10/15/93 | TIME IN | TIME OUT

PROJECT TDS CCA ON-SITE | WEATHER OVERCAST 50's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

7:30 On site - BAT plant. Instrument calibration ✓ - O.K. Drillers set up to finish coring EW-8

7:55 N-size coring begins

8:40 Core barrel jams in bore and snaps off drilling sub. Downtime. Drillers free the rods - will ream the hole to the depth cored so far while repairing sub.

10:15 9⅝-inch reaming of EW-8 begins.

12:00 Reaming complete. Lunch until 12:45 then drillers set up to core last few feet. Hole is producing very little water.

13:30 Coring resumes

14:30 Coring complete at 32.4 Ft bgs. Drillers set up to ream last core run.

14:45 Drillers ream - hole bottomed at 33.0 Ft bgs by 15:30. Drillers clean up.

16:00 Offsite

Signed: Dale Wick

TO: Brian Smith / File

NO. 14

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FIELD REPORT

JOB NO. 933 9068
PROJECT TDS COA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/15/93 TIME IN TIME OUT
WEATHER OVERCAST 60's
PRESENT AT SITE DCW

7:30 On site, BAT plant Instruments calibrated. Drillers prepping rig to move to DW-12, which is to be cored. The rising head test planned for this morning on EW-8 was postponed due to equipment malfunction.

10:15 Coring begins on DW-12. Approx. 100 gal water produced.

12:00 Coring complete at 31.8 ft bgs. Lunch until 12:45 Drillers set up to ream the well.

13:15 9 5/8 reaming of DW-12 begins.

14:50 Reaming complete at 31.5 ft bgs. During the last foot of reaming the OVM started to indicate VOCs at the mud pit outlet - max 17 ppm. Levels of VOCs stayed below action levels (5 ppm) in the BZ and downwind of the EZ. Approximately 700 gallons of water produced during reaming.

Drillers clean up.

16:00 offsite

Signed: David Welch

TO: Brian Smith / File

NO. 15

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FIELD REPORT

JOB NO. 933-9068
DATE 10/19/93 TIME IN TIME OUT
PROJECT TDS COR ON-SITE
WEATHER OVERCAST - 50's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:40 On site BAT plant. Instrument calibration ✓ O.K. Drillers relocate rig to EW-7 and set up to core it.

8:40 Coreing begins at EW-7.

10:30 Core runs 1 and 2 complete when core barrel jams in hole and snaps off rod threads. Drive head of rig damaged trying to unstick the rods. Downtime for repairs

11:30 Original rig (CME-85) under repair while 2nd rig is set up to free the drill rods.

12:00 - 12:45 Lunch
Attempts to free the drill stem continue.

15:00 Core barrel free - 3rd core run is logged.

15:30 Offsite - paperwork until 16:45

Signed: Dan Wels

TO: Brian Smith / File

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NO. 16

FIELD REPORT

JOB NO. 933 9068
PROJECT TDS CGA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/26/93 TIME IN TIME OUT
WEATHER Sun 50's
PRESENT AT SITE DCW

7:40 On site BAT plant. Instrument calibration ✓ - O.K. Drillers prepare to ream the hole to the depth previously cored to prevent further jams.

8:45 9⅝" reaming begins on EW-7

11:30 Coring begins on EW-7

12:15 Lunch until 13:00
Examine core - A marker bed is deeper than anticipated - drillers make one more run of ≈ 3.5 Ft. Bore produces less than 10 gallons of water during drilling so far. Coring depth 35.5'.

14:00 Reaming begins - producing more water now. Total ream depth 35.0' - Total water 100 gallons.

16:00 Reaming complete - offsite

Signed: Dan Wilson

TO: Brian Smith / File

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NO. 17

FIELD REPORT

JOB NO. 933-9068 DATE 10/21/93 TIME IN TIME OUT

PROJECT TDS CQA ON-SITE WEATHER Sun-Windy -50's

LOCATION WHEATFIELD PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

7:45 On site BAT plant - Instrument calibration ✓ - O.K. Drillers blow clean EW-7, clean rig

10:00 Meet with J. Devic, G. Rifenburg and other ARC officials to familiarize them with our health and safety plan. We were issued badges and told the gate must be kept locked.

10:30 Rig is move to ARC area. Augering of DW-9 starts. Bedrock at 12 ft bgs - casing socket cut with augers to 15.5 ft bgs.

12:00 - 12:45 Lunch

Crew grouts DW-9. 10" Casing is 16.4 ft long with a stickup of 0.8 ft.

15:00 Drillers move to DW-10 and start augering (12¼" ID) Bedrock at 14 ft bgs, socket cut with augers to 17.5 ft bgs.

16:00 offsite - Paperwork until 17:00

Signed: Dave Wolf

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TO: Brian Smith / File

NO. 18

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/22/93 TIME IN TIME OUT
WEATHER Partly Cloudy - 40's
PRESENT AT SITE DCW

7:35 On site BAT plant - ARC area. Instrument √ - O.K. Drillers resume augering DW-10 with 12¼" ID HSA.

8:05 Dust meter battery dies without warning. No visible dust is being produced.

9:00 Casing is grouted on DW-10. Casing is 18.4 ft long (16.4' + 2' temporary extension) Stickup is 0.5 ft.

10:00 Stan Radon of NYSDEC stops by. Told him what was happening currently. All looks O.K. to him. Drillers clean rig after augering and relocate to DW-9 for coring.

12:00 - 12:45 Lunch
Coring starts on DW-9

16:00 Coring ceases for the day - drillers offsite

15:30 Offsite - paperwork until 16:30

Signed: David Wohn

TO: Brian Smith / File

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NO. 19

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/25/93 TIME IN TIME OUT
WEATHER Sun 50's
PRESENT AT SITE DCW

7:40 On site, ARC area. Instrument √ - O.K.
Drillers preparing 10" downhole hammer for reaming DW-9

G. Prucha (GAI) performing rising head tests on wells DW-12, EW-7 and EW-8.

9:00 Reaming begins on DW-9. Rock is soft - hole caves slightly. Core run 2 starts at 10:10, logged and reamed at 11:00.

12:00 - 12:45 Lunch
Last core run begins on DW-9

14:00 Final reaming begins - making good water.

14:20 Reaming complete at 31.0 ft. Total water produced during drilling = approx. 450 gallons. Drillers set up on DW-10.

15:30 Drillers ream cement out of DW-10

16:10 Reaming complete - ready to core - offsite Rising head paperwork until 18:30

Signed: David Welch

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TO: Brian Smith / File

NO. 20

FIELD REPORT

JOB NO. 933 9068 | DATE 10/26/93 TIME IN . TIME OUT
PROJECT TDS CGA ON-SITE | WEATHER Sun - 60°
LOCATION WHEATFIELD | PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:45 On site - BAT plant. Instrument calibration √ - O.K.

8:00 Coring begins on DW-10. Increasing levels of VOCs are detected as coring progresses. The well is producing more water than the other five wells did during drilling, having made approx. 600 gallons by 10:00 Wind gradually shifts from West to Northeast.

10:30 Drillers pause to set up pump to deal with increasing amounts of drill water.

12:00 - 12:45 Lunch
Coring resumes but soon ceases because all available drums and the tank in building 70 are full. Most of this water was produced today. Drillers purchase new drums.

14:15 Drums arrive - reaming resumes

15:00 Rig breaks down - drillers work to repair it - it will not be ready until tomorrow. Approx 1500 gallons of water produced today. Discuss project with A. Marzelli until 15:45 - Offsite - Paperwork until 17:00

Signed: Dirk Wahl

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TO: Brian Smith / File

NO. 21

FIELD REPORT

JOB NO. 933-7068
DATE 10/27/93 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER OVERCAST - 50's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:30 On site BAT plant. Instrument calibration ✓ - O.K. Rig is still down - parts will arrive this morning. Drill crew cleans up.

9:45 Parts arrive - crew assembles rig. I run rising head test on well 87-18(1) (near EW-7) I bail approx. 8 gallons in 10 min. The water level recovers to static faster than I can measure it.

11:20 Rig is repaired - final ream starts on DW-10 Reaming is complete at 33.5 ft bgs. Drillers prep. to move to DW-11 to blow it clean.

12:00 - 13:00 Lunch
Drillers blow DW-11 clean - some rock debris does surface. Volatile emissions did not exceed action levels due to a stiff breeze. Drillers clean large rig and demobilize it. A smaller rig is on site to install the temporary monitoring wells and the new EW-7 if necessary.

16:00 Off site after discussing progress with A. Grasso / B. Marcelle

Signed: Dave Wick

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TO: Brian Smith / File

NO. 22

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 10/28/93 TIME IN TIME OUT
WEATHER OVERCAST - 40's
PRESENT AT SITE DCW

7:30 On site BAT plant. Instrument calibration ✓ O.K. Drillers move rig to new location of EW-7, which I term EW-7B. The well is approx 100 ft east of existing well EW-7 and approx 18 ft east of 87-18(1).

9:00 Augering with 12¼-in ID HSA begins at EW-7B

11:00 Augering complete at 14.3 ft bgs. Drillers set up to cut casing socket with aid of 10-in downhole hammer.

11:30 - 12:15 Lunch
Socket cutting continues

14:30 Guide rod snaps on rig - drillers stop to weld it.

15:00 Rig repaired - socket completed at 16.3 ft bgs. Drillers prepare materials to set casing

16:00 Off site - paperwork until 17:00

Signed: Dale Wahl

TO: Brian Smith / File

NO. 23

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FIELD REPORT

JOB NO. 933-9068
DATE 10/29/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST 50's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:30 On site BAT plant Calibrate instruments. Drillers obtaining water to grout EW-7B

Casing is 17 Ft long with a 0.8 Ft stickup 18 Bags of grout used. Casing is grouted from 8:30 to 10:30. Discuss design details. Figure trench slopes until 12:00.

12:00 - 13:00 Lunch
Offsite 13:30 - Paperwork until 15:00

Signed: Dave Welsh

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TO: Brian Smith / File

NO. 24

FIELD REPOR

JOB NO. 933-9068 | DATE 11/1/93 | TIME IN | TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER SNOW - 30's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

7:40 On site - BAT plant. Instrument calibration ✓ - O.K. Vacuum truck is on-site, drillers move drill water drums from ARC area to building 70.

11:00 Drum moving complete. Drillers set up to ream first ten feet of EW-7B. This section will not be cored because of the close proximity of MW87-18(1) allowing good depth control.

11.30 - 12:15 Lunch

12:40 10" downhole hammer reaming begins on EW-7B

15:30 Reaming complete at 26 Ft bgs. Coring will proceed to 31 ft bgs. Bore is blown clean. Talked with A. Marzell / paperwork until 16:30

16:30 Offsite

Not much water produced during reaming

Signed: Dan Wik

TO: Brian Smith / File

NO. 25

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FIELD REPORT

JOB NO. 933 9068 | DATE 11/2/93 TIME IN | TIME OUT
PROJECT TDS CQA ON-SITE | WEATHER SUN - 40's
LOCATION WHEAT FIELD | PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:40 On site - BAT plant Instrument calibration ✓ - O.K. Drillers prepare to core EW-7B

9:30 Coring begins - 5 foot run complete at 31.0 Ft bgs by 9:50. Run 2 is required.

11:30 - 12:15 Lunch
The 10-inch downhole hammering of the two runs cored today is complete at 32.0 Ft bgs by 13:30. Approx 100 gallons of water / cuttings produced. Drillers clean up and decon rig for overburden drilling.

14:45 J. Devic and I take four soil samples at 5-inch depth, two at each of the two locations of the new overburden monitoring wells. We will OVM headspace analyze them tomorrow.

15:30 Offsite - paperwork until 17:00

Signed: Dave Wik

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TO: Brian Smith / File

NO. 26

FIELD REPORT

JOB NO. 933-9068 | DATE 1/3/93 TIME IN | TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER RAIN - 40's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

7:30 On site BAT plant. Instrument calibration ✓ - O.K. Plans to install overburden monitoring wells east of Walmore Rd. today are changed as utilities are not yet completely marked. Drillers set up to perform rising head tests on EW-7B, DW-9 and DW-10. Testing at EW-7B begins at approx. 9:00

11:30 Lunch until 12:15

14:00 Rising head tests complete on EW-7B, DW-9 and DW-10. Offsite to input test data until 16:30

Signed: Dave Wilson

TO: Brian Smith / File

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NO. 27

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/4/93 TIME IN TIME OUT
WEATHER OVERCAST - 50's
PRESENT AT SITE DCW

7:40 On site 6639 Walmore Rd. Monitoring well 93-04(0) drilled and installed by 12:00. Stan Radon of NYSDEC and Matt Forcucci of NYSDOH were present during most of this work. No volatiles detected during air / headspace monitoring.

12:00 - 12:45 Lunch
Rig is cleaned and relocated to 6677 Walmore Rd. Monitoring well 93-05(0) drilled and installed by 16:45. No volatiles detected with OVM. Yard was rutted during drilling which was brought to the attention of J. Doric and A. Marzelli

16:50 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

NO. 28

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FIELD REPORT

JOB NO. 933-9068
DATE 11/5/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER RAIN 50's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:50 On site - BAT plant
Discuss with A. Marzelli, Matt Klethke (surveyor) and Randy Lawrence (pipe installation foreman) about final plans for pipe grades and locations of pump-out ports. Emphasize the need for timely copies of all survey data

9:30 Offsite - paperwork until 12:00

Signed: Dirk Wahl

TO: Brian Smith / File

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NO. 29

FIELD REPORT

JOB NO. 933-9068 | DATE 11/8/93 TIME IN | TIME OUT
PROJECT TDJ COA ON-SITE | WEATHER SUN - 40°
LOCATION WHEATFIELD | PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

9:00 On site BAT plant to develop wells 93-04(o) and 93-05(o) 93-05(o) is very silty and turbid. Bailed six gallons until dry. 93-04(o) is also very silty and turbid. Bail five gallons until dry. Move water to building 70.

11:30 Private paving contractor starts moving soil with a backhoe near rutted area by 93-05(o) - 6677 Walmore. It appears they are installing a driveway - not remediating the ruts.

12:00 - 13:00 Lunch
Take water levels at the two wells, both have recovered more than half way.

14:05 93-05(o) bailed dry again. Parameters reasonably stable but well is very silty. Composited surface sample from four locations give no indications of VOCs on OVM.

14:20 93-04(o) bailed dry again. Same findings as above for parameters and OVM readings.

15:00 Offsite - Paperwork until 16:30

Signed: David Wuh

TO: Brian Smith / File

NO. 30

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FIELD REPORT

JOB NO. 933-9068
DATE 11/9/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SUN - 40's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

7:50 On site - BAT plant to continue development of new wells. Treatment building steelwork has arrived on site.

9:30 Both wells 93-04(0) and 93-05(0) bailed dry (after surging) - about 5 gallons produced per wells. Wells fully recovered from yesterdays bailing.

Measure steel dimensions of Butler building. Roof and side beams and purloins O.K. Erected steel follows plans (photo)

12:00 - 13:00 Lunch

Bail 93-04(0) and 93-05(0) dry once again. They are clearing but still contain quite a bit of silt / fine sand. OVM shows no response to today's composited surface samples.

14:30 Offsite - paperwork until 15:30

Signed: Dave Wohn

TO: Brian Smith / File

NO. 31

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FIELD REPORT

JOB NO. 933-9068 | DATE 11/10/93 TIME IN | TIME OUT

PROJECT TDS C01 ON-SITE | WEATHER SUN 40's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

8:00 On site BAT plant. Treatment plant steel framing continues to be erected.

8:30 93-05(0) surged and bailed dry. Well is still quite silty.

9:10 93-04(0) surged and bailed dry. Wel is still silty

Obtain number punch from J Devic to stamp ID #5 on 93-04(0) and 93-05(0).

11:00 - 12:00 Observe steel erection / Field reports.

12:00 - 13:00 Lunch

Bail 93-04(0) and 93-05(0) dry again. Composite surface samples for each well give no response on OVM (headspace)

14:30 Offsite - paperwork until 16:00

Signed: Dave Welch

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TO: Brian Smith / File

NO. 32

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COX ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/4/93 TIME IN TIME OUT
WEATHER OVERCAST 50's
PRESENT AT SITE DCW

8:00 On site BAT plant. Treatment plant steel erection continues. Excavations for vaults 7 and 8 begin.

Monitoring wells 93-05(0) and 93-04(0) surged and bailed dry. Both wells are silty but temp., pH, conductivity and redox potential are stable. No OVM hits on surface soil composits.

12:00 - 13:00
Take photos of building, EW-7 and EW-8 excavations and the work near MW 93-05(0) by the property owners.

13:30 Take 5 gallon bucket sample of 1A stone and deliver to lab for particle size and min/max density tests.

Signed: Dan Wilk

TO: Brian Smith / File

NO. 33

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/12/93 TIME IN TIME OUT
WEATHER OVERCAST 50's
PRESENT AT SITE DCW

9:00 On site. BAT plant. Plan is to purge and sample wells 93-04(0) and 93-05(0) today. Vaults 7 and 8 are also to be installed.

9:30 Immediately after I start to purge 93-05(0) a bulldozer arrives. The operator explains that the topsoil is to be removed from the front half of the yard around the well and a gravel parking lot installed. I doubt we should sample this well today and so inform A. Grasso and J. Davis

10:30 Decision is made to outwait the workers and sample today. I purge both wells - working around the dozer operator who is cooperative.

11:15 Vault 7 installed. Dimensions O.K. 5 gallon bucket of bentonite power placed around 10" casing. Vault top approx. 1.2 ft above ground surface.

12:00 - 13:00
Vault 8 installed - bentonite placed as above. Vault top approx 0.1 ft above ground surface. Wells 93-04(0) and 93-05(0) sampled today. Stan Radon of NYSDEC took sample splits. Offsite - Paperwork until 16:00

Signed: Dan Wh

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TO: Brian Smith / File

NO. 34

FIELD REPORT

JOB NO. 933-9008
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/15/93 TIME IN TIME OUT
WEATHER Overcast 45°-50° 10-20mph SW
PRESENT AT SITE JPR

1000 On site - BAT plant
I spoke with A. Marzelli at 0845 about the work plan for the day. A. Marzelli said that work will continue on the building and that the pipe for the system will not be delivered until 11/22/93.
On Site at 1000 - A. Marzelli repeated what we discussed earlier about plans for the day

Holcombe continuing work on the building but is not putting up sheeting because of high winds.

Concrete vaults that were previously placed were being water proofed

1200 OFF site - Paperwork until 1500

Signed: Jonathan P. Riggs

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TO: Brian Smith / File

NO. 35

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COAL ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/16/93 TIME IN TIME OUT
WEATHER Overcast 50°
PRESENT AT SITE JPR

1300 On Site. BAT plant
I delievered a package of analytical data to Al. Marzelli for his use. He said that copper pipe is being used in three manifolds for the treatment facility and that he needs in organic data to determine if the ground water will react with the copper pipe. I delievered mostly organic data. I told Al that I would go back to office and see if Golder has the additional data that Al will need.

The only work being performed on site was the erection of the buildings. The ~~south~~ west wall was installed and the icon workers (Holcombe) were installing the south wall.

Al again said that the remaining work is on hold until the piping is received on 11/22/93

1400 I left the site and returned to the office to look into the additional data that Al wants and to do paper work.

gned:

TO: Brian Smith | File

NO. 36

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FIELD REPORT

JOB NO. 933-9008
PROJECT TDS ON SITE CDM
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/18/93 TIME IN 0830 TIME OUT 0930
WEATHER
PRESENT AT SITE JPR

0830 - On Site BAT facility
- Holcombe installing north wall of building on BAT site.
- The south and east walls were installed the previous two days
- Kevin White (Kwidlow) said that Holcombe may start on the roof today
- Kevin also said that Holcombe will be working Monday but Sicali and Massaco likely will not be. Pipe should be in Monday and possibly saw cut on Tuesday

0930 - Left site.

gned:

TO: Russ Smith / Fitz

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NO. 37

FIELD REPORT

JOB NO. 933-9068 DATE 11/23/93 TIME IN TIME OUT

PROJECT TDS COA ON-SITE WEATHER

LOCATION WAEATFIELD PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

7:45 On site - BAT plant

Pump-out port was not delivered this morning, so no excavating will be done.

I put together drilling footage / materials summary

840 Ft of piping has been delivered. The balance may be significantly delayed due to raw material supply problems at the factory.

Holcomb is installing insulation / panels on the west side of the roof.

11:00 Offsite

Signed: Dale W...

TO: Brian Smith / File

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NO. 38

FIELD REPORT

JOB NO. 933-9008
PROJECT TDS/LCAA ONSITE/NY
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 11-29-93 TIME IN 1230 TIME OUT 1500
WEATHER Light Snow 30°
PRESENT AT SITE JPR
Bill Johnson (FLI)

1230 - On Site at the off-site system to adjust pumps in EW-2, EW-3, and EW-4 with help from B Johnson (FLI)
- EW-2 pumping rate increased to 2.40 gpm
- EW-3 pumping rate increased to 12.5 gpm
The water level display was blank
- EW-4 pump not running - the pump was switched to manual and the valves opened all the way to run at 12.5 gpm - the pump was switched back to AUTO - the pump would not run on AUTO - the water level display would read "ERROR" - the pump was switched back to manual and left at 12.5 gpm as per ALG

1400 - On site BAT Facility - Hilcombe installing roof insulation panels on West elevation of building
- Al Mazzelli said that the delivery of the pump out port has been delayed - the port may be delivered 11/30/93 and that trenching and pipe installation may occur 12/1/93.
1500 - Left site to go to office paperwork until 1630

gned:

TO: Brian Smith / File

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NO. 39

FIELD REPORT

JOB NO. 933-9068
DATE 11/30/93 TIME IN 0930 TIME OUT 1000
PROJECT TDS C&A ONSITE
WEATHER
LOCATION WHEATFIELD
PRESENT AT SITE JPR
CLIENT
OWNER
CONTRACTOR

0930 - On Site at BDT Facility
- Holmembe continuing installation of roof on the west of the building - progress slow because of frost on the roof surface

- Fax white sent that Sicoli and Massaco will be milling the pavement between EW-7B and EW-8 on 12/1/93

- Two loads of 1A stone were delivered to the site

1000 Left Site

gned: [signature]

TO: Brian Smith/File

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NO. 40

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS/CGA ON-SITE/NY
LOCATION WEST FIELD
CLIENT
OWNER
CONTRACTOR

DATE 12-1-93 TIME IN 0930 TIME OUT 1330
WEATHER SUNNY 25°-35°F 0-5 MPH S-SW
PRESENT AT SITE SPR

0930 - On Site at BAT Facility
- Al. Marzelli said that a technician from Perma-Pipe will be on-site 12/2/93 @ 0830 for training of Cayuga and Ferguson
- Milling machine on site

1000 - Start of pavement milling between EW-7B, EW-8 and the treatment building

1200 - Milling of pavement complete - an approximate 3'-3.2' wide area cut by milling machine between EW-7, EW-8, and the building

- Holcombe continuing installation of the roof on the east elevation of the building

- Three loads of 1A stone delivered to the site for a total of 6

- Al. M. said excavation will begin tomorrow 12/2/93
- Cones were placed along the whole length of the cut left by the milling machine for safety.

1330 - Went to office to do paperwork and to revise HASP for trenching and confined space.

gned:

TO: Brian Smith / File

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NO. 41

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/2/93 TIME IN TIME OUT
WEATHER OVERCAST - 30°
PRESENT AT SITE DCW

Page 1/2

8:50 On site - BAT plant. Instrument calibration ✓ - O.K.

9:10 In Blade building, perma-pipe rep. trains Cuyuga plumbers to properly install pipe. Ferguson Electric is also present. Major points:

1. Keep pipe / cable dry.
2. Don't release pressure on welding jig until weld is cool.
3. Hook up leak detection before hydro test.
4. Perma-pipe recommends 2 hours final hydro test on carrier pipe, 1 hours air test on containment pipe.
5. Ends of pipe should be carefully heated to approx 70°F before welding and must be clean.

10:30 Trenching begins from EW-7 to EW-8. I leave perma-pipe meeting to perform air monitoring. Air O.K. Slope of trench bottom is determined with a laser level / alignment device. Indicated slope from EW-7 to EW-8 is 0.46 %. Min required is 0.417 %. Pipe top will be surveyed after placement.

Signed: Dan Wk

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TO: Brian Smith / File

NO. 42

FIELD REPORT

JOB NO. 933-9068
DATE 12/2/93 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER OVERCAST 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

12:00 - 13:00 Lunch

Check trench dimensions at 50' intervals as proposed. Continue air monitoring. Take sample of #1A stone from sixth load for sieve testing - SA # 120293-2. Holcomb installs eastern roof panels or flashing on N. side of building when wind kicks up.

16:00 Trenching complete for today at approx. 2+60 (from EW-7). Paperwork until 17:00

Signed: Dave Welsh

TO: Brian Smith / File

NO. 42

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FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/3/93 TIME IN TIME OUT
WEATHER OVERCAST - 30's
PRESENT AT SITE DCW

7:50 On site BAT plant. Instrument calibration ✓ O.K. Standard count on nuclear density gauge. O.K.

Contractors pump rainwater out of low end of trench. The parking lot pitches towards the trench so several feet of water collected.

10:00 Contractor decides not to open any more trench today as rain is expected this weekend.

Relayed to Al Marzelli A. Grassos concerns about leaving the trench open without construction fencing. Currently the trench is protected by the spoils pile on one side and traffic cones approx. every 8 ft on the other.

Holcomb installing insulation / panels on east side of roof. West side of roof is done except for trim, small Overhead door is delivered - installation will start today. RTG sending an approved set of drawings for building shell.

11:00 Offsite + 1 hr paperwork.

Signed: Dave Welsh

TO: Brian Smith / File

NO. 43

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FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS COA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/6/93 TIME IN TIME OUT
WEATHER OVERCAST - 30's
PRESENT AT SITE DCW

8:15 On site BAT plant. Instrument caliberation √ - O.K. Balance of pipe arrives (39 pieces at 40' each for 1560).

Trench from EW-7 collected water over the weekend which is corrently being pumped out. The standing water resulted in some caving of the trench walls - up to several cubic ft - near the bottom of the trench. This is being removed with a backhoe.

Short section of trench is excavated next to treatment building for pipe entry under foundation.

Cayuga plumbing prefabricates 80 ft lengths of pipe in BAT building. Welding techique looks O.K.

Holcombe has all building roof panels and insulatrin in place by 14:00

14:30 Offsite. Submittal paperwork until 16:30

Signed: Dick Wh

TO: Brian Smith / File

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NO. 44

FIELD REPORT

JOB NO. 933-9068	DATE 12/7/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE	WEATHER OVERCAST 40's
LOCATION WHEAT FIELD	PRESENT AT SITE DCW
CLIENT	
OWNER	
CONTRACTOR	

8:35 On site - BAT plant. Instrument calibration ✓ - O.K. Cuyuga plumbing prefabricating 80 ft lengths of pipe and air testing the two-inch and six-inch volumes to catch problems before the official Tests.

S+M scraping caved soil out of trench with a backhoe.

12:00 - 13:00 Lunch

Cuyuga carries 80' lengths of pipe to edge of trench and makes field welds in a heated moveable tent.

14:00 S+M places 6" of #1A stone in trench

15:00 Trench excavation resumes towards EW-8

16:00 Trenching ceases at approx. 2+60
Holcombe installed exterior roof crest panels and roof edge trim.

Signed: Dave Wh

TO: Brian Smith / File

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NO. 45

FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/8/93 TIME IN . TIME OUT
WEATHER OVERCAST - 30°
PRESENT AT SITE DCW

Page 1/2

7:45 On site BAT plant. Instrument calibration √ - O.K. S+M extending trench eastwards from approx. 2+60 to EW-8

Cayuga preparing pipe termination at EW-7 for insersion of pipe into trench. Compaction of #1A stone - lift 1 - from 0+00 to 2+50 passes. Cayuga places 280' of pipe in trench.

Note: S+M personell were noted in trench leveling stone. No shoring was in place. After talking with A. Caresso, our position is that shoring - in accordance with OSHA - is required. I relayed our concerns to A. Marzelli. He stated he had already discussed the importance of this issue with S+M.

Trench dimensions checked from 2+50 to EW-8 - O.K. Inspection port location at approx. 2+42.

15:45 S+M in trench again with no shoring. A. Marzell. warns S+M that this will not be tolerated

Signed: Dave Welch

TO: Brian Smith / File

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NO. 46

FIELD REPORT

JOB NO. 933-9068
DATE 12/8/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST - 30's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
Page 2/2
CONTRACTOR

Trench complete from EW-7 to EW-8

Holcombe placed remainder of exterior roof crest panels and some ~~for~~ roof trim.

S+M framing out lab/restroom in treatment building.

Signed: Dan Wuh

TO: Brian Smith / File

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NO. ~~4~~ 4L

FIELD REPORT

JOB NO. 933-9068
DATE 12/9/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER PARTLY CLOUDY 40°
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Instrument calibration - O.K. Troxler standardization - O.K. S+M placing #1A stone in trench from 2+50 to EW-8. Stone thickness O.K. Compaction from 2+50 to EW-8 O.K.

11:30 - 12:30 Lunch
Cayuga installs the remainder of pipe between EW-7 and EW-8 - makes final field welds and end connection in EW-8

13:00 S+M offsite except for framer working on lab.

Note: though the approved plans do not show it in detail the pipe ends use a bolted flange in the vaults for the seal between the carrier and containment lines.

Note: Because of the change in containment pipe specs., Perma pipe has recommended new pressure test specs.

2-inch - { 75 psi hydro test for 2 hours -or- 30 psi air test for 24 hours

6-inch 5 psi air test for 1 hours

Signed: Dave Wilson

TO: Brian Smith / File

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NO. 47

FIELD REPORT

JOB NO. 933-9068
DATE 12/6/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER RAIN 40's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:15 On site - BAT plant. Instrument calibration √ - O.K. A review of survey data of top of pipe (survey completed this morning) revealed that some of the 20 Foot sections of pipe have less than the required slope of 0.417 %. This is in part due to the fact that the pipe does not lay perfectly flat against the #1A stone, as the laser alignment of the top of the stone checked out O.K. After discussing the situation with A. Grosso, I direct S+M to adjust the grade of the pipe where it is touching the #1A stone yet is still less than design grade - in three locations

12:00 - 13:00 Lunch

The regraded portions of pipe are resurveyed - and now are acceptable.

Cayuga runs a trial air test on 2" line from EW-7 to EW-8 - It passes. The pre-back fill air test on 6" line passes. The 24 hour air test on the 2" line is started.

S+M clears mud from trench until 16:00

Signed: Dale W. Lee 17:00 Offsite

TO: Brian Smith / File

NO. 48

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FIELD REPORT

JOB NO. 933-9068
DATE 12/13/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SUN -40's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Air test from EW-7 to EW-8 on 2-inch line fails. A leak is ~~found~~ found in a test fitting and is repaired. Test is started again at 10:13 (24 hour test @ 30 psi)

S&M clearing caved mud from trench and forming up ramps near roll-up doors.

12:00 - 13:00 Lunch
Discuss pressure test started this A.M. with Cayuga - A. Marzelli. Pressure has decreased from 29 psi at 10:13 to 25 psi at 14:00. If pressure stabilizes here the test will be a passing one.

Holcombe continues working with building trim

15:30 Offsite

Signed: Dan Wilk

TO: Brian Smith / File

NO. 49

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FIELD REPORT

JOB NO. 933-9068
DATE 12/14/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER PARTLY CLOUDY - 40's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. S+M pouring concrete ramp and placing bollards by small overhead door.

10:15 24-hour air test on 2-inch line from EW-7 to EW-8 fails. Cayuga checks for leaking test fittings.

Large overhead door to be installed this afternoon (but was not)

11:30 offsite

Signed: Dan Welsh

TO: Brian Smith / File

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NO. 50

FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/16/93 TIME IN TIME OUT
WEATHER SUN 30's
PRESENT AT SITE DCW

10:00 On site BAT plant after inspecting off-site installation of leak detection system by Clean Harbors. Cayuga reports that leak has been found - a section of pipe is removed and replaced with new pipe! Ramp for large roll-up door poured earlier. Gutters and downspouts / trim finished. Swinging doors in place. Framing in place for FRP panels in building.

(See 12/14 report →)

Rion - 13:00 Lunch
Cayuga makes final welds - prepares air test of 2- inch line from EW-7 to EW-8. It passes. 24- hour test of 2- inch line from EW-7 to EW-8 starts at 16:50. Offsite

Signed: Dave Wick

TO: Brian Smith / File

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NO. 51

FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/17/93 TIME IN TIME OUT
WEATHER SUN 30's
PRESENT AT SITE DCW

9:40 On site BAT plant. 24-hour air test on 2-inch line still holding at 32 psi.

S&M backfills pipe to approx. 2+60 with #1A stone. Stone thickness at level of conduits checked every 25 feet with laser aligner. Thickness = 6 inches on top of pipe ± 3/4 inch. Trench eastward from 2+60 must be cleared of caved mud before backfilling.

11:30 - 12:30 Lunch

Conduit placed in trench from EW-7 to 2+60 #1A stone placed on top of conduit. thickness checked every 25 feet with laser aligner. Thickness equals 12-13 inches Compaction tested every 50 feet (Troxler) - all pass. Air test of 2" line from EW-7 to EW-8 passes.

Ferguson (electric) strings cable in treatment building. Cayuga builds more pipe.

Signed: Dave Work

TO: Brian Smith /File

NO. 52

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/18/93 TIME IN . TIME OUT
WEATHER RAIN 40's
PRESENT AT SITE DCW

9:00 On site BAT plant to observe Penn. Drilling CO. decommission original EW-7 (EW-7A). Water level 16.7 ft bgs prior to work. Bentonite grout tremied into hole to within approximately 12 ft of the surface - which is about four feet above the bottom of the 10-inch dia casing. The remainder of the bore is filled with concrete. The top of the 10-inch casing was cut of approx. 6 inches bgs.

12:00 Decommissioning complete except for sodding - offsite.

Signed: Dave Huth

TO: Brian Smith / File

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NO. 53

FIELD REPORT

JOB NO. 933-9068
DATE 12/21/93 TIME IN TIME OUT
PROJECT TDS COX ON-SITE
WEATHER SNOW 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site - BAT plant Trailer standardization - O.K. Instrument calibration V - O.K. S+M clearing caved mud out of trench - placing #1A stone in trench over pipe from 2+60 to EW-8 at conduit level. Stone thickness - (checked with laser aligner) over pipe equals six inches. Approx. 1.5 feet of general backfill is placed on top of geotextile (and #1A stone) from EW-7 to 2+60. Compaction efforts look O.K., but soil is being compacted beyond optimum moisture in my opinion. S+M knows this and would prefer using #2 stone but this is not specified. S+M places #1A stone on top of conduit from 2+60 to EW-8. Stone thickness over conduit = 12+ inches. All #1A stone is in place from EW-7 to EW-8 except for right next to the vaults near conduit seals.

11:30 - 12:30 Lunch
Cayuga has identified the cause of the leak for the failed air test from EW-7 to EW-8 in the 2-inch line. A factory applied extrusion weld holding a pipe centralizer in place was partially sheared off, pulling a piece of the 2-inch line with it thus opening a hole.
S+M + Electricians drywalling / wiring treatment building

Signed: Dave Welch Offsite 16:00

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TO: Brian Smith / File

NO. 54

FIELD REPORT

JOB NO. 933-9018 | DATE 12/22/93 TIME IN | TIME OUT

PROJECT TDS COA ON-SITE | WEATHER OVERCAST 30° F

LOCATION WHEAT FIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

10:00 On site BAT plant Instrument calibration ✓ O.K
S+M excavates vault pit for DW-12. A 15-inch steel storm drain is encounterd at north side of pit, but it will clear the vault.

7 loads of #1A stone delivered today, making a total of 14. Sampled load #11 for the 3rd grain size analysis (SA # 122293-3)

11:45 - 12:45 Lunch
S+M places #1A stone in DW-12 pit, excavates vault pit for DW-11.

16:45 Vault pit for DW-11 nearly halfway complete - offsite at 16:00

Signed: Dave Welch

TO: Brian Smith / File

NO. 55

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FIELD REPORT

JOB NO. 933-9048
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 12/23/93 TIME IN TIME OUT
WEATHER OVERCAST - 20°
PRESENT AT SITE DCW

5:00 On site BAT plant. Instrument calibration √ - O.K. StM finishes excavating pit for vault DW-11 - places 6" of #1.1 stone in pit bottom

10:45 Vaults DW-11 and DW-12 arrive. StM installs DW-12, initially getting it too high by about a foot. Coarse verbiage and blasphemies are heard throughout the land.

11:30 - 12:30 Lunch

StM backfills trench from 2+60 to EW-8 with native material. DW-11 vault is placed. DW-12 vault is removed, the pit is re-excavated and the vault is, correctly, replaced.

Signed: Dave Welch

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TO: Brian Smith / File

NO. 56

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 11/27/93 TIME IN TIME OUT
WEATHER OVERCAST 10's °F
PRESENT AT SITE DCW

8:30 On site - BAT plant. Instrument calibration ✓ - O.K. Trenching (by National Fuel) for gas tie-in to treatment plant starts.

10:00 Excavation of trench by S&M from DW-12 south to the treatment building starts. The frozen ground slows the work.

11:30 - 12:30 Lunch
Trench excavation continues. Lab drywalling / wireing almost complete. Floor of building ready for acid etch.

14:00 Offsite.

Signed: Dave Welch

TO: Brian Smith / File

NO. 57

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FIELD REPORT

JOB NO.	933 9068	DATE 12/28/93 TIME IN	TIME OUT
PROJECT	TDS CQA ON-SITE	WEATHER	SUN 20's °F
LOCATION	WHEAT FIELD	PRESENT AT SITE	DCW
CLIENT			
OWNER			
CONTRACTOR			

8:15 On site - BAT plant. Instruments calibrated. S&M just begins to finish trench from DW-12 to building when backhoe breaks down, stopping the trenching. Backhoe is shifted to backfilling the trench (with the still-operative front loader) from EW-7 to EW-8.

I continue to coordinate work on off-site system by Clean Harbors.

11:30 - 12:30 Lunch

13:00 Replacement backhoe arrives - trenching resumes. Treatment building floor is acid etched in preparation for painting.

16:00 Offsite.

Signed: Dick Wahl

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TO: Brian Smith / File

NO. 58

FIELD REPORT

JOB NO. 933- 9068
DATE 12/29/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SUN 20's °F
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site BAT plant. Instrument calibration √ - O.K.
S+M finishing trench from DW-12 to building.
Trench dimensions checked every 50'.

11:30 - 12:30 Lunch
6" of #1A stone placed in bottom of trench.
Stone lift thickness (lift 1) checked every 25'.
Grade toward DW-12 is approx 1.1 %.

Trench from EW-7 to EW-8 is backfilled to approx. 6- inches bgs with native material.
The compaction of the material is probably less than that previously achieved because the soil is frozen. S+M plans to let the soil settle prior to paving.

14:00 offsite

Signed: David Welna

TO: Brian Smith / File

NO. 59

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FIELD REPORT

JOB NO. 933-9068	DATE 12/30/93 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE	WEATHER SNOW 20's °F
LOCATION WHEAT FIELD	PRESENT AT SITE DCW
CLIENT	
OWNER	
CONTRACTOR	

8:15 On site BAT plant. Trexler standardization O.K. I take compaction tests on #1A stone (1 Pt 1) from DW-12 to building. All three tests pass. S+M clears trench of snow so Cayuga can place pipe. Building floor is epoxy coated.

11:30 - 12:30 Lunch

Cayuga attaches flange to pipe end in DW-12, makes one field weld, then is called elsewhere by a plumbing emergency. S+M places #2 stone from EW-7 to EW-8 to approx 2- inches above ground surface.

14:00 Offsite - paperwork

Signed: Dave Wilk

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TO: Brian Smith / File

NO. 60

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/3/94 TIME IN TIME OUT
WEATHER OVERCAST - 10's °F
PRESENT AT SITE DCW

10:00 On site BAT plant. Instrument calibration √ - O.K. Cayuga plumbing finishes last weld on line from DW-12 to treatment building. The E-W portion of the line from the building to EW-8 (which shares a section of trench next to the building) has also been installed.

10:30 STM begins to dig southwards from building to EW-8

11:30 - 12:30 Lunch

Cayuga Puts air test on 2-inch line from DW-12 to building at 13:35 STM continues to dig southwards towards EW-8, though the going is slow because of frozen ground and a tough stone / slag layer under the pavement in this area.

16:00 Air test still holding - offsite

Signed: Dave Wilk

TO: Brian Smith / File

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NO. 61

FIELD REPORT

JOB NO. 933-9068
DATE 1/4/91 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER HEAVY SNOW - 20's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site BAT plant - Instrument calibration ✓ - O.K.
S+M continues to trench southwards from building to EW-8. Surveyor shoots pipe from DW-12 to building

11:30 - 12:30
Cayuga puts air test on the 6" line from DW-12 to the building at 13:00. Test of 2" line over this interval passes at 13:35
6" line test passes at 14:00

16:00 Offsite

Signed: Dave Welch

TO: Brian Smith / File

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NO. 62

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/5/94 TIME IN TIME OUT
WEATHER SNOW 20[15] °F
PRESENT AT SITE DCW

8:45 On site BAT plant. Supervise lowering of first 90° elbow in 6-inch pipe S. of DW-12 0.07 feet in order to achieve proper pipe slope. No trenching will be done today. S+M and Laidlaw are involved in a dispute over the pace of the work (trenching).

11:00 Off-site paperwork - lab contracts etc.

Signed: Dan Wick

TO: Brian Smith / File

NO. 63

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FIELD REPORT

JOB NO. 933-9068
DATE 1/6/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SNOW 0's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

10:00 On site BAT plant Instrument calibration ✓ - O.K.
Troxler standardization - O.K.

Pace - of - work dispute has apparently been resolved. A hoe-ram has been brought on site to break up the stone layer (under the asphalt) from the building to EW-8. Trenching resumes - more quickly now - from the building southwards

Compaction on lift 4 of #1A stone at two stations S. of DW-12 = pass.

11:30 - 12:30 Lunch
S+M trenches as before - ending at approx 75 Ft S. of building. Offsite at 16:00

Signed: Dan Welk

TO: Brian Smith / File

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NO. 64

FIELD REPOR

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/6/94 TIME IN TIME OUT
WEATHER SNOW 10°S
PRESENT AT SITE DCW

8:00 On site BAT plant. Instrument calibration V-O.K.
S+M continues to dig southwards towards EW-8.

11:30-12:30 Lunch
S+M continues to trench to appox 150' S. of building

Signed: Dave Wik

TO: Brian Smith / File

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NO. 65

FIELD REPORT

JOB NO. 933-9068
DATE 1/10/94 TIME IN TIME OUT
PROJECT TDS COX ON-SITE
WEATHER SUN 10's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:40 On site BAT plant - Instrument calibration √ - O.K.
Cayuga places pipe from building towards EW-8. S+M places 6" #1A stone in excavated portion of trench

I note fresh footprints in snow at bottom of 7 foot + deep trench - no evidence of shoring. I tell A. Marzelli that if any man is caught in an unshored/unbenched ~~trench~~ trench of this depth he will be removed from the job and BAT notified.

11:30 S+M begins to trench southwards to EW-8 from the point they left off 1/7/94.

12:00 - 12:30 Lunch
S+M continues to excavate. Cayuga installs the second 80' length of pipe.

1:00 Offsite

Signed: Dave Wh

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TO: Brian Smith / File

NO. 66

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/11/94 TIME IN TIME OUT
WEATHER OVERCAST - 30°S
PRESENT AT SITE DCW

9:00 Onsite BAT plant. Instrument calibration V - O.K. Troxler standardization O.K.

S+M brings a track - excavator and another backhoe on site and excavates south towards EW-8 - placing #1A stone as they go. The pace of trenching picks up considerably.

12:00 - 12:30 Lunch

S+M arrives at EW-8 at approx 15:00. Compaction of #1A stone (lift 1) from building to EW-8 is checked every 50' - all pass. Excavator is set up to dig northwards from DW-12.

16:00 Offsite

Signed: Dave Wahl

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TO: Brian Smith / File

NO. 67

FIELD REPORT

JOB NO. 933-9068 | DATE 1/12/94 TIME IN | TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER OVERCAST 20's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

8:00 On site BAT plant. Instrument calibration ✓ - O.K. Laidlaw moving process equipment into treatment building. Start Trenching north from DW-12 - Trench is trenched. Cayuga welding pipe from building to EW-8.

12:00 - 12:30 Lunch
Surveyors arrive to shoot pipe elevations from building to EW-8

* Cayuga (plumbing) was noted working in vault EW-8 and stated the air quality had been checked prior to entry when in fact it had not. Vault had been covered with plywood for several days. Called S. Devic and told him that health and safety plan violations were continuing despite several warnings to Laidlaw. He stated he would act on this matter.

16:00 Offsite

Signed: Dave Welch

TO: Brian Smith / File

NO. 68

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FIELD REPORT

JOB NO. 933-9068
DATE 1/13/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST - 20's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. No excavating today - hoe ram is breaking up parking lot N of DW-12
I review survey data of pipe elevations from building to EW-8 and building to DW-12

11:22 Air test on 2-inch line from building to EW-8 is started.

12:00 - 12:30 Lunch
Three sections of pipe are below minimum slope. These are located, the grades adjusted, and will be re-surveyed tomorrow

Signed: Dale Wilr

TO: Brian Smith / File

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NO. 69

FIELD REPORT

JOB NO. 933-9068
DATE 1/14/94 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER SNOW 20's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site BAT plant. Instrument calibration √- O.K.
S+M hoe-ramming pavement and excavating trench to the north of DW-12 - placing #1A stone (at conduit level) from building to EW-8.
Surveyor on-site to lay out trench in ARC area and to re-shoot the three failed pipe slopes originally shot yesterday. The three spots now meet the minimum slope required.

12:00- 12:90 Lunch
S+M excavates towards DW-11 after reaching "T" N. of DW-12. Three loads #1A stone delivered - for a total of ~~20~~ 17 Will need a sample from load 21.

16:30 Offsite

Signed: David Wilson

TO: Brian Smith / File

NO. 70

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FIELD REPORT

JOB NO. 933-9068 | DATE 1/17/94 TIME IN . TIME OUT
PROJECT TDS CQA ON-SITE | WEATHER SNOW · 20's
LOCATION WHEATFIELD | PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site BAT plant. Instrument calibration √ - O.K. Trailer standardization - O.K. S+M trenching N. from DW-12. Hoe ram breaks up pavement from "T" towards DW-11. Lift 4 of #1A stone placed from EW-8 to building - compaction and thickness checked every 50 ft ± all O.K. Surge tank and oil/water separator placed in building -

12:00 - 12:30 Lunch

S+M excavates towards DW-11 after reaching "T" N. of DW-12. Three loads of #1A Stone delivered - for a total of 20.

16:30 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

NO. 11

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/18/94 TIME IN TIME OUT
WEATHER SUN - 0's
PRESENT AT SITE DCW

8:00 On site BAT plant. Instrument calibration √ - O.K. Track-hoe won't start, S+M works to get it going.

10:00 Hoe starts - trench is excavated from "T" N. of DW-12 towards DW-11. Lift 1 of #1A stone placed from "T" to DW-12 Compaction / stone thickness / trench dimensions at six stations along this length checked - O.K.

12:00 - 12:30 Lunch

Cayuga places two 80' lengths of pipe N of DW-12 and makes a cut weld. S+M finishes trench between DW-11 and "T"

16:00 Offsite

Signed: Derek Dahn

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Fax (716) 691-5109

TO: Brian Smith / File

NO. 72

FIELD REPORT

JOB NO.	933-9068	DATE 1/20/94 TIME IN	TIME OUT
PROJECT	TDS COA ON-SITE	WEATHER	SUN 10's
LOCATION	WHEAT FIELD	PRESENT AT SITE	DCW
CLIENT			
OWNER			
CONTRACTOR			

9:30 On site BAT plant - Trexler standardization O.K. Yesterday #1A stone was placed from "T" to DW-11 (lift 1)

S+M backfilling trench with soil from building to EW-8 after removing snow. Soil is frozen and can not be fully compacted, so the backfill stone (under the pavement) is left slightly mounded and will be leveled during paving in the spring. Cayuga welding pipe from DW-12 to "T". I check trench dimensions and lift one #1A stone thickness and compaction from "T" to DW-11. O.K. (Trench [redacted] in this section is benched)

12:00 - 12:30 Lunch

S+M starts excavating vault pit for DW-10 at 13:30 One load of #1A stone delivered for a total of 21. Take fifth #1A stone sample. SA# 012094-5.

15:45 Vault 4/5 excavated - offsite

Signed: Dan Wilson

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TO: Brian Smith / File

NO. 73

FIELD REPORT

JOB NO. 933-9068
DATE 1/21/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER PARTLY SUNNY - 10°S
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant Instrument calibration √ - O.K.
S&M places #1A stone in bottom of vault pit DW-10, then moves to excavate vault pit DW-9.

Cayuga places three lengths (80ft) of pipe from "T" To DW-11 then is called away for an emergency.

12:00 - 12:30 Lunch
S&M encounters concrete bell and socket drain pipe (≈ 12" dia) about 1½ Ft west of DW-9 while excavating vault pit. Pipe runs approx. N-S. Pipe is probably out of service because it leads from the pond - which had been closed. J. Devic and A. Grasso will check on this

14:45 J. Devic says rip it out - but be sure to plug the ends. S&M finishes excavating vault after removing vault. A small amount of water is present in the pipe and pipe backfill but soon stops flowing

16:00 Off site

Signed: Dave Wahn

TO: Brian Smith / File

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NO. 74

FIELD REPORT

JOB NO. 933-7068
DATE 1/24/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER RAIN 30's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

14:00 On site BAT plant. Monitor start of air test on 2-inch line from DW-11 to DW-12 : 32 psi at 15:24 Inspect installation of vaults DW-9 and DW-10 - look O.K!

16:00 Off site

Signed: Dan Wh

TO: Brian Smith / File

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NO. 75

FIELD REPORT

JOB NO. 933-9068
DATE 1/25/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST 20°S
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

13:00 On site BAT plant. Review survey data of pipe section from DW-12 to "T" - 3 three sections (20') are below minimum grade and must be leveled. Air test on 2-inch line from DW-11 to DW-17 passes. Attempt is made to put 6-inch line of this section on test, but test fittings leak so Cayuga will try tomorrow.

Ferguson electric pulling wire in conduit from blade building to treatment building.

16:00 Offsite

Signed: David Wahl

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TO: Brian Smith / File

NO. 76A

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/1/94 TIME IN TIME OUT
WEATHER SNOW 10's
PRESENT AT SITE DCW

8:00 On site BAT plant. Trench soil backfilling complete from DW-11 eastwards to "T" on 1/30/94. Approximately 50' of frost hoe rammed along trench alignment from DW-9 south on 1/31. Today I discuss project with A. Merzell. Observe an additional 50' of ramming southwards from yesterday. Pipe ends of truncated storm drain across DW-9 were bricked and grouted shut.

11:00 Offsite

gned: David Wik

TO: Brian Smith / File

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NO. 76B

FIELD REPORT

JOB NO. 933-9068
DATE 2/7/94 TIME IN TIME OUT
PROJECT TDS CCA ON-SITE
WEATHER PARTLY CLOUDY - 10's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant instrument calibration ✓ - O.K.
SIM breaking up pavement / frost from DW-9 towards DW-10. Excavator follows. Trenching is very slow as ground is frozen nearly two feet down.

12:00 - 12:30 Lunch
Digging resumes. Excavator encounters grout (abandoned test boring ?) approx 10 ft S. of elbow in trench alignment E of DW-9. Hoe ram is used to break up grout plug. No air monitoring hits for OVM of soil around grout.

16:00 Offsite

Signed: Dick Wile

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TO: Brian Smith / File

NO. 77B

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 1/26/94 TIME IN . TIME OUT
WEATHER PARTLY CLOUDY 10°S
PRESENT AT SITE DCW

8:00 On site BAT plant. Air test on 6-inch line from DW-12 to DW-11 passes. STM repairs "flat" pipe slopes noted yesterday between DW-12 and DW-11. Surveyor reshoots the repaired sections. Two spots near the vaults DW-11 remain slightly less than the specified slope of 1" in 20', but are above Perma Pipe's minimum slope as discussed on p. 89. This is acceptable.

Four loads of #1A stone delivered for a total of 25

11:30 Offsite

Signed: Dick W. Gu

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TO: Brian Smith / File

NO. 77A

FIELD REPORT

JOB NO. 933-9068 DATE 1/27/94 TIME IN TIME OUT

PROJECT TDS CQA ON-SITE WEATHER OVERCAST -20's

LOCATION WHEAT FIELD PRESENT AT SITE

CLIENT

OWNER

CONTRACTOR

9:00 On site BAT plant Trexler standardization O.K. Lift four of #1A stone placed over conduit from DW-11 to "T" Compaction and thickness of stone checked at four stations (50' intervals) - O.K.

* Detail change - No junction box used at "T" between DW-10, DW-11, DW-12 for conduit as it is against code. Instead 2½-inch conduit was run from DW-12 to DW-11 directly, then 2-inch conduit was run from DW-11 to DW-10.

12:00 - 12:30 Lunch

J. Devic and B. Smith onsite to inspect off site system. I accompany them to EW-6 to take specific conductivity measurements of the leak detection basins in EW-6.

South basin = 1280 uS North basin = 1690 uS

14:45 Return to BAT plant. S+M excavating broken storm drain N. of DW-12

16:00 Offsite

Signed: Dan Wh

TO: Brian Smith / File

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NO. 78A

FIELD REPORT

JOB NO. 933 - 7068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/3/94 TIME IN TIME OUT
WEATHER SNOW 10°s
PRESENT AT SITE DCW

8:30 On site BAT plant. Instrument calibration √ - O.K.
S&M hoe - ramming trench alignment beside old pond
S. of DW-9. Excavation starts at 9:30.

4-6 inch thick reinforced concrete - approx 20 feet in length - was discovered in front of "W" control building just east of the southern 90° elbow east of DW-9. Hoe ram broke it up.

12:00 - 12:30 Lunch

Hoe ram moves to start breaking up frost from DW-10 North. Excavator moves to start trenching E. of "X Y Z" control building northwards.

16.00 Off site

Signed: Dave Wilson

TO: Brian Smith / File

NO. 78B

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/4/94 TIME IN TIME OUT
WEATHER OVERCAST 20°
PRESENT AT SITE DCW

8:30 On site BAT plant. Instrument calibration √ - O.K.
Excavation continues E. of XYZ building.

12:00 - 12:30 Lunch

Excavation continues. The ram moves E. of building 72 and starts to break up pavement

16:00 offsite

Signed: Dave W.

TO: Brian Smith / File

NO. 79

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FIELD REPORT

JOB NO. 933-7068	DATE 2/7/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE	WEATHER SUN -10's °F
LOCATION WHEAT FIELD	PRESENT AT SITE DCW
CLIENT	
OWNER	
CONTRACTOR	

8:30 On site BAT plant. Instrument calibration ✓ - O.K.
S&M excavating trench NE of "WXYZ" building around storm sewer pipe. Hoe ram works to the E. of building 72 towards DW-10.

12:00 - 12:30 Lunch
A metal conduit (approx 2-inches dia) heading E. from building 72 just N. of the doorway was ~~[illegible]~~ dented by the hoe ram. The cable (thought to be telephone) was not indicated on the drawings.

Another metal conduit (approx 1½-inches dia) heading from the NE corner of building 72 & the yellow valve building was ripped out by the hoe ram. The line, supplying power to the building heaters, was not indicated on the drawings. A temporary bypass line was run to restore power.

16:00 Off site

Signed: Dan Wuk

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TO: Brian Smith / File

NO. 80

FIELD REPORT

JOB NO. 933-9068
DATE 2/8/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST -10's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Instrument calibration √ - O.K.
S+M excavates from ~~DW-10~~ the N. center of the "WXYZ" building west towards DW-9 - placing lift 1 of the #1A stone as they proceed.

12:00 - 12:30 Lunch
#1A stone placed from DW-9 to 2nd 90° elbow from DW-9.

14:45 Excavator blows a hydraulic fitting - trenching stops just short of the west edge of the "WXYZ" building near the 90° elbow.

One load of #1A stone delivered today for a total of 2b. The sixth sieve sample (# 020894-6) was taken from this load.

15:30 Offsite

Signed: Dave Welch

TO: Brian Smith / File

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NO. 81

FIELD REPORT

JOB NO. 933-9068 | DATE 2/9/94 TIME IN . TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER OVERCAST - 10's

LOCATION WHEAT FIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

8:00 On site BAT plant. Instrument calibration ✓ - O.K.
Compaction of lift 1 #1 stone and trench dimensions from DW-9 to within one station of DW-10 checked - O.K.

10:30 Excavator repaired - elbow excavation ~~completed~~ resumed where machine left off yesterday.

12:00 - 12:30 Lunch
Cayuga places and welds pipe from DW-9 to second elbow from DW-9 (alongside the pond).
Excavator finishes trenching N. of DW-10

16:00 Offsite

Signed: Dave Welch

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TO: Brian Smith / File

NO. 82

FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/10/94 TIME IN TIME OUT
WEATHER SUN - 10's
PRESENT AT SITE DCW

9:00 On site BAT plant Instrument calibration √ - O.K.
S+M removes fencing from trench alignment and breaks-up pavement across gate 6 driveway (S. of DW-10)
Cayuga continues to install pipe SE of DW-9 towards DW-10.

9:45 Excavator moved to gate 6 driveway - begins trenching (Trench is not benched across drive so road plates may be used.

11:45 Storm sewer line just N. of gate 6 drive is struck by excavator and crushed. This line was correctly marked out in the field.

12:00 - 12:30 Lunch
S+M places lift of #1A stone from "T" northwards across drive as the excavation proceeds. Several feet north of the broken sewer line an unmarked utility encased in 2x2 ft of concrete is discovered perpendicular to the trench alignment. It is not disturbed

16:00 Off site

Signed: Dale Wedl

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TO: Brian Smith / File

NO. 83

FIELD REPORT

JOB NO. 933-9068
DATE 2/11/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER PARTLY CLOUDY - 10's °F
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Instrument calibration ✓ - O.K.
S&M strikes several tile lines E. of building 72 which match the configuration of lines on the drawings but not the locations, as the drawings indicate that the tiles should have run to the East (and parallel) to the trench alignment.

Cayuga continues to install pipe from DW-9 - have reached the second elbow (45°) from DW-9 NE of WXYZ building.

12:00- 12:30 Lunch
Observe staining of soil in trench E. of building 72. Placing OVM tip under soil clod produced 50 ppm reading. Inform Laidlaw, who begins continuous air monitoring. The contamination appears localized as continuing excavation produces no OVM response on Laidlaw's or my instrument. OVM response on the suspect area drops to less than 1 ppm within a half hour.

15:30 Offsite

Signed: Dan Welch

TO: Brian Smith / File

NO. 84

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CGA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/14/94 TIME IN TIME OUT
WEATHER SUN - 10°S
PRESENT AT SITE DCW

8:30 On site BAT plant. Instrument calibration √ - O.K. Cayuga welding pipe N. of "T". S+M excavating last portion of trench (immediately S. of DW-10.) Water is noted seeping into trench in this area - probably from water line backfill.

12:00 - 12:30 Lunch

Travel to Offsite system - take measurements from top of well plate to vault floor in each vault (except EW-1) as well as the depth of standing water in the vaults.

Vault	Plate top to floor	Water Depth
EW-6	0.38 ft	0.33 ft
EW-5	0.25 ft	0.20 ft
EW-4	0.27 ft	0.22 ft
EW-3	0.27 ft	0.27 ft
EW-2	0.24 ft	0.19 ft

15:00 Offsite

Signed: Dale Wick

TO: Brian Smith / File

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NO. 85

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/15/94 TIME IN _____ TIME OUT _____
WEATHER SUN 20's °F
PRESENT AT SITE DCW

8:30 On site BAT plant S&M installing Bilco vault doors. Cayuga makes the last welds on the pipe in the trench. All trench pipe is now installed. Cayuga starts air test on 2-inch line from DW-9 to DW-10 at 11:20 @ 32 psi

11:30 Offsite

Signed: Dave Wolf

TO: Brian Smith / File

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NO. 86

FIELD REPORT

JOB NO. 933-9068
DATE 2/16/94 TIME IN TIME OUT
PROJECT TDS CCA ON-SITE
WEATHER SUN 20's °F
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant Take water levels in eleven overburden wells on site. Cayuga air testing lines: test on 2-inch line from DW-10 to DW-9 passes, test on 6-inch line from DW-10 to DW-9 passes and test on 6-inch line from DW-10 to DW-11 to DW-12 passes. Test on 2-inch line from DW-10 to DW-11 to DW-12 stated at 11:45 @ 32 psi. Surveyors shoot pipe elevations between DW-12, DW-10 and DW-9.

16:00 Offsite - talk to surveyor about repairs to pipe grade needed.

Signed: Dave Wahl

TO: Brian Smith / File

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NO. 87A

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS/Onsite CQA/NY
LOCATION Niagara Falls
CLIENT TDS
OWNER TDS
CONTRACTOR DenDrill

DATE 2-16-94 TIME IN 8:00 TIME OUT 17:30
WEATHER P-Sunny 30-40°F
PRESENT AT SITE KFN (GAI)
Dick Moss & Dan Trautman of DenDrill

8:10 - Met the Above mentond Individuals AT well 93-01(1) and Along with Al Manzelli of Faidley & Dave Wilson of Golder. Dick decided that in order to Access well 93-01(1) to decomission it he would need to have a Backhoe to make path for the Drill Rig.

9:00 - 11:30 Decomissing well 93-04(0) in general accordance with the work plan

11:30 - 12:15 Lunch

12:15 - 14:30 completed well 93-04(0) Decomissing

11:55 - 17:25 Decomissoned well 93-05(0) in general accordance with the work plan.

17:30 - K. Nossaman OFFSite

gned: Kenneth Nossaman

TO: Brian Smith | File

NO. 87b

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FIELD REPORT

JOB NO. 933-4068
DATE 2-7-94 TIME IN 7:00 TIME OUT 15:10
PROJECT TDS/ Onsite CQA/ NY
WEATHER Sunny 30 - 45°F
LOCATION NIAGARA FALLS
PRESENT AT SITE K. NOSSAUGE (KFN) OF GAI, DICK MOSS & DAN THOMPSON OF PENN DRILL
CLIENT TDS
OWNER TDS
CONTRACTOR PENN DRILL

7:00 - ARRIVED AT WELL 93-01(I) IN ORDER TO SEE IF THE DRILL RIG COULD SAFELY GET TO THE WELL.

- DICK DECIDED THAT HE COULD NOT REACH THE WELL DUE TO SNOW/ICE AND PONDED WATER IN FRONT OF THE WELL.

- 7:30 - MET JOHN DEVIC OF TDS TO DISCUSS THIS PROBLEM. JOHN INFORMED US THAT HE WAS MOST CONCERNED WITH THE 2 OVERBURDEN WELLS (93-04(O) & 93-05(O)) BEING DECOMISSIND FIRST AND THAT 93-01(I) COULD WAIT UNTIL SPRING TO BE REMOVED.

- 7:30 - 12:00 DRILLING MOVED DRUMMED SOIL CUTTINGS & BACK FILLING HOLES W/ GRAVEL, KFN DOING WATER LEVELS AROUND SITE

12:00 - 13:00 LUNCH

13:00 - 15:00 KFN DOING WATER LEVELS AROUND SITE

15:10 KFN OFFSITE & ENROUTE TO OFFICE

signed: [signature]

TO: Brian Smith | File

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NO. 88A

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/17/94 TIME IN TIME OUT
WEATHER SUN 30's
PRESENT AT SITE DCW

8:00 On site BAT plant. Troxler standardization O.K. S+M adjusting out-of-spec pipe grades as surveyed yesterday. A re-survey shows all pipe from DW-9 to DW-10 to "T" meets grade specs. I take compaction readings at three stations for the final lift of #1A stone. Air test of 2-inch line from DW-10 to DW-11 to DW-12 passes. All the in-ground pipe has now passed the pre-backfill pressure tests.

12:00 - 12:30 Lunch

S+M continues to place lift 2 of #1A stone from DW-9 to DW-10. Thickness of stone lift - O.K. Three loads of #1A stone delivered today for a total of 30.

16:00 Offsite

Signed: Dan Wolf

TO: Brian Smith / File

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NO. 88B

FIELD REPORT

JOB NO. 933-9068
DATE 2/18/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SUN - 40's of
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Troxler standardization - O.K. Ferguson (electric) placing conduit in trench from DW-9 to DW-10. Std backfilling trench with lift four of #1A stone. Thickness and compaction of lift checked as they proceed. All O.K.

I tell A. Marzelli that BAT will expect a refund for the use of 304 stainless (instead of the speced 316) for the pump risers and stilling wells.

Two loads of #1A stone delivered today for a job total of 32. Sampled load 31 for sieve analysis - Sample # 021894-7

15:00 Offsite

Signed: Dave Wk

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TO: Brian Smith / File

NO. 89

FIELD REPORT

JOB NO. 933-9068 | DATE 2/22/94 TIME IN | TIME OUT

PROJECT TDS CQA ON-SITE | WEATHER OVERCAST - 20's

LOCATION WHEATFIELD | PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

8:30 On site BAT plant. Troxler standardization - O.K. Monitored installation of #1A stone and #2 ROC stone (in place of soil) under gate 6 drive. Checked thickness and compaction of #1A stone - lift 4 at four stations - All tests pass.

10:00 Travel to offsite system with K. Nossavage to aid J. Devic / FLI in sampling and restarting the system which detected a leak and automatically shut down the afternoon of the 21st.

12:00 - 12:30 Lunch

The pump shutdown allowed Zone 1 water to flood the vaults - in some cases several feet deep. The system was restarted as surface water seeping through a poor vault - half seal in vault four probably tripped the basin float switch - no piping leak was noted in vault four (the indicated leak location). A three-inch pump was utilized to remove surface water ponded approx. 8-inches deep over the EW-2 manhole. This was unsuccessful.

Signed: Dave Welch

TO: Brian Smith / File

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NO. 90

FIELD REPORT

JOB NO. 933- 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 2/24/94 TIME IN TIME OUT
WEATHER OVERCAST - 30's
PRESENT AT SITE DCW

8:30 On site BAT plant. Troxler standardization - O.K. Take compaction tests of #1A stone - lift 4 - at stations 25 26. Both pass. Compaction tests complete - all tests passed - Troxler nuclear gage demobilized.

9:30 Check submittals against delivered materials for part of system we are certifying.

Concerns:

① Pipe O.D. in submittals for in-vault piping is actually the I.D. Probably a submittal type.

② Pump specs on submittal state 1/3 HP - 2 wire etc. Actual pump is 1/2 HP - 3 wire etc. I inform A. Marzell.

11:30 Offsite

Signed: Dan Wh

TO: Brian Smith / File

NO. 91

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 3/1/94 TIME IN TIME OUT
WEATHER SUN 30's
PRESENT AT SITE DCW

13:30 On site - BAT plant
Inspected all six vaults. All pumps / risers / stilling wells installed except for DW-9. Pump control panels installed in EW-7 and DW-12. Cover on EW-8 scuttle is bent and will not latch. Many of the vaults leak at the door frame / vault seal. S+M is aware of these problems and will correct.

Discuss with A. Marzell. issue of the supplied well pumps (½ HP) not matching the approved ⅓ HP pumps. Apparently there was a communication breakdown between Laidlaw and Golder Associate's subcontractor engineer, Russ Healey. A. Grasso will work to resolve this question.

15:00 Offsite

Signed: David Wick

TO: Brian Smith / File

NO. 92

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FIELD REPORT

JOB NO. 933-9068
DATE 3/4/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SUN - 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

14:30 On site - BAT plant
Perform walk through of all vaults and treatment building with Golder Associates' certifying engineer, J. Fassett. The purpose of this visit was to familiarize him with the field installation of the system

Signed: Dan Welsh

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
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Telephone (716) 691-1156
Fax (716) 691-5109

NO. 93

FIELD REPORT

JOB NO. 933-9068
DATE 3/9/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST - 20°
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant - check vault piping dimensions, go over open submittals with new Laidlaw personnel. Check work offsite, contractor is still unsure of manhole cover pattern. I tell him my conversation with Syracuse Castings yesterday indicated that a 3' dia heavy duty bottom flange manhole is # 101b.

12:00 - 13:00 Lunch

Pendrill has arrived to clear DW-9 of rock debris - they set up to ream the hole. A winch problem and the late arrival of the air compressor prevent their getting started today. Begin at 8:00 tomorrow.

Signed: Dan Welch

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Fax (716) 691-5109

TO: Brian Smith / File

NO. 94

FIELD REPORT

JOB NO. 933-9068
DATE 3/10/94 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER SUN 20's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Air monitoring instrument calibration O.K. Drillers ream DW-9 with 9-inch tricone bit to clear caved area. Hole clear to 31.0 Ft Eg below top of vault.

11:30 - 12:30 Lunch - When drillers try to remove wash tee from 10-inch overburden casing the casing is pulled out of the grout. After some Golder Assoc. / Laidlaw / BAT / Penndrill discussions, overburden casing ~~will~~ will not be reinstalled, but rather the 8-inch stainless screen and riser will be installed as a well complete with sandpack and grout seal.

Bore is reamed and blown clean twice more but caving persists just below 20 Ft below vault top.

17:00 Off site

Signed: [signature]

TO: Brian Smith / File

NO. 95

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CCA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 3/11/94 TIME IN TIME OUT
WEATHER SUN 20's
PRESENT AT SITE DCW

8:00 On site BAT plant. Drillers report DW-9 'core is still open since last night as they were able to remove the bit without it sticking. Attempt is made to pass a pipe the same diameter as the screen (8") down the borehole. It does not pass the coved area. The screen, which has a pointed bottom, is lowered into the bore but it does not pass any further than the pipe did.

11:30 - 12:30 Lunch
After some discussion, decision is made by Laidlaw to ream hole to 10 or 12 inches using spin casing to protect the overburden.

14:30 Offsite

Signed: Dave Welch

TO: Brian Smith / File

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NO. 9

FIELD REPORT

JOB NO. 933-9068
DATE 3/15/94 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER RAIN - 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

13:30 On site BAT plant to observe 2-hour, 75 psi hydro test of 2-inch line from EW-7 to treatment building. Pressure will not hold 75 psi, but drops back to 65-60 psi after ½ hour or so. Plumbers suspect air in the line. A call to Sabur Tech., the piping manufacturer's rep., confirms this probability. Plumbers attempt to purge line of air

Drillers at DW-9 spin 14-inch casing through vault floor to 16 ft below vault top to temporarily case off the overburden.

16:30 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

NO. 97

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Fax (716) 691-5109

FIELD REPORT

JOB NO. 933-9068
DATE 3/16/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER SNOW - 20's °F
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:00 On site BAT plant. Drillers set up to ream DW-9 with a 12-inch tricone bit. Air monitoring instrument calibration check O.K.

9:00. Called to off site system to flip DIP switches on leak detection panels to permanently acknowledge alarm. Checked computer screen in J Davis's office. EW-2 in high alarm. Elevation of water in well 0.1 ft below high alarm set point. Flow rate O.K.

10:30 Back at DW-9 - reaming continues

11:20 Hydro test on 2-inch line from EW-7 to building starts - 85 psi

11:30 - 12:30 1 inch
Drillers resome reaming. Hydrotest passes at 13:20 - 85 psi.

Reaming ends today at 27 ft below vault top.

17:00 Offsite

Signed: Dirk Wuhs

TO: Brian Smith / File

NO. 98

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 3/17/94 TIME IN TIME OUT
WEATHER SUN 20's °F
PRESENT AT SITE D. WEHN

8:00 On site BAT plant. Air monitoring instrument caliberation check - O.K. Drillers set up.

8:45 12- inch reaming start on DW-9 from 27 ft. below vault top.

14:00 Reaming complete at 31 ft below vault top. 15 ft long 8-inch dia # 20 slot 304 S.S. screen installed. Sand pack (#4 Q-rock) installed.

17:30 Offsite

Signed: David Wehn

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Fax (716) 691-5109

TO: Brian Smith / File

NO. 99

FIELD REPORT

JOB NO. 933-9068	DATE 3/18/94 TIME IN . TIME OUT
PROJECT TDS CQA ON-SITE	WEATHER SNOW - 20's °F
LOCATION WHEAT FIELD	PRESENT AT SITE D WEHN
CLIENT	
OWNER	
CONTRACTOR	

8:30 On site BAT plant - DW-9. Winch jams while hoisting 14" spin casing. When repaired, casing is pulled up 2 ft and bentonite pellets added (3/4 of 5 gallon pail). Well is grouted to bottom of vault with 5 bags cement / ½ bag bentonite grout.

11:00 Check off-site system computer bar graphs. System O.K. - no alarm reports - good flows.

11:30 Offsite

Signed: Dave Wehn

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TO: Brian Smith / File

NO. 100

FIELD REPORT

JOB NO. 933-9068
DATE 3/25/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER OVERCAST 30's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site BAT. Inspected all vaults EW-7, EW-8, DW-10, DW-11, DW-12 appear to be complete except for pipe insulation. Grating is installed but not bolted down. Conduits in DW-10, DW-12 and EW-8 appear to be leaking through the pull-boxes into the vaults. DW-9 has no interior components installed, the doors need the be installed, power and communication cables pulled and drilling debris removed.

System start up scheduled for early April

9:40 Move to J. Dric's computer lab. Check status of off-site system. Well #2 in high alarm state at 525.2. Pumping rate OK. I record daily flow rates from printer from last month for the sewer discharge report

10:30 Offsite

Signed: Dan Welk

TO: Brian Smith / File

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NO. 101

FIELD REPOR.

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/5/94 TIME IN TIME OUT
WEATHER CLOUDY 50 °F
PRESENT AT SITE DCW

9:00 On site BAT plant. Discuss with A. Marzelli and Penndrill how to seal DW-9 casing / vault gap. A link-seal would be preferred.

9:51 Begin to take on-site water levels (as specified in on-site CMI plan) prior to on-site system start up

11:30 Observe start of 24-hour air test of 6-inch line from building to DW-12, DW-11, DW-10, DW-9. This is the final (post backfill) test.

12:00 - 12:30 Lunch
Resume taking water levels

13:45 Observe termination of sample port ball valve downstream of pH mixing tank so we may hook up a sampling hose. The connection must be made to a ½-inch female pipe thread.

Offsite

Signed: Dave Wahl

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TO: Brian Smith / File

NO. 102

FIELD REPORT

JOB NO. 933-9068 | DATE 4/6/14 TIME IN | TIME OUT
PROJECT TDS CQA ON-SITE | WEATHER SNOW 30's °F
LOCATION WHEATFIELD | PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

10:00 On site BAT plant after gathering materials to install a large (12-inch dia) protective casing around well 87-04(3) to enable the installation of a data logger. I build the concrete form, prepare the casing and obtain a mixing drum and other items.

11:45- 12:30 Lunch
The area around 87-04(3) is leveled, the concrete mixed and poured and the casing installed. The installation is very similar to that specified in design modification # 15 for the off-site extraction system

14:00 Additional water levels for on-site system monitoring are obtained

15:00 offsite

Signed: Dave Wik

TO: Brian Smith / File

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NO. 103

FIELD REPOR.

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/7/94 TIME IN TIME OUT
WEATHER Sun 50°F
PRESENT AT SITE DCU

15:00 On site BAT plant to witness final post-backfill hydro test of 2-inch line from building to DW-12, DW-11, DW-10 and DW-9. Test starts at 15:00

17:00 2-hour hydro test of above line passes. Offsite

gned: Dave Weha

TO: Brian Smith / File

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NO. 104

FIELD REPOR.

JOB NO.	933-9068	DATE 4/8/94 TIME IN	TIME OUT
PROJECT	TDS CQA ON-SITE	WEATHER Sun 50's °F	
LOCATION	WHEATFIELD	PRESENT AT SITE DCW	
CLIENT			
OWNER			
CONTRACTOR			

8:00 On site BAT plant Travel to off site system to observe how Grundfos control boxes were used to connect the pumps in the wells to the main control panel (in-vault). These special controllers are apparently not explicitly called for in the specs so Laidlaw returned them. Grundfos representatives state the pump won't run without them, so they are ordered.

I remove dataloggers from 93-02(1) and 89-17(1) after downloading them, then install them in 87-04(1) and 87-04(3) in preparation for the start-up of the on-site system

14:00 Offsite

Signed: David Wuk

TO: Brian Smith / File

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NO. 105

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ONSITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/11/94 TIME IN TIME OUT
WEATHER Sun 50's °F
PRESENT AT SITE DCW

9:00 On site BAT plant. Control boxes (from Grundfos) for well pumps arrive and are prepared for installation.

John Raven from Wendel Eng. arrives for an electrical inspection of the vaults. We inspect all six.

Problems: Vault 8 lid will not latch
Conduits leak into vaults in EW-8 and DW-12. This is against specifications and Laidlaw has been notified of this problem during inspections by Golder Assoc. on 3/1/94 and 3/25/94.
DW-9 installation incomplete

Laidlaw is notified of these problems.

Once back at the office, I review conduit specs and National Electric Code.

Signed: Dave Wik

TO: Brian Smith / File

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NO. 106

FIELD REPORT

JOB NO. 933 9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/12/94 TIME IN TIME OUT
WEATHER Overcast - 40's F
PRESENT AT SITE DCW

8:00 On site BAT plant. Deliver 5 gal. of water for treatment building Gas Chromatograph. Check wells B-8, B-14 and 87(12) to see if a one-inch bailer will pass down the well 6-feet or so. It does in all three wells.

I put together and give to B. Smith a table of elevation estimates (from the pipe survey) of the top of casing and bottom of hole for the six extraction wells.

10:00 I inform Laidlaw (A. Marzelli, Mark Noack, John Stokowski) and BAT (Brian Smith and an engineer) that the leaking conduit situation is unacceptable despite attempted repairs and that it is Golder's recommendation that the leaks be found and repaired which may require that the conduit be replaced. Laidlaw admitted knowledge of the leaks and that unsuccessful efforts had been made to plug the conduit ends with foam

Laidlaw states that they would like our reasons for conduit rejection in writing

Signed: Dave Welch

TO: Brian Smith / File

NO. 107

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FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/12/94 TIME IN TIME OUT
WEATHER Overcast - 40°F
PRESENT AT SITE DCW

Laidlaw brings in #2 RCC stone to backfill around the vaults and places this stone (and sonotubes for bollards) around EW-7

Observe vault DW-9 area. Stainless steel casing (8-inch dia) is cut off to correct height but vault floor to casing seal has not been made.

Signed: Dan Dah

TO: Brian Smith / File

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NO. 107

FIELD REPORT

JOB NO. 933-9068 DATE 4/18/94 TIME IN TIME OUT

PROJECT TDS CQA ON-SITE WEATHER Cloudy - Rain 60's oF

LOCATION WHEATFIELD PRESENT AT SITE DCW

CLIENT

OWNER

CONTRACTOR

9:00 On site to decommission 93-01(1). Drillers are late. Eventually I discover that a message was left at the Laidlaw Trailer late yesterday ~~by~~ by Penndrill stating that the crew would arrive at around noon, not nine. The message was not passed on.

13:00 Drillers arrive. A discussion between them, myself, and the property owner reveals that the owner now wants notification immediately prior to any access as he does not want his Field, now planted with wheat (in Wheatfield, NY, yet) rutted. The field is currently quite soft.

13:30 Offsite

Signed: Dave Wilk

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
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NO. 108

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CGA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/14/94 TIME IN TIME OUT
WEATHER P. Cloudy 60°F
PRESENT AT SITE DCW

9:30 On site BAT plant to clarify final submittals required as well as discuss design modification No. 8 (conduit replacement).

10:30 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

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NO. 109

FIELD REPORT

JOB NO. 933 - 9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/15/94 TIME IN TIME OUT
WEATHER SUN 70's °F
PRESENT AT SITE DCW

9:45 On site BAT plant with John Rizzo and Jeff Fassett, the certifying engineer for this project. I showed both of them the entire system to update J.F. on the status of the project and to point out to J.R. the inspection items that he would be expected to cover in my absence while on vacation.

11:00 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

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NO. 110

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS ON SITE
LOCATION BAT - WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/18/94 TIME IN 1330 TIME OUT 1500
WEATHER SUN 50's °F
PRESENT AT SITE JRR

1330 On site BAT plant. Plumbers installing piping in vault for DW-9. John S. (Laidlaw) said the pretreatment building may be ready on 4/20/94 (out side chance) and that they will start DW-7 and DW-8. John says this is optimistic. John said he is getting prices for the conduit replacement and is still negotiating with electricians (Ferguson) about replacement. Mark said panels in DW-9 will be installed Weds. 4/20/94

1500 Off site

Signed: [signature]

TO: BRIAN SMITH / FILE

NO. 111

Golder Associates
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FIELD REPORT

JOB NO. 933-9078
PROJECT TDS ONSITE CPA
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4-20-94 TIME IN TIME OUT
WEATHER SUNNY 40° °F
PRESENT AT SITE JDR

1300 - ON SITE AT DAF FACILITY. PLUMBERS WERE REMOVING WATER THAT HAD ACCUMULATED IN VAULT FOR EW-08. WORK CONTINUING ON PRETREATMENT BUILDING. LAIDLAW HAD TOLD ME ON 4/19/94 THAT THEY WERE GOING TO EXCAVATE FOR REPLACEMENT OF CONDUIT. JOHN S. TOLD ME THEY WILL BE STARTING TOMORROW INSTEAD OF TODAY. HE SAID THAT THE ELECTRICIANS WILL BE INSTALLING CONDUIT ON MONDAY 4/25/94 AS WELL AS PANELS AT DW-09. JOHN S. SAID THE THERMAL OXIDIZER MAY BE READY SOON THEN A TEST WITH CLEAN WATER WILL BE PERFORMED FOLLOWED BY START UP of WELLS.

1500 OFFSITE

Signed:

TO: BRIAN SMITH / F.-E

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NO. 112

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS/CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 4/21/94 TIME IN TIME OUT
WEATHER 40s SUNNY
PRESENT AT SITE JPR

0930 ON-SITE - BAT FACILITY - CONTRACTORS (HASELEY TRUCKING) EXCAVATING FOR REPLACEMENT OF CONDUIT - STARTING AT EW-07
OVM READINGS TAKEN AT 1000 AND 1030 WITH A READING OF 0.0 PPM BOTH TIMES
HASELEY EXCAVATING TO 2½' BGS THEN PLACING 6-INCHES OF 1A STONE
A SAMPLE OF THE 1A STONE WAS TAKEN
TRENCH WAS SOFT IN SPOTS BEYOND 2½-FEET

1330 SPOKE WITH ALEX AND HE SAID THERE IS GOING TO BE A CHANGE. THE TRENCH WILL NEED TO BE EXCAVATED TO THE GEOTEXTILE SEPARATING THE 1A STONE AND THEN GENERAL FILL - THE CONDUIT WILL BE PLACED ON TOP OF THE GEOTEXTILE THEN 6-INCHES OF 1A STONE WILL BE PLACED AROUND CONDUIT - THEN A LAYER OF GEOTEXTILE - GENERAL FILL THEN STONE THEN ASPHALT.

1410 OFF-SITE

gned:

TO: BRIAN SMITH / FILE

NO. 113

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FIELD REPORT

JOB NO. 933-9068 DATE 4-28-94 TIME IN TIME OUT

PROJECT TDS ON-SITE CQA WEATHER OVERCAST 40° F.

LOCATION WHEATFIELD PRESENT AT SITE JPR

CLIENT

OWNER

CONTRACTOR

0930 - ON SITE - BAT FACILITY - HASELEY TRUCKING EXCAVATING TRENCH BETWEEN OW-7 AND OW-8. REMOVING GENERAL FILL ABOVE THE GEOTEXTILE LAYER. PLACED APPROXIMATELY 2-INCHES OF 1A STONE ABOVE GEOTEXTILE.

JOHN S. (LOCKPORT) SAID CONDUIT MAY BE PLACED TODAY AND THAT THE ELECTRICIANS WILL PULL WIRE FROM THE OLD CONDUIT.

JOHN S. CONCERNED THAT THE GENERAL FILL WILL BE TOO SOFT TO PLACE AND COMPACT IN THE TRENCH ABOVE THE STONE. I OBSERVED A PILE OF GENERAL FILL THAT WAS OPENED UP AND IT APPEARED TO BE DRY ENOUGH TO WORK IN THE TRENCH. JOHN S. SAID THAT HE WILL USE STONE FOR THE BACKFILL IF BELL APPROVES. JOHN S. SAID HE HAS A CALL INTO B. SMITT ON THE SUBJECT.

Signed:

TO: BRIAN SMITH / FILE

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NO. 114

FIELD REPORT

JOB NO. 933-9068
DATE 4/29/94 TIME IN 0730 TIME OUT 1530
PROJECT TDS ONSITE
WEATHER OVERCAST ≃45°
LOCATION Bell Aerospace/Textron
PRESENT AT SITE BEC
CLIENT
OWNER
CONTRACTOR

0730 ARRIVED ONSITE TALKED WITH JOHN S about JOB. He INFORMED ME THEY WERE EXCAVATING TRENCH THEN FILLING WITH ≃6 IN. #1A STONE, LAYING CONDUIT, ANOTHER ≃6 IN. #1A STONE AND FINALLY FILLING REST of TRENCH WITH #2 STONE
0800 TOOK OVM READING 0.0 ppm, NOTICED A LOT of WATER IN TRENCH ON SOUTH EAST CORNER. (WALMORE & NIA. FALLS. BLVD.)
0830 TOOK OVM READING ALONG TRENCH 0.0 ppm
0900 TOOK OVM READING ALONG TRENCH 0.0 ppm, WORKERS STARTED PUMPING WATER FROM CORNER OF TRENCH
0930 TOOK OVM READING ALONG TRENCH 0.0 ppm, STOPPED PUMPING WATER. LAYER 1 of #1A STONE LAID.
1000 TOOK OVM READING ALONG TRENCH 0.0 ppm
1100 TOOK OVM READING ALONG TRENCH 0.0 ppm, PLACED CONDUIT IN TRENCH
1230 OVM READING 0.0 ppm, PUT 2ND LAYER of #1A STONE IN TRENCH
1400 OVM READING 0.0 ppm, PLACED #2 STONE IN TRENCH. PARTICULATE METER WAS NOT USED BECAUSE IT RAINED THE NIGHT BEFORE AND THERE WAS NO DUST.
1420 AIR DRIED GROUND, WIND PICKED UP, PARTICULATE METER IS BEING USED, #2 STONE IS BEING PLACED IN ≃1 FOOT LIFTS, ROLLER IS BEING USED TO COMPACT IT, FINAL LIFT IS ALSO BEING COMPACTED BY HAND COMPACTOR. BETWEEN EW7 & EW8 CONDUIT SIZE CHANGES FROM 1¼" TO 2"
1440 OVM READING 0.0 ppm. PARTICULATE METER NEVER READ A SUSTAINED AMOUNT.
1530 LEAVE SITE

gned: B. E. Smith

TO: BRIAN SMITH / FILE

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NO. 115

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 5/2/94 TIME IN TIME OUT
WEATHER Partly Cloudy - 50's
PRESENT AT SITE DCW

9:00 On site BAT plant. Haseley (excavation subcontractor) is backfilling trench from EW-7 to EW-8 with 2-inch ROC stone. Three lifts of this stone were placed on top of the #1A stone (over the new conduit) - each lift was compacted with a small vibratory roller. Compaction appears acceptable. Lifts are approx. 1 foot thick prior to compaction.

Haseley is also excavating (from the treatment building to DW-12) the native backfill from over the old conduit to within a few inches of the geotextile

Electricians have placed 1½" conduit from EW9 to EW-8 instead of the originally specified 1" to ease the pulling of the electrical wire. The wire has not yet been installed. Electricians plan to drill new conduit entry holes in vaults EW-7 and EW-8 but use the existing holes in DW-9 through DW-12. I warn them not to exceed the code maximum "degrees of bend of conduit" which Ferguson (Dave) states is 360° between junction boxes.

Signed: Dan Wuk

TO: Brian Smith / File

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NO. 116

FIELD REPORT

JOB NO. 933-9068 | DATE 5/2/94 TIME IN | TIME OUT
PROJECT TDS COA ON-SITE | WEATHER
LOCATION WHEATFIELD | PRESENT AT SITE DCW
CLIENT
OWNER |
CONTRACTOR

11:00 Haseley moves to DW-9 and begins to remove backfill from old conduit.

12:00 - 12:30 Lunch

Haseley resumes work at DW-9 and places 2-inch ROC and #1A stone from EW-8 to building

Dust levels while placing stone from EW-7 to EW-8 exceed action level of 0.15 mg/m^3 to 0.02 mg/m^3. This is due to high wind gusts sweeping the parking lot, not the stone loading operation. Only one exceedance occurs.

Electricians pull wire from EW-7 to EW-8 old conduit so it may be re-used.

About 12 loads of #1A stone delivered since 4/20/94 for a total of 49. Sample # 050294-9 taken from load 46.

Signed: Dave Wiki

TO: Brian Smith / File

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NO. 116

FIELD REPORT

JOB NO. 933-9068
DATE 5-3-11 TIME IN 8:10 TIME OUT 15:40
PROJECT TDS - CQA onsite
WEATHER P. Sunny 50-60°F
LOCATION N.F. NJ
PRESENT AT SITE K. Nussbaum (KFN)
CLIENT TDS
OWNER TDS
CONTRACTOR Landlaw, Haseley & Ferguson

- Haseley BACKFilling w/ #2 Stone Between EW-7 & EW-8. The #2 Stone was compacted w/ a small Roller in ≈ 1' Lifts

- Haseley Excavating in the Area Between DW-9 and DW-10 to w/i ≈ 6" of the Geotextile.

- Haseley Starts to BACKFill w/ #2 Stone Between EW-8 and the Treatment Building. The Stone was compacted in ≈ 1' Lifts with a Small Roller.

- Lunch 12:00 - 13:00

- Haseley placing ≈ 6" of #1A Stone over conduit Adjacent to the Treatment Building

- Haseley Stops @ 15:30

- KFN OFFSite @ 15:40

gned: Kurt Nussbaum

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 117

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS - CQA onsite
LOCATION N.F., NY.
CLIENT TDS
OWNER TDS
CONTRACTOR Laidlaw, Haseley + Fergison

DATE 5-4-94 TIME IN 8:25 TIME OUT 15:35
WEATHER Sunny 60-65
PRESENT AT SITE K. Nossaugh (KFN)
John Rowe (Wendel)

- Haseley placing LAST LIFT OF #2 Stone Between EW-8 And Treatment Building.

- Fergison Electric pulling wire Between EW-7 And EW-8.

- Haseley excavating Between DW-9 and DW-10.

- John Rowe from wendel was on site to look at the conduit/wiring Between EW-7 And EW-8. John said it looked O.K.!

- Fergison Laying conduit from DW-9 to DW-10

- Haseley placing 1A Stone over conduit in DW-9 AREA

- 12:00 - 13:00 Lunch

- Haseley placing #2 Stone in ≈ 1' Lifts And compacting w/ A Small Roller in the DW-9 Area.

- Haseley excavating From DW-10 South to the Roadway

- KFN offsite @ 15:35

gned: Kenneth Nossaugh

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 118

FIELD REPORT

JOB NO. 933-9068
DATE 5/5/94 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:15 On site BAT plant. Give J. Devic estimate of total material excavated at project completion (≈ 3500 y^3).

Haseley is stoneing conduit installed from DW-9 to DW-10 - method as previously described. Haseley is also excavating soil from over old conduit just east of Building 72.

12:00 - 12:30 Lunch
Haseley finished removeing soil from DW-11 to "T" and has turned south towards DW-12. The #1A stone, conduit and 2-inch Roc stone are placed from DW-11 to "T".

15:15 Travel to Milleville property (Susan) to check access for drill rig to put in replacement well for 93-01(1), which is to be abandoned. Best access (though a long drive) is from the south off Jagow Rd. Bridges from the Milleville farm to the ~~se~~ north are too weak to support a rig

16:00 Offsite

Signed: Dave Wilson

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 119

FIELD REPORT

JOB NO. 933- 9068
DATE 5/6/94 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER CLOUDY - RAIN 50's
LOCATION WHEAT FIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:20 On site BAT plant. Relay to J. Devic info on well access (see field report on 5/6/94). Call Penndrill, arrange crew for mid next week to abandon 93-01(1) and 89-08(1) and install 94-01(1).

5 loads of #1A stone delivered yesterday for a total of 54 Sample # 050594-10 taken from load 51.

Haseley excavating from "T" south to DW-12 and placing 2-inch ROC stone from DW-9 to DW-10 the pace of work is good. Haseley has brought in a large vibrating roller to compact the top lift of the ROC stone, which is nearly flush with the ground surface.

11:00 Sub conduit #1A stone is placed from "T" to DW-12. Soil is excavated from DW-12 to building.

12:00- 12:30 Lonch
Haseley continues to place & compact 2" ROC from DW-9 to DW-10. Electricians place conduit from "T" to DW-12 and from DW-12 to building. Haseley backfills conduit. 16:00 Offsite

Signed: Dave Wahl

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 120

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 5/9/94 TIME IN TIME OUT
WEATHER
PRESENT AT SITE DCW

8:30 On site BAT plant. Haseley not on site today, electricians are waiting for pull box to arrive at "T". I photograph interior of treatment building for job files.

Boiler lagging (insulation) has been removed from thermal oxidizer to allow for welding inspector M. Noack states boiler may be run without it.

10:00 offsite

Signed: Dan Wolf

TO: Brian Smith / File

NO. 121

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 5/11/94 TIME IN TIME OUT
WEATHER OVERCAST - 60°s
PRESENT AT SITE DCW

9:30 On site BAT plant awaiting drillers for the installation of 94-01(i). This well replaces 93-01(i).

10:30 Drillers arrive and are shown the location of the well behind the Milleville farm. Drillers get water and seek a compressor for air drilling.

12:00 - 13:00 Lunch
Drillers arrive and set up rig to auger.

14:45 Augering begins. Lockport dolomite is reached at 11.4 ft bgs. Air compressor was not delivered on schedule - no coring possible

16:30 offsite

Signed: Dan Welch

TO: Brian Smith / File

NO. 122

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

FIELD REPORT

JOB NO. 933-9068
DATE 5/12/94 TIME IN TIME OUT
PROJECT TDS COA ON-SITE
WEATHER OVERCAST - 50's
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

8:30 On site 94-01(1). Drillers prepare rig for coring. Air compressor arrives.

9:45 Coring begins - poor air return (mud in hole)

11:30 - 12:30 Lunch / parts run
Coring resumes, mud is cleared

14:00 Drill rods jam in rock and snap off core barrel. Drillers work to retrieve it

15:30 Core barrel is still stuck. Fishing tools must be brought in tomorrow. Offsite

Signed: Dale Wah

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 173

FIELD REPOR.

JOB NO. 933- 9068
PROJECT TDS C01 ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 5/13/94 TIME IN TIME OUT
WEATHER SUN 60°s
PRESENT AT SITE DCW

8:15 On site at well 94-01(1). Drillers set to work with fishing tools to retrieve core barrel.

12:00 - 12:30 Lunch
No success in retrieval. The drillers will try to free the core barrel until 15:00. If it can not be freed the hole will be abandoned and a new core started next to the old one

13:30 offsite

Signed: Dan Wuhr

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 124

FIELD REPORT

JOB NO. 933-9068
DATE 5/16-5/23 TIME IN TIME OUT
PROJECT TDS CQA ON-SITE
WEATHER
LOCATION WHEATFIELD
PRESENT AT SITE DCW
CLIENT
OWNER
CONTRACTOR

NEW WELL 94-01(1)
SUMMARY OF 5/16/94 THROUGH 5/23/94

Because the core barrel could not initially be removed from the first hole, 94-01(1) was re-drilled approx. 5 ft south of its first position. The hole was completed on 5/20/94 at 38.0 Ft bgs for a 1.1 ft socket into Zone 2. Packer testing of the corehole revealed very low hydraulic conductivity in the intended screened interval, so the hde was grouted up. On 5/23/94, the core barrel was finally freed from the first hole (depth 16 ft) and this hole too was grouted shut.

Signed: Dan Wadsworth

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 125

FIELD REPORT

JOB NO. 933-4068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 6/6/94 TIME IN TIME OUT
WEATHER Sun - Breezy - 20's
PRESENT AT SITE DCW

13:30 Arrive at offsite extraction system - check vault floor and leak detetion pan water levels.

EW-6 S. Pan - 0.04'
N. Pan - 0.14'
Floor - Damp

EW-5 S. Pan - 0.02'
N. Pan - 0.03'
Floor - 0.03'

EW-4 S. Pan - 0.02'
N. Pan - 0.10'
Floor - 0.18'

EW-3 S. Pan - 0.04
N. Pan - 0
Floor - Damp

EW-2 S. Pan - 0.05'
N. Pan - 0.01'
Floor - Damp

Change Keller dessicant tube in EW-6, EW-5, EW-4 and EW-2. Download dataloggers in 87-04(3) and 87-04(1) and change both recorders from 1 hr. to 8 hr. averaging periods

16:30 offsite

Signed: Dan Welch

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 126

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 6/7/94 TIME IN TIME OUT
WEATHER Cloudy - 70's
PRESENT AT SITE DCW

8:15 Arrive at offsite extraction system. Clean Harbors (CH) plans to excavate around all vaults except EW-1, re-seal the vault halves, and place pea gravel around the vaults to reduce the chance of frost heave. Excavated backfill to be spread on site.

Take conductivity readings in vault leak detection pans:

EW-6 N. Pan* - 1140 uS EW-5 N. Pan - 2300 uS EW-4 N. Pan* - 150
S. Pan* - 1520 uS S. Pan* - 1540 uS S. Pan* - 1120

EW-3 N. Pan - 1580 uS EW-2 N. Pan - 1670 uS
S. Pan - 1330 uS S. Pan - 1680 uS

* = sample taken from this pan for composit sample taken by KFN/DCW for lab analysis

11:30 Excavator (a very small track-hoe) arrives, begins excavating elbow just S. of EW-6. Excavation also begun at EW-6 to expose vault seals. Excavation width ≈ 1ft and extends about 1 ft below vault half seam.

17:00 Offsite - Elbow exposed, 2 side of seams at EW-6 exposed.

Signed: Dan Wicke

TO: Brian Smith / File

NO. 127

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 6/8/94 TIME IN TIME OUT
WEATHER Sun - 20's
PRESENT AT SITE DCW

8:30 Arrive at offsite system after dropping off report and other items to J. Devic at BAT. Clean Harbors (CH) is digging by hand around flange near elbow S. of EW-6 so it may be pressure (bubble) checked. Water from granular backfill around elbow is pumped onto surface. Excavator works to expose remaining two sides of EW-6.

12:00 CH applies ≈ 1.5 ft wide coating of asphalt Fibrated foundation coating (centered over seam) to vault sides of EW-6. The vault sides were scraped and dry-brushed of soil prior to coating. Mini-excavator moves to EW-5

14:00 EW-5 excavated - machine moves to EW-4. I enter EW-6. S. Pipe annulus has pooled water in it which seeps into pan. Water level in flange excavation is nearly to the top of the flange, so leak is likely to be here.

16:00 EW-4 excavation finished - machine moves to EW-3 Sealing crew skips EW-5, which is too damp to seal and begins to coat EW-4

17:30 EW-4 coated, EW-3 excavated - off site

Signed: Dave Wick

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 128

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS COA ON-SITE
LOCATION WHEATFIELD
CLIENT
OWNER
CONTRACTOR

DATE 6/9/94 TIME IN TIME OUT
WEATHER Sun 70's
PRESENT AT SITE DCW

8:00 Arrive at offsite system. EW-2 excavation is started. EW-5 is ~~not~~ now dry enough to scrape and brush in preparation for coating. Elbow excavation is pumped dry and the elbow / flange area cleaned in preparation for pressure test. Pressure test from EW-6 to sewer set up.

13:30 CH tech states that "condensate" is dripping into S. Pan of EW-6 from elbow just above the pan. It appears to me that sample port tube connection has been loosened (which is located on top of elbow over pan) and is leaking into pan.

I take conductivity measurements to confirm:

Elbow / flange excavation groundwater	=	1580 mS
EW-5 excavation groundwater	=	740 mS
EW-6 well water	=	1520 mS
"Condensate" leak into S. Pan EW-6	=	1540 mS
Distilled water - actual condensate	=	0 mS

Leak is probably from sample port tube fitting.

16:30 System shut down so pressure test bladder can be slipped over inner pipe so annulus may be pressurized.

18:30 Bladder installed - system ~~re~~started

Signed: Dirk Wahl

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 129

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS CQA ON-SITE
LOCATION WHEAT FIELD
CLIENT
OWNER
CONTRACTOR

DATE 6/10/94 TIME IN TIME OUT
WEATHER SUN 70's
PRESENT AT SITE DCW, KFN

8:00 Arrive at offsite system - CH prepares pressure test of pipe annulus from EW-6 to sewer

9:00 System shut down to replace pressure boot - the inflatable "donut" which seals the pipe annulus for testing

9:30 CH seal crew places bentonite blanket over tar seal at EW-5 then coats blanket with another layer of tar. Blanket width is about 18- inches

10:10 System restarted

11:00 KFN of Golder arrives to re-sample leak detection pans for method 601 volatiles and conductivity

S. Pan	EW-5	=	900 uS
N. Pan	EW-4	=	1110 uS
S. Pan	EW-4	=	1130 uS
N. Pan	EW-6	=	1080 uS

13:00 Seal crew moves to EW-3 to tar and bentonite it CH makes several attempts to test annulus between EW-6 and Sewer, but pressure seal "donut" will not hold the test pressure. CH tries various sealing methods (4psi)

17:30 offsite

Signed: Dave Walk

TO: Brian Smith / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 130

FIELD REPORT

JOB NO. 933-9068
PROJECT TDS / onsite / NY
LOCATION BAT offsite system
CLIENT TDS
OWNER TDS
CONTRACTOR Clew Harbors

DATE 6/11/94 TIME IN 9:00 TIME OUT 2:30
WEATHER Sunny 70-75°F
PRESENT AT SITE K. Nosenzo (Golder) Joe Norton (Clew Harbors) + various Clew Harbors staff

- KFN onsite @ 9:00 AM to check on Clew Harbors progress in pressure testing the containment pipe between EW-6 + the sewer.

- Clew Harbors informed me that they were having some trouble getting a good seal with inflatable pipe Boot. I

- KFN offsite ≈ 10:00

- KFN BACK onsite ≈ 11:30 to check on pressure test. Nothing happening, Clew Harbors still can not get a good seal!

- KFN offsite ≈ 12:15

- KFN onsite ≈ 13:30, Joe Norton informs me that they will get a seal on the pipe today + start the pressure test at 3PSI ≈ 8:00 AM Tomorrow

- KFN offsite 14:30

gned: Kenneth Nosenzo

TO: Brian Smith / File

NO. 131

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

FIELD REPORT

OB NO. 933-1068
PROJECT TDS/onsite/NY
LOCATION TDS offsite system
CLIENT TDS
OWNER TDS
CONTRACTOR Clean Harbors

DATE 6/12/97 TIME IN 8:30AM TIME OUT 8:15PM
WEATHER P-Sunny 70-80°F
PRESENT AT SITE Ken Nissaum E(GAI)
Joe Norton (Clean Harbors) & various
Clean Harbors staff

- KFN onsite @ 8:30.
- Started pressure test on EW-6 - Sewer containment pipe @ 8:35 AM @ 3PSE
- KFN offsite @ 9:30
- KFN onsite @ 10:00 for check on test status, Clean Harbors placing stone around the vaults
- KFN offsite ≈ 11:15
- KFN onsite to finish pressure test ≈ 12:05
- 12:35 test passed @ 3.0 PSI, Clean Harbors excavates ≈ 3'
- Manhole of vault 6 in order to pressure test between EW-5 & 6
- 14:30 KFN onsite to start 2nd pressure test of day
- 15:20 KFN offsite
- 16:45 KFN onsite to check in on test & see how Clean Harbors is doing on cleaning up inside of vaults & getting the moisture out of EW-2 control panel. Pressure test ok @ 3 PSE
- KFN offsite 17:15
- KFN onsite @ 18:30 - Final check on test 19:00, test passed @ 3.0 PSI for EW-5 - EW-6 containment pipe.
- Clean Harbors cleaning up site & back filling open section of trench
- KFN offsite 19:10, Clean Harbors still working around site

gned: Kenneth J Kraus

TO: Brian Smith (TDS) / File

Golder Associates
210 John Glenn Drive, Suite 1
Amherst, NY USA 14228
Telephone (716) 691-1156
Fax (716) 691-5109

NO. 132

APPENDIX B

CERTIFICATION LETTER

LAIDLAW ENVIRONMENTAL SERVICES

Field Services

May 3, 1995

Textron Defense System
Post Office Box One
Buffalo, NY 14240-001

ATTN: Mr. John C. Devic

Re: Groundwater Extraction and Treatment System
Niagara Falls, New York
Contract No. 724055

Dear Mr. Devic:

Laidlaw Environmental Services (FS) Inc. does hereby confirm that all work for the above referenced project has been installed in accordance with the plans and specifications.

Very truly yours,
LAIDLAW ENVIRONMENTAL SERVICES (FS) INC.

Bruce E. Mills

Bruce E. Mills
Regional Operations Manager

jc

Laidlaw Environmental Services (FS), Inc.
Post Office Box 19529 (77224-9529) 1123 Lumpkin Road (77043) Houston, Texas
Wats 1.800.283.3433 Phone 713.467.3433 Fax 713.467.0537

APPENDIX C

WENDEL ENGINEERS, P.C.
ELECTRICAL INSPECTION REPORT

VOLUME I

ATTACHMENT I
Field Reports

VOLUME II

ATTACHMENT II
Conformed Drawings

CQA CERTIFICATION REPORT OF ELECTRICAL INSTALLATION

TABLE OF CONTENTS

- CQA Certification Letter
- Introduction
- Scope of Field Observation
- References
- Attachments
  - — I Field Reports
  - — II Conformed Drawings

WENDEL

SUITE 100
95 JOHN MUIR DRIVE
BUFFALO, NEW YORK 14228
716/688-0766 or 625-6867
FAX 716/625-6825

June 14, 1995

Mr. Anthony Grasso, P.G.
Golder Associates, Inc.
210 John Glenn Drive
Suite One
Amherst, NY 14228

SUBJECT: CQA CERTIFICATION OF ELECTRICAL INSTALLATION
FOR THE ON-SITE GROUND WATER EXTRACTION SYSTEM,
BELL AEROSPACE TEXTRON, WHEATFIELD, NY
WENDEL PROJECT 2847-4/100

Dear Mr. Grasso:

Wendel Engineers, P.C. provided site observation of the electrical installation during construction of the on-site ground water extraction system for Bell Aerospace Textron in Wheatfield, New York. This project encompassed the on-site facilities at the south-east corner of the complex located in Wheatfield, New York adjacent to Walmore Road and Niagara Falls Boulevard. Our site visits included the CQA monitoring of the installation of the electrical service connection, all conduit, cabling and terminations, the panels for power and control, all electrical devices and equipment and any other miscellaneous materials pertaining to the electrical work on the extraction and dewatering wells and piping. CQA work pertaining to the building and treatment plant was provided by others. Based on our site observations, Wendel certifies to the best of our knowledge that the electrical installation of this ground water extraction project has been constructed in substantial accordance with the approved contract plans and specifications along with the approved construction design changes.

The certification for the work completed is issued for Wendel under the seal of Michael B. Turri, P.E., Principal of Wendel Engineers, P.C., with New York State License No. 54003.

If you have any questions with regard to the contents of this certification report, please contact the undersigned.

Yours very truly,

WENDEL



Michael B. Turri, P.E.
Principal

Robert J. McNamara, P.E.
Project Manager

RJM:cmt

INTRODUCTION

This document is the Electrical Certification and Inspection Report for the On-Site Ground Water Extraction Construction Project for Bell Aerospace Textron (B.A.T.). This report pertains to the electrical work performed under the General Construction Contract at the on-site facility, excluding the building and treatment plant.

Wendel Engineers, P.C. was retained as a sub-consultant by Golder Associates Inc. to provide field observation at the site during construction and start-up, and at completion of construction, review a set of conformed drawings which have been generated from design drawings with incorporation of contractor field as-built mark-ups and site observation information. The extent of the work performed by the electrical contractor, Ferguson Electric Co., was to provide the electrical service, the conduit and cable for the various systems, and the supply and installation of the electrical equipment, including panels, starters, controls, and other materials necessary for completion of fully operational systems as described by the construction specifications and drawings presented in the On-Site Ground Water Extraction System Design, Revision 1 dated May 7, 1993 as prepared by Golder Associates Inc. and Conserva Tech Engineering and design modifications and design clarifications submitted by the designer.

SCOPE OF FIELD OBSERVATION

Considering the relative straight forward nature of this project with regard to the electrical installation, the need for a full-time electrical site observer was deemed not to be necessary. Since our CQA inspection would be done on a part-time basis, a review of the installation documents was done to determine the areas or phases of the electrical work which were defined as necessary for field observers to view. Any other observations not listed below were done on an as-requested basis from Golder Associates.

1. The initial installation of the below grade conduit.
2. All below grade conduit prior to backfill.
3. Each fabricated electrical panel, on-site, prior to installation.
4. The installation of each type of electrical panel, enclosure and device prior to field wiring.
5. The initial pulling of wire/cable into conduits.
6. The installation and cabling for transducer and pump in wells.
7. The completed installation and wiring of each electrical panel and device.
8. The installation of the leak detection system.

The above items were observed during the construction period and reported as per the field observation sheets shown in Attachment 1. The electrical work was constructed in substantial accordance with the approved contract documents. The approved construction changes are incorporated in the conformed drawings included in Attachment 2, consisting of drawing series D-0273 sheets 1 through 32 as provided by Treatek-Cra Company.

REFERENCES

Golder Associates Inc. and Conserva-Tech, Revision 1 dated May 7, 1993, "On-Site Ground Water Extraction System Design Specifications and Drawing Package" submitted to: Bell Aerospace Textron, 2221 Niagara Falls Blvd., Niagara Falls, New York 14304.

Attachment I

Field Reports

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 1

PROJECT #: **2847-4**

CONTRACT #:933-9068

INSPECTOR: Robert J. McNamara

CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: Al Marzelli (Laidlaw)

DATE: December 10, 1993

Observations and directives are as follows:

Observed trench between wells EW-7 and EW-8 in preparation for installing electrical conduits for power and communication. Due to rain and pressure testing, trench had not been backfilled to start laying in conduits. Approximately 1/2 of the power and communication conduit run was assembled outside of the trench awaiting installation. Anticipated installation of these conduits was not until December 13, 1993, conduit was as specified, 1 inch diameter PVC.

Submitted by: WENDEL

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 2

PROJECT #: **2847-4**

CONTRACT #:933-9068

INSPECTOR: Robert J. McNamara

CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: Al Marzelli (Laidlaw)

DATE: December 13, 1993

Observations and directives are as follows:

Observed that conduits were fully assembled and ready to be installed in trench between wells EW 7 & EW8. Trench was not backfilled due to failure of pressure test. Projected installation of conduit was probably Tuesday, afternoon, December 14, 1993.

Submitted by: WENDEL

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 3

PROJECT #: **2847-4**

CONTRACT #:933-9068

INSPECTOR: Robert J. McNamara

CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: Al Marzelli (Laidlaw)

DATE: December 15, 1993

Observations and directives are as follows:

Conduit was installed in trench and backfilled to mid point between wells EW7 & EW8. Remaining section of trench was to be cleaned out, stone filled, conduit layed and backfill completed by December 16, 1993.

Telecon on December 16, 1993 with Dave Wehn of Golder indicated installation of backfill was complete between wells EW7 & EW8 except for connection into well walls.

Submitted by: WENDEL

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 4

PROJECT #: 2847-4

CONTRACT #:933-9068

INSPECTOR: John J. Rauen

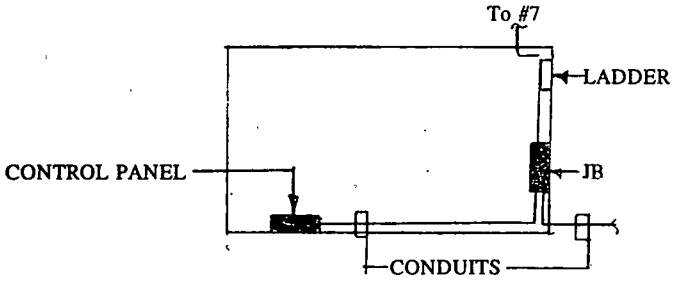
CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: Al Marzelli (Laidlaw)

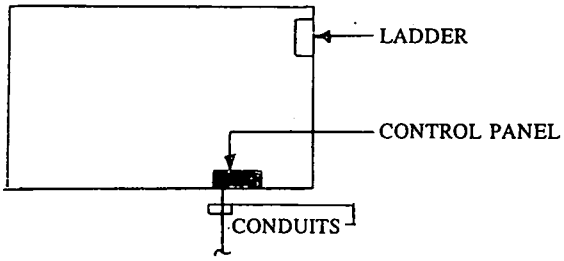
DATE: December 23, 1993

Observations and directives are as follows:

Wire pulled from well EW8 to EW7. Electrical contractor pulled 3 - #4 THHN Cu. and 2 - #12 THHN Cu. for power and control in a 1" conduit. 2 - 4 pair shielded conductors were pulled in a separate conduit. All wires were pulled from control panel in well EW7 to junction box in Well EW8. Control panels were installed in each well as shown below.



WELL EW-8 TOP VIEW



WELL EW-7 TOP VIEW

Submitted by: WENDEL

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 5

PROJECT #: **2847-4**

CONTRACT #:933-9068

INSPECTOR: John J. Rauen

CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: Al Marzelli (Laidlaw)

DATE: April 4, 1994

Observations and directives are as follows:

Checked electrical installation in each well's manhole:

Manhole #7, #8, #10, #12

1. Water is leaking from inside the conduit into pullbox this is unacceptable. In manhole #12 the pullbox was 1/2 full of water, when door was opened.

Manhole #7, #8, #10, #11, #12

1. Heat tracing was not installed.
2. There is no separation between the control cable and the power cable, they are twisted together. There must be a separation between cables.
3. Special starters for pumps must be installed.

Manhole #8, #10

1. Covers on panels, and LB's missing.

Submitted by: WENDEL

WENDEL

Field Report

PROJECT: On-site Ground Water Extraction System
Bell Aerospace Textron, Wheatfield Facility

FR NO: 6

PROJECT #: **2847-4**

CONTRACT #:933-9068

INSPECTOR: John J. Rauen

CONTRACTOR: Ferguson Electric

SUPERINTENDENT/
FOREMEN: **Mark Noack (Laidlaw)**

DATE: May 4, 1994

Observations and directives are as follows:

New conduit was run from EW-7 to EW-8. Conduit is approximately 1" - 1 1/2" above abandoned conduit. Observed wire being pulled from EW-7 to EW-8. Wire as pulled using nylon cord, with strain relief on the end. Pulling compound was placed on the wire. No water was observed leaking out of the conduit. A pressure test was done on conduit from EW-7 to EW-8, conduit had no leaks. All other conduit runs are to be re-checked for seal integrity prior to pulling wire.

Submitted by: WENDEL

APPENDIX D

PRODUCTS LIST

APPENDIX D
MAJOR PRODUCTS LIST
GROUND WATER EXTRACTION SYSTEM
BELL AEROSPACE TEXTRON

ITEM	MANUFACTURER / MODEL NUMBER
Geotextile	TYPAR ® 3401
Double Wall Piping System	Perm Alert
Double Wall Piping Fittings	Perm Alert
Inspection Ports	Perm Alert
Pump Out Ports	Perm Alert
Leak Detection System	Perm Alert PAL-AT AT40K
End Seal Access Port	Perm Alert
Vaults	Kistner Concrete Products
Vault Hatches	Bilco Type D-50 6 ft. x 6 ft.
Vault Piping	Simtech SR Polypropylene
Vault Piping Fittings	Simtech SR Polypropylene
Butterfly Valves	Asahi/America Type 75
Sampling Port Ball Valve	Simtech VKIM 104
Flow Sensor (EW)	Signet 515
Flow Sensor (DW)	Signet MK 565
Flow Limiter	Griswold 353HA
Swing Check Type I	Asahi/America
Swing Check Type II	Asahi/America
Flexible Piping Connector	Metraflex Elasto-Flex
Pipe Insulation	Certain Teed Snap-On
Heat Trace Cable	Thermon PSX 5-2, BC, OJ
Overburden Casing	Proline 45
Cement/Bentonite-Grout	American Culloid C/S Granular
Submersible Pumps	Grundfos Redi-Flo 10ES
Protective Casing	Syracuse Castings No. 1032
Electrical Power Wire	Type THWN
Conduits	Carlon Plus 80 EPC 80
Pull Boxes, Hand holes	Quazite "PC"
Receptacle	Hubbell GF5252
Vault Control Panel Housing	Hoffman
Flow Indicating Controller	Signet 9010 Intelek-Pro
Panel Heaters	Watlow #02012096B-40
Motor Controllers & Starters	Allen Bradley
Level Control System	DCA Moore #DCA/4-20/DH1L1/117AC
Pressure Transducer	Keller 200S
Level Readout Unit	Powers 535
Power Supply	Sola SLS-24-036
Data Acquisition System	Molytek Nema Type

APPENDIX E

WELL BORING AND INSTALLATION LOGS

RECORD OF DRILLHOLE EW-7A

Sheet 1 of 1

PROJECT: TDS COA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: N/A
AZIMUTH: N/A

COLLAR ELEV: N/A
E: N/A
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Silkensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: DIP wrt CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	GRAPHIC LOG	WEATHERING INDEX (SW, FR, MW, HW, CW)	STRENGTH INDEX (R5, R6, R4, R3, R2, R1)	WELL SKETCH
0	OVERBURDEN												18" AUGERED BOREHOLE; 10" CASING; BENTONITE GROUT
5													
10													
15	ZONE 1 13.0 - 31.8 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.			1	100								18" ROCK SOCKET 15.0'
20			21.00	2	88				CORE CRUSHED				~9.5" ø BOREHOLE
25	A MARKER BED 31.8 - 34.3 FT. BGS Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLOSTONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		25.50	3	100				CORE CRUSHED				
30			31.00	4	100								
35	ZONE 2 34.2-35.5 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occasional faintly pourous, pitted beds.		35.50										35.5'
40	Borehole terminated at 35.5 FT.BGS.												

DECOMMISSIONED 12/18/93

NOTES:

AUGERED WITH 12 1/8" ID HSA ON 10/13/93

CASING SOCKET CUT WITH 12 1/4" ID HSA ON 10/13/93

CORED WITH NQ BIT ON 10/19/93

REAMED WITH 9 5/8" ROLLER CONE BIT ON 10/20/93

WELL ABANDONED BY FILLING WITH CEMENT/BENTONITE GROUT ON 12/18/93

DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED: AJG
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE EW-7

Sheet 1 of 1

PROJECT: TDS COA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: ACKER AD-11

DATUM: MSL
COORDINATES N: 1129530.3 E: 407441.0
AZIMUTH: N/A

COLLAR ELEV: 577.60
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Slikensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	ROD	FRACTURES PER FOOT	DISCONTINUITY DATA: DIP wrt CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	GRAPHIC LOG	WEATHERING INDEX (SW FR, MW, FW CW)	STRENGTH INDEX (R5 R6, R4, R3, R2 R1)
0	OVERBURDEN											
15	ZONE 1 14.3-28.4 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.											
25	A MARKER BED 28.4-31.3 FT. BGS. Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLOSTONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		26.00	1	82							
30	ZONE 2 31.3-32.0 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occasional faintly pourous, pitted beds.		31.00	2	80							
35	Borehole terminated at 32.0 FT. BGS.											
40												

NOTES:

AUGERED WITH 12 1/4" HSA ON 10/28/93

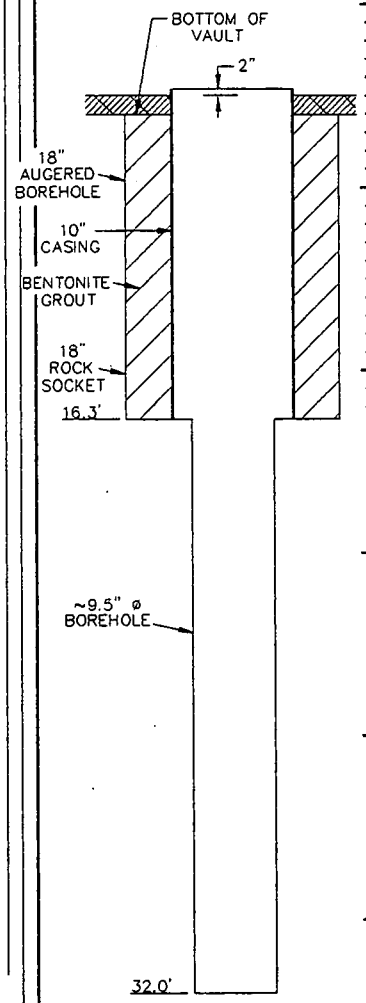
CASING SOCKET CUT WITH 12 1/4"ID HSA ON 10/28/93

NQ CORED ON 11/2/93

REAMED WITH 10" DOWNHOLE HAMMER ON 11/2/93

NO CORE LOGGED FROM 14.3 TO 26.0 DUE TO PROXIMITY OF EXISTING WELL 87-18(1)

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED: AMG
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE EW-8

Sheet 1 of 1

PROJECT: TDS CQA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: 1129546.0 E: 407978.9
AZIMUTH: N/A

COLLAR ELEV: 575.30
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Silkensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD (80, 60, 40, 20)	FRACTURES PER FOOT (2, 4, 6, 8, 10)	DISCONTINUITY DATA: DIP wrt CORE AXIS (0, 30, 60, 90)	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	DISCONTINUITY DATA: GRAPHIC LOG	WEATHERING INDEX (SW, FR, MW, HW, CW)	STRENGTH INDEX (R6, R5, R4, R3, R2, R1)
0	OVERBURDEN											
15	ZONE 1 12.5 – 28.7 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.		16.30	1	95							
20	OOLICTIC ZONE 20.1 – 20.5 FT. BGS.											
25	A MARKER BED 28.7 – 31.9 FT. BGS Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLO-STONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		26.00	2	97							
30	ZONE 2 31.9 – 32.5 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occa-sional faintly pourous, pitted beds.		29.7	3	100							
35	Borehole terminated at 32.5 FT. BGS.		32.30									
40												

NOTES:

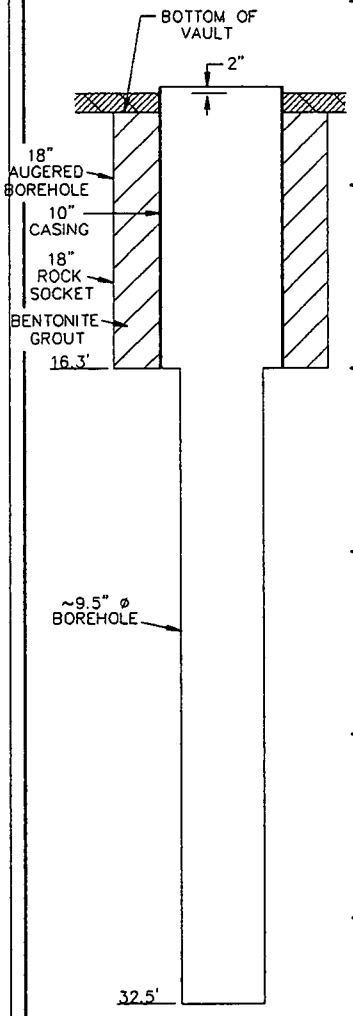
AUGERED WITH 12 1/4" ID. HSA ON 10/5/93

CASING SOCKET CUT WITH 12 1/4" ID. HSA ON 10/6/93

CORED WITH N SIZE BIT ON 10/14/93

REAMED WITH 9 5/8" TRICONE BIT ON 10/15/93 TO 32.5'

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED: MJS
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE DW-9

Sheet 1 of 1

PROJECT: TDS CQA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: 1130739.1
AZIMUTH: N/A

COLLAR ELEV: 578.7
E: 407793.3
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Slikensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: DIP w/r CORE AXIS	TYPE AND SURFACE DESCRIPTION	GRAPHIC LOG	WEATHERING INDEX (SW TR, MW, HW, CW)	STRENGTH INDEX (R5, R6, R4, R3, R2, R1)
0	OVERBURDEN											
5												
10												
15	ZONE 1 12.0 – 27.4 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.		15.50									
20				1	62				CORE LOST			
25	A MARKER BED 27.4 – 30.0 FT. BGS. Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLO-STONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		22.00	2	100							
30	ZONE 2 30.0 – 31.5 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occa-sional faintly pourous, pitted beds.		27.50	3	100							
35	Borehole terminated at 31.5 FT. BGS.		31.50									
40												

NOTES:

AUGERED WITH 12 1/4" ID HSA ON 10/21/93

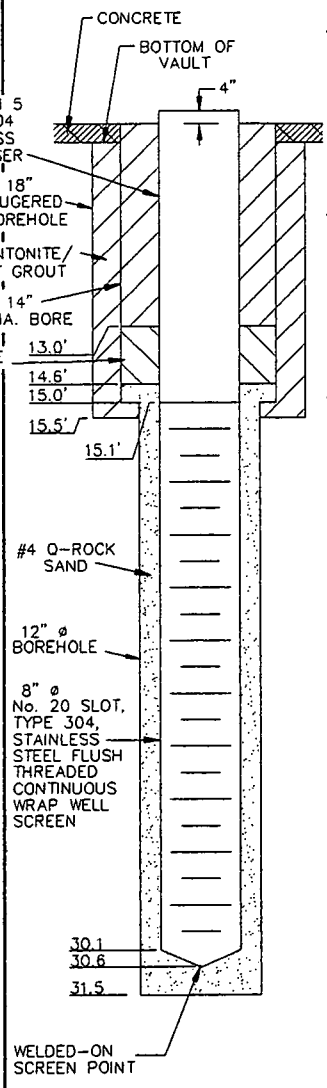
CASING SOCKET CUT WITH 12 1/4" ID HSA ON 10/21/93

CORED (NQ) ON 10/22/93

REAMED WITH 10" DOWNHOLE HAMMER ON 10/25/93 TO 31.0 FT. BGS.

14" TEMPORARY CASING SPUN TO 15.0 FT. BGS. ON 3/15/94 TO CONTROL CUTTINGS RETURN REAM WITH 12" TRICONE BIT TO 31.0 FT. BGS. ON 3/16/94 8" DIA. CASING INSTALLED AS SHOWN ABOVE ON 3/17/94 TO PREVENT OPEN ROCK HOLE FROM CAVING.

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED:
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE DW-10

Sheet 1 of 1

PROJECT: TDS COA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: 1130536.3 E: 408030.3
AZIMUTH: N/A

COLLAR ELEV: 580.7
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Silkensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD	FRACTURES PER FOOT	DISCONTINUITY DATA: DIP wrt CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	GRAPHIC LOG	WEATHERING INDEX (SW FR, MW, HW, CW)	STRENGTH INDEX (R6, R5, R4, R3, R2, R1)
0	OVERBURDEN											
15	ZONE 1 14.0 – 29.9 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out. OOLICTIC ZONE 19.1 – 19.3 FT. BGS.		17.50	1	80				CORE BLOWN AWAY			
30	A MARKER BED 29.9 – 32.1 FT. BGS Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLOSTONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		27.50	2	100							
35	ZONE 2 32.1 – 33.5 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occasional faintly pourous, pitted beds.		33.50									
40	Borehole terminated at 33.5 FT. BGS.											

NOTES:

AUGERED WITH 12 1/4" ID HSA ON 10/21/93

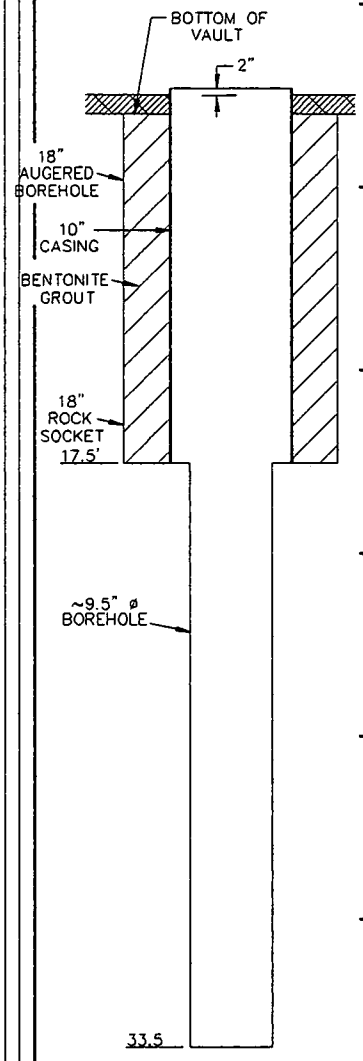
CASING SOCKET CUT WITH 12 1/4" ID HSA ON 10/22/93

CORED (NQ) ON 10/26/93

REAMED WITH 10" DOWNHOLE HAMMER ON 10/26/93

REAM DEPTH 33.5 FT. BGS.

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED: AMS
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE DW-11

Sheet 1 of 1

PROJECT: TDS COA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: 1130365.1
AZIMUTH: N/A

COLLAR ELEV: 579.7
E: 407836.2
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Slickensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	ROD	FRACTURES PER FOOT	DISCONTINUITY DATA: DIP w.r.t CORE AXIS	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	DISCONTINUITY DATA: GRAPHIC LOG	WEATHERING INDEX (SW FR, MW, HW, CW)	STRENGTH INDEX (R6, R5, R4, R3, R2, R1)
0	OVERBURDEN											
5												
10												
15	ZONE 1 14.50 – 29.5 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.											
20	OOLICTIC ZONE 19.0 – 19.4 FT. BGS.		18.00	1	89							
25			25.50	2	100							
30	A MARKER BED 27.3 – 29.5 FT. BGS Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLOSTONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		29.00	3	106							
35	ZONE 2 29.5 – 30.5 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occasional faintly pourous, pitted beds.		30.50									
40	Borehole terminated at 30.5 FT. BGS.											

NOTES:

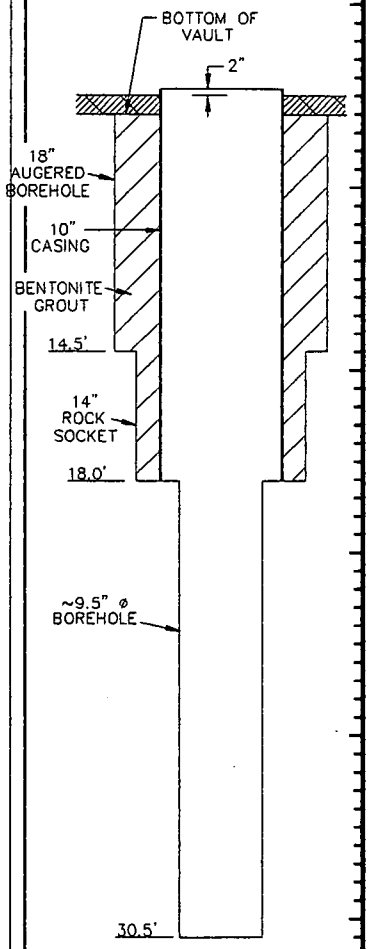
AUGERED WITH 12 1/4" ID HSA ON 10/7/93

CASING SOCKET CUT WITH 14" TRICONE BIT ON 10/8/93

CORED HQ & N ON 10/11/93

REAMED WITH 9 5/8" TRICONE ON 10/12/93

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED:
DATE: 6/15/95

Golder Associates

RECORD OF DRILLHOLE DW-12

Sheet 1 of 1

PROJECT: TDS CQA ONSITE
PROJECT NO: 933-9068
LOCATION: WHEATFIELD, NY

BORING METHOD: SEE NOTES
DRILLING DATE: SEE NOTES
DRILL RIG: CME-85

DATUM: MSL
COORDINATES N: 1130070.9
AZIMUTH: N/A

COLLAR ELEV: 577.2
E: 408039.0
INCLINATION: N/A

J-Joint, F-Fault, S-Shear, B-Bedding, F-Foliation
PL-Planer, C-Curved, U-Undulating, ST-Stepped, I-Irregular
P-Polished, K-Silkensided, SM-Smooth, R-Rough, VR-V. Rough

DEPTH SCALE (FEET)	ROCK TYPE / DESCRIPTION	GRAPHIC LOG	ELEV / DEPTH (FT)	RUN NO.	CORE RECOVERY	RQD (90, 75, 50, 25)	FRACTURES PER FOOT (2, 4, 6, 8, 10)	DISCONTINUITY DATA: DIP w.r.t CORE AXIS (0, 30, 60, 90)	DISCONTINUITY DATA: TYPE AND SURFACE DESCRIPTION	GRAPHIC LOG	WEATHERING INDEX (SW, FR, MW, HW, CW)	STRENGTH INDEX (R5, R6, R4, R3, R2, R1)
0	OVERBURDEN											
5												
10												
15	ZONE 1 16.50 – 28.2 FT. BGS. Fresh, med. gray, fine grained thinly bedded to laminated DOLOSTONE, bedding partings are argillaceous or gypsum coated to 3mm with the gypsum coatings tending to weather out.											
20			19.00	1	100							
25												
30	A MARKER BED 28.2 – 31.1 FT. BGS Fresh, med. brownish gray, med. grained, med. bedded gypsiferous stylolitic DOLOSTONE with thinly interbedded zones. Top and bottom of bed marked by distinct stylolites.		27.00	2	100							
35	ZONE 2 31.1 – 31.8 FT. BGS. Fresh, light to med. brownish gray, fine to med. grained, med. to thickly bedded, massive textured stylolitic DOLOSTONE with some distinct gypsiferous beds and occasional faintly pourous, pitted beds.		31.80									
40	Borehole terminated at 31.8 FT. BGS.											

NOTES:

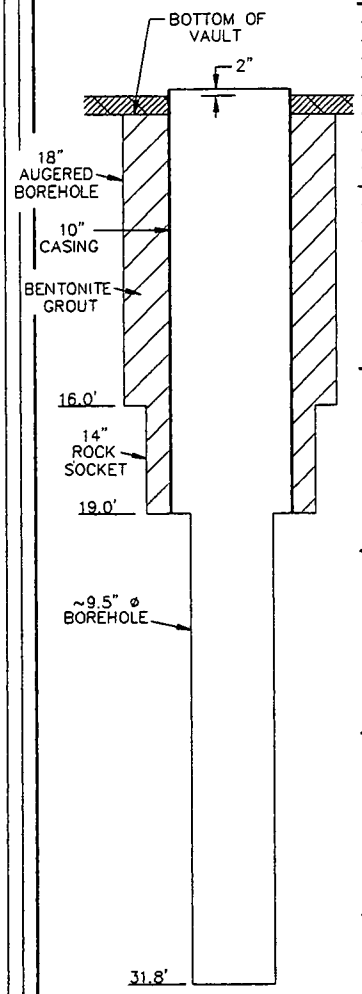
AUGERED WITH 12 1/4" ID HSA ON 10/4/93

CASING SOCKET CUT WITH 14" TRICONE BIT ON 10/5/93

ROCK CORED N-SIZE ON 10/18/93

ROCK REAMED WITH 9 5/8" TRICONE BIT ON 10/18/93

WELL SKETCH



DEPTH SCALE: 1"=5'
DRILLING CONTRACTOR: PENNDRILL
DRILLER: B. GULLIHUE

LOGGED: D. WEHN
CHECKED: ALW
DATE: 6/15/95

Golder Associates

APPENDIX F

RISING HEAD TEST RESULTS

RISING HEAD TEST

WELL EW-7A (DECOMMISSIONED)
DATE OF TEST: 10/25/93

STATIC WATER DEPTH	=	16.15	FEET BELOW TOC
STANDPIPE DIAMETER	=	10.00	INCHES
SANDPACK DIAMETER	=	10.00	INCHES
TOP OF SATURATED SAND	=	15.00	FEET BELOW TOC
BOTTOM OF SANDPACK	=	35.50	FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
11	25	0	0.00	25.08	-8.93	1.000		0.0000
11	30	0	5.00	24.82	-8.67	0.971		-0.0128
11	35	0	10.00	24.57	-8.42	0.943		-0.0255
11	40	0	15.00	24.33	-8.18	0.916		-0.0381
11	45	0	20.00	24.09	-7.94	0.889		-0.0510
12	0	0	35.00	23.38	-7.23	0.810	*	-0.0917
12	30	0	65.00	22.02	-5.87	0.657		-0.1822
13	0	0	95.00	20.87	-4.72	0.529		-0.2769
13	28	0	123.00	19.95	-3.80	0.426		-0.3711
13	56	0	151.00	19.12	-2.97	0.333		-0.4781
14	36	0	191.00	18.17	-2.02	0.226	*	-0.6455

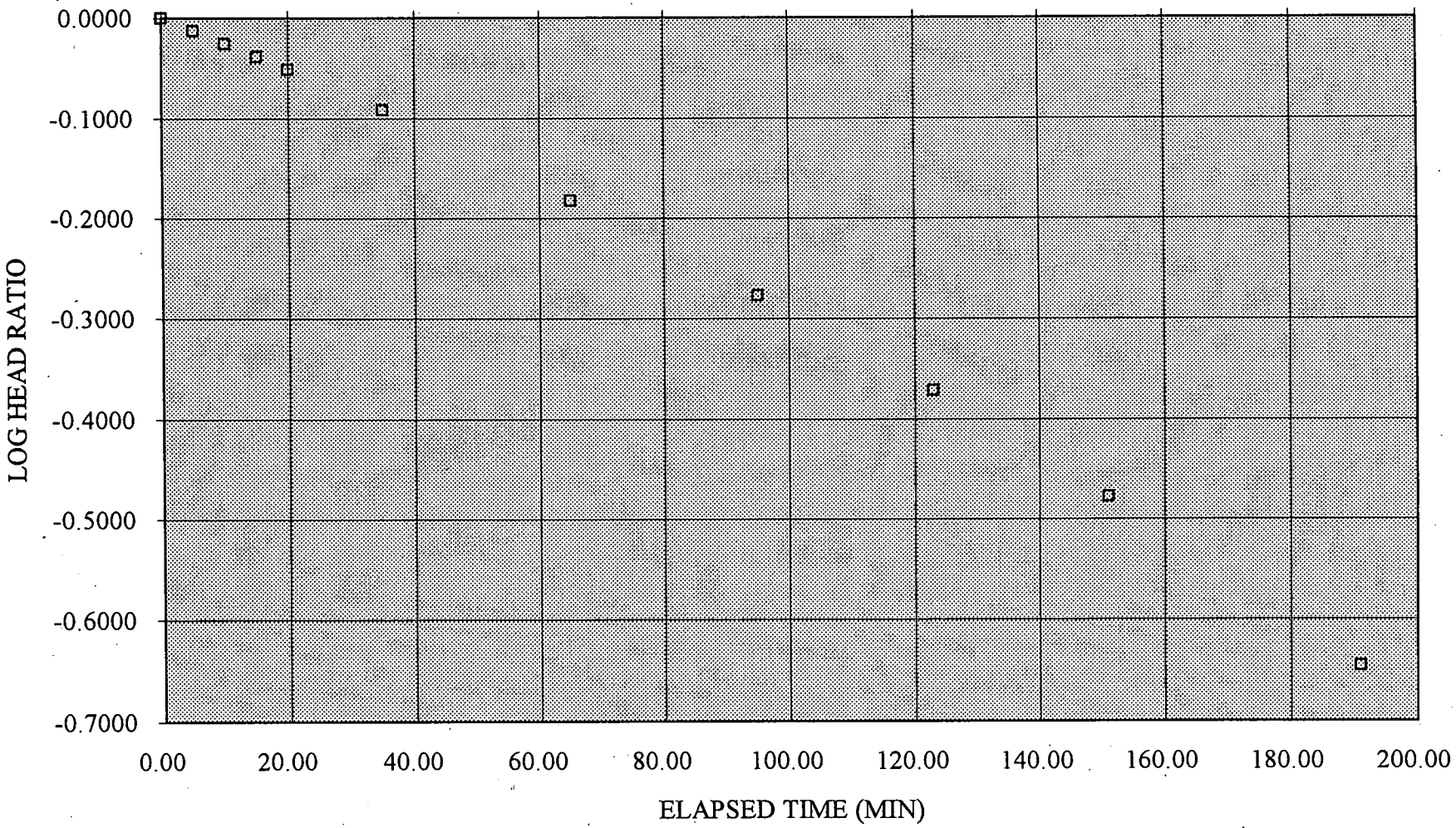
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 6.86E-05 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	35.000	0.810
POINT 2	191.000	0.226

RISING HEAD TEST
WELL EW-7A



RISING HEAD TEST

WELL EW-7
DATE OF TEST: 11/3/93

STATIC WATER DEPTH = 16.36 FEET BELOW TOC
STANDPIPE DIAMETER = 10.00 INCHES
SANDPACK DIAMETER = 10.00 INCHES
TOP OF SATURATED SAND = 17.10 FEET BELOW TOC
BOTTOM OF SANDPACK = 32.80 FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
10	19	38	0.00	16.95	-0.59	1.000		0.0000
10	20	7	0.48	16.81	-0.45	0.763	*	-0.1176
10	20	10	0.53	16.71	-0.35	0.593		-0.2268
10	20	49	1.18	16.68	-0.32	0.542		-0.2657
10	21	8	1.50	16.65	-0.29	0.492		-0.3085
10	21	30	1.87	16.63	-0.27	0.458		-0.3395
10	22	0	2.37	16.55	-0.19	0.322		-0.4921
10	22	36	2.97	16.52	-0.16	0.271		-0.5667
10	23	8	3.50	16.50	-0.14	0.237		-0.6247
10	24	13	4.58	16.44	-0.08	0.136		-0.8678
10	24	57	5.32	16.43	-0.07	0.119	*	-0.9258
10	25	43	6.08	16.42	-0.06	0.102		-0.9927
10	27	12	7.57	16.40	-0.04	0.068		-1.1688
10	29	16	9.63	16.38	-0.02	0.034		-1.4698

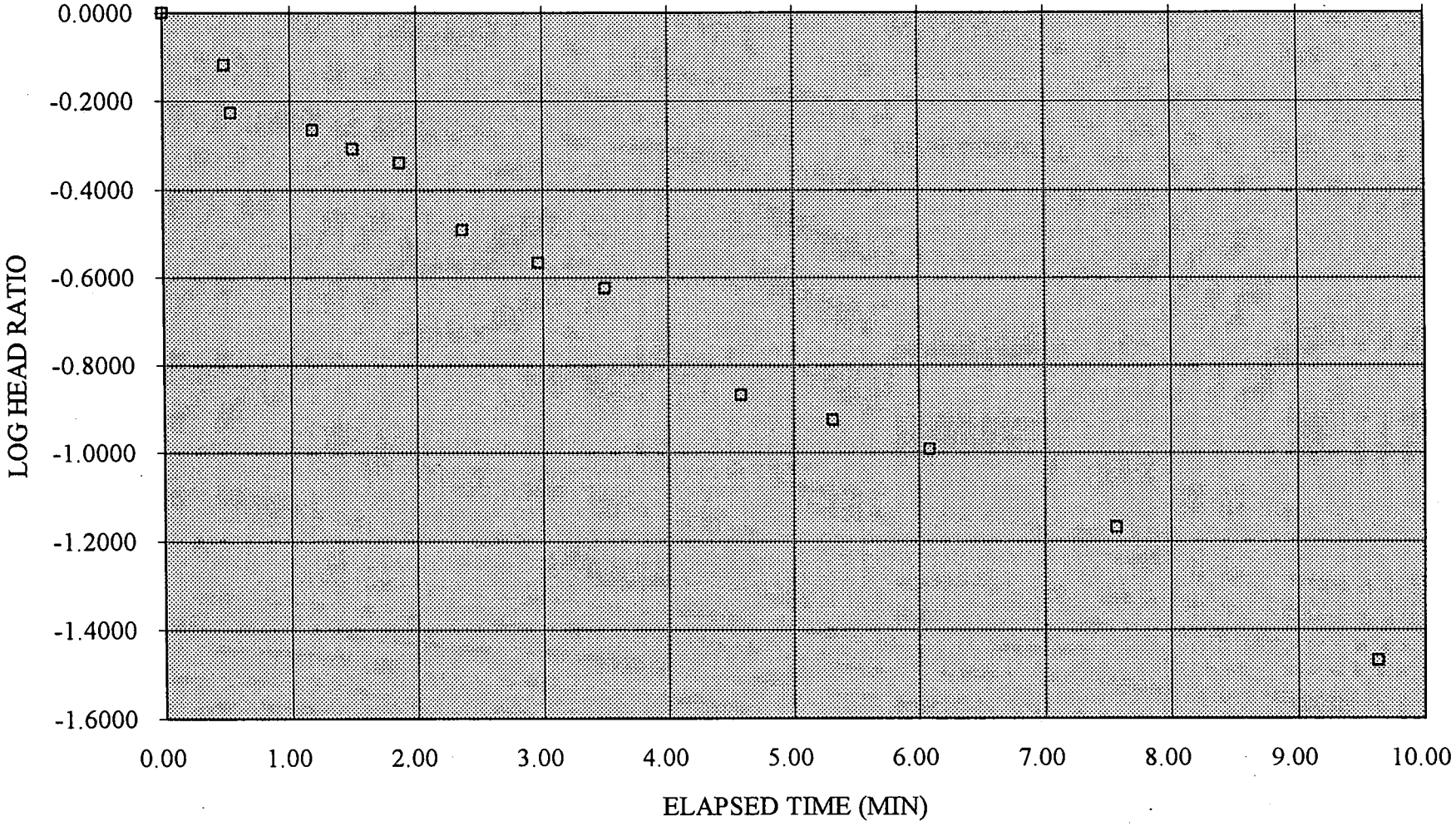
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 3.91E-03 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	0.480	0.763
POINT 2	5.320	0.119

RISING HEAD TEST
WELL EW-7



RISING HEAD TEST

WELL EW-8
DATE OF TEST: 10/25/93

STATIC WATER DEPTH = 13.92 FEET BELOW TOC
STANDPIPE DIAMETER = 10.00 INCHES
SANDPACK DIAMETER = 10.00 INCHES
TOP OF SATURATED SAND = 15.68 FEET BELOW TOC
BOTTOM OF SANDPACK = 33.18 FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
9	31	0	0.00	17.14	-3.22	1.000		0.0000
9	32	0	1.00	16.57	-2.65	0.823		-0.0846
9	33	0	2.00	16.44	-2.52	0.783		-0.1065
9	34	0	3.00	16.11	-2.19	0.680		-0.1674
9	35	0	4.00	15.98	-2.06	0.640		-0.1940
9	37	0	6.00	15.48	-1.56	0.484	*	-0.3147
9	40	0	9.00	14.81	-0.89	0.276		-0.5585
9	42	0	11.00	14.51	-0.59	0.183		-0.7370
9	44	0	13.00	14.32	-0.40	0.124		-0.9058
9	46	0	15.00	14.19	-0.27	0.084		-1.0765
9	48	0	17.00	14.13	-0.21	0.065	*	-1.1856
9	50	0	19.00	14.12	-0.20	0.062		-1.2068
9	55	0	24.00	14.10	-0.18	0.056		-1.2526
10	0	0	29.00	14.09	-0.17	0.053		-1.2774

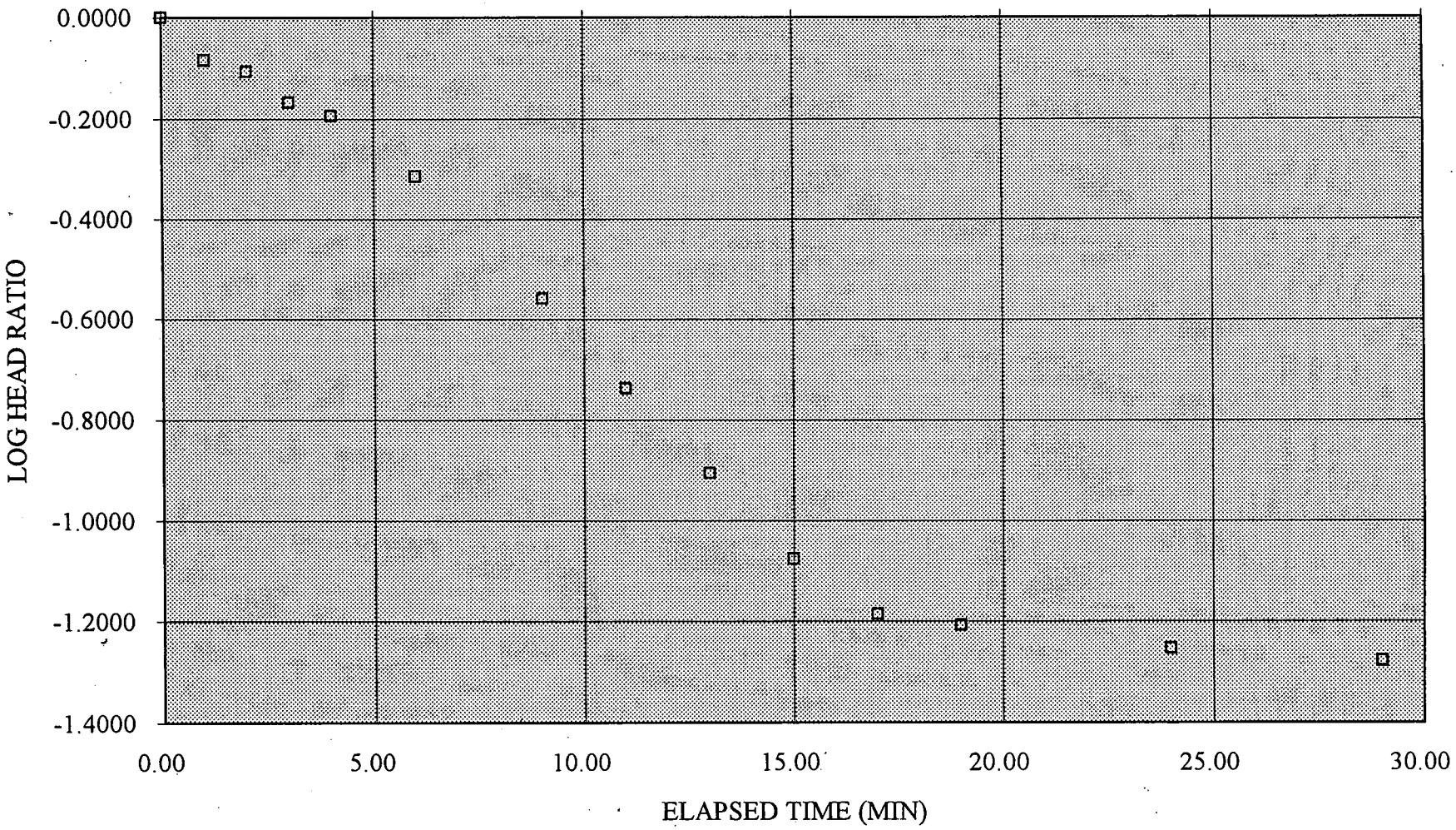
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 1.72E-03 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	6.000	0.484
POINT 2	17.000	0.065

RISING HEAD TEST
WELL EW-8



RISING HEAD TEST

WELL DW-9
DATE OF TEST: 11/3/93

STATIC WATER DEPTH = 8.95 FEET BELOW TOC
STANDPIPE DIAMETER = 10.00 INCHES
SANDPACK DIAMETER = 10.00 INCHES
TOP OF SATURATED SAND = 16.00 FEET BELOW TOC
BOTTOM OF SANDPACK = 32.00 FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
13	20	15	0.00	13.10	-4.15	1.000		0.0000
13	20	42	0.45	12.74	-3.79	0.913	*	-0.0394
13	21	0	0.75	12.55	-3.60	0.867		-0.0617
13	21	17	1.03	12.42	-3.47	0.836		-0.0777
13	21	30	1.25	12.33	-3.38	0.814		-0.0891
13	21	46	1.52	12.24	-3.29	0.793		-0.1009
13	22	10	1.92	12.10	-3.15	0.759		-0.1197
13	22	39	2.40	11.95	-3.00	0.723		-0.1409
13	23	54	3.65	11.76	-2.81	0.677		-0.1693
13	24	48	4.55	11.33	-2.38	0.573		-0.2415
13	26	8	5.88	10.97	-2.02	0.487		-0.3127
13	27	44	7.48	10.50	-1.55	0.373		-0.4277
13	29	30	9.25	10.29	-1.34	0.323	*	-0.4909
13	31	32	11.28	10.12	-1.17	0.282		-0.5499
13	34	10	13.92	9.97	-1.02	0.246		-0.6094
13	36	32	16.28	9.88	-0.93	0.224		-0.6496
13	39	8	18.88	9.82	-0.87	0.210		-0.6785
13	40	42	20.45	9.79	-0.84	0.202		-0.6938
13	46	10	25.92	9.70	-0.75	0.181		-0.7430

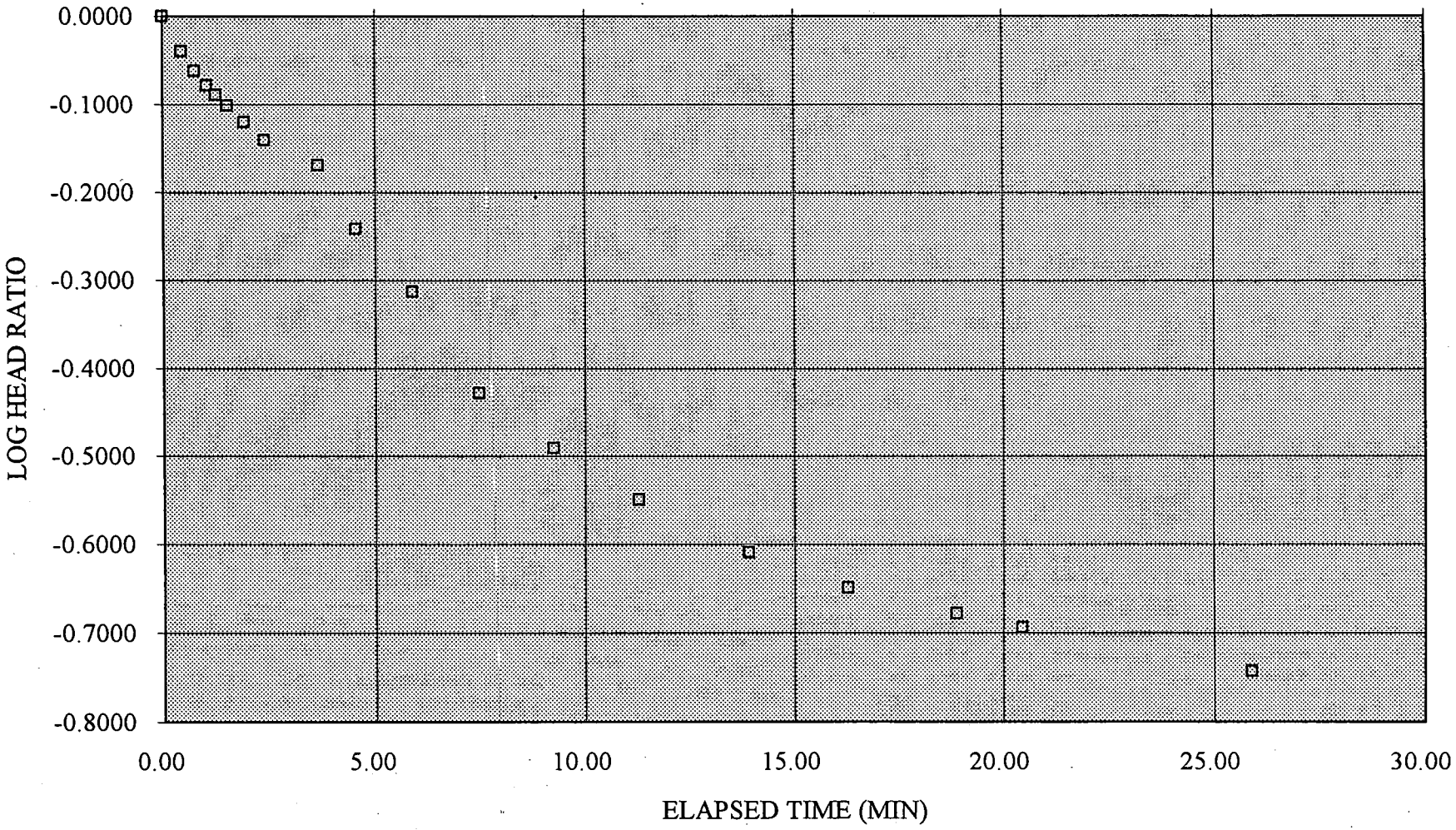
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 1.19E-03 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	0.450	0.913
POINT 2	9.250	0.323

RISING HEAD TEST
WELL DW-9



RISING HEAD TEST

WELL DW-10
DATE OF TEST: 11/3/93

STATIC WATER DEPTH = 11.83 FEET BELOW TOC
STANDPIPE DIAMETER = 10.00 INCHES
SANDPACK DIAMETER = 10.00 INCHES
TOP OF SATURATED SAND = 17.99 FEET BELOW TOC
BOTTOM OF SANDPACK = 33.99 FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
11	23	29	0.00	11.98	-0.15	1.000		0.0000
11	24	7	0.63	11.95	-0.12	0.800	*	-0.0969
11	24	38	1.15	11.94	-0.11	0.733		-0.1347
11	25	23	1.90	11.91	-0.08	0.533		-0.2730
11	26	6	2.62	11.90	-0.07	0.467		-0.3310
11	27	18	3.82	11.89	-0.06	0.400		-0.3979
11	28	50	5.35	11.87	-0.04	0.267		-0.5740
11	30	10	6.68	11.86	-0.03	0.200	*	-0.6990

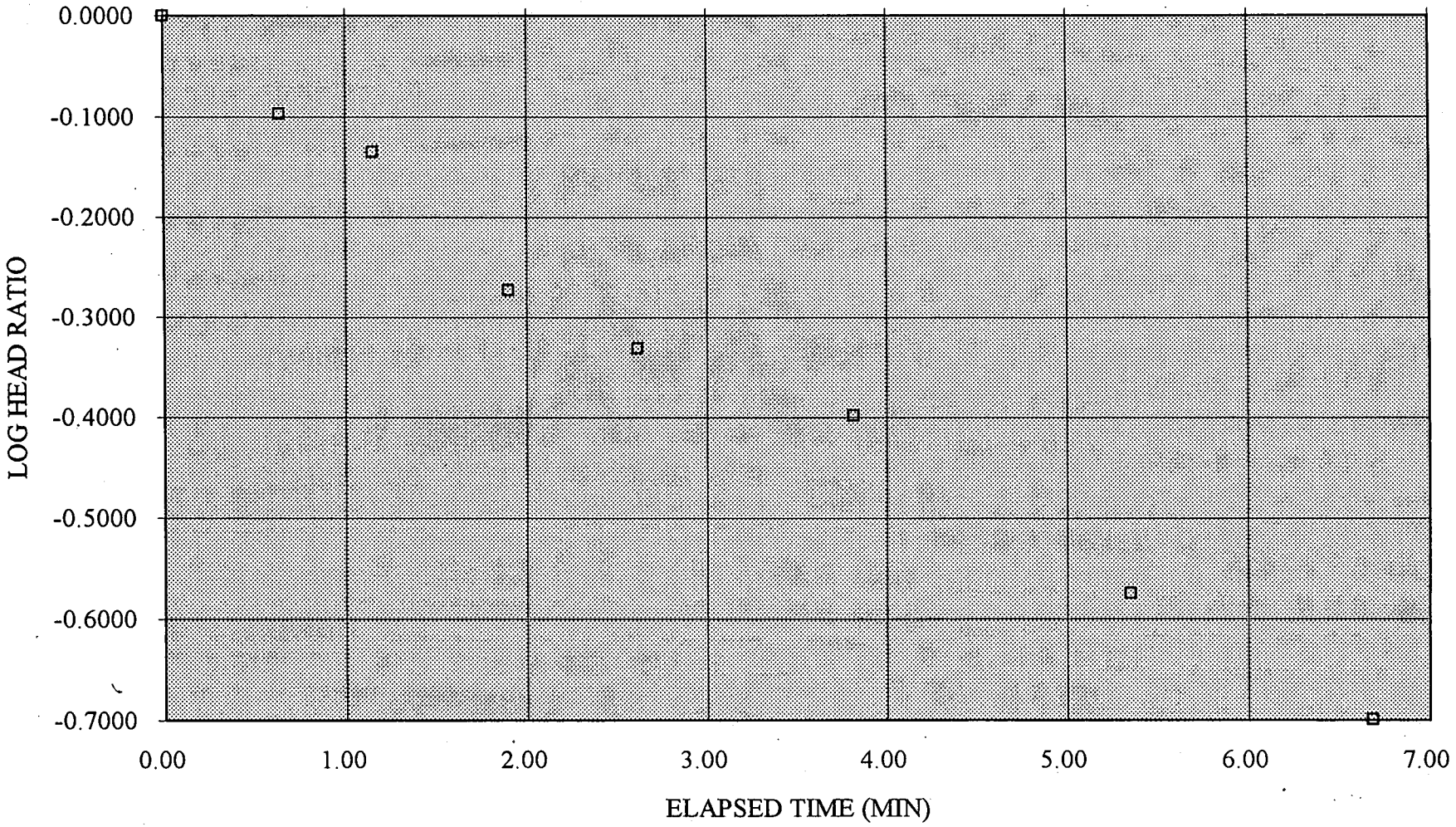
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 2.30E-03 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	0.630	0.800
POINT 2	6.680	0.200

RISING HEAD TEST
WELL DW-10



RISING HEAD TEST

WELL DW-11
DATE OF TEST: 10/12/93

STATIC WATER DEPTH	=	13.00	FEET BELOW TOC
STANDPIPE DIAMETER	=	10.00	INCHES
SANDPACK DIAMETER	=	10.00	INCHES
TOP OF SATURATED SAND	=	19.00	FEET BELOW TOC
BOTTOM OF SANDPACK	=	31.50	FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
15	36	0	0.00	31.00	-18.00	1.000		0.0000
15	40	41	4.68	26.20	-13.20	0.733		-0.1347
15	41	0	5.00	25.00	-12.00	0.667	*	-0.1761
15	49	5	13.08	20.30	-7.30	0.406		-0.3919
15	52	20	16.33	19.20	-6.20	0.344		-0.4629
15	56	0	20.00	16.40	-3.40	0.189		-0.7238
15	57	35	21.58	15.00	-2.00	0.111		-0.9542
15	59	30	23.50	14.00	-1.00	0.056	*	-1.2553

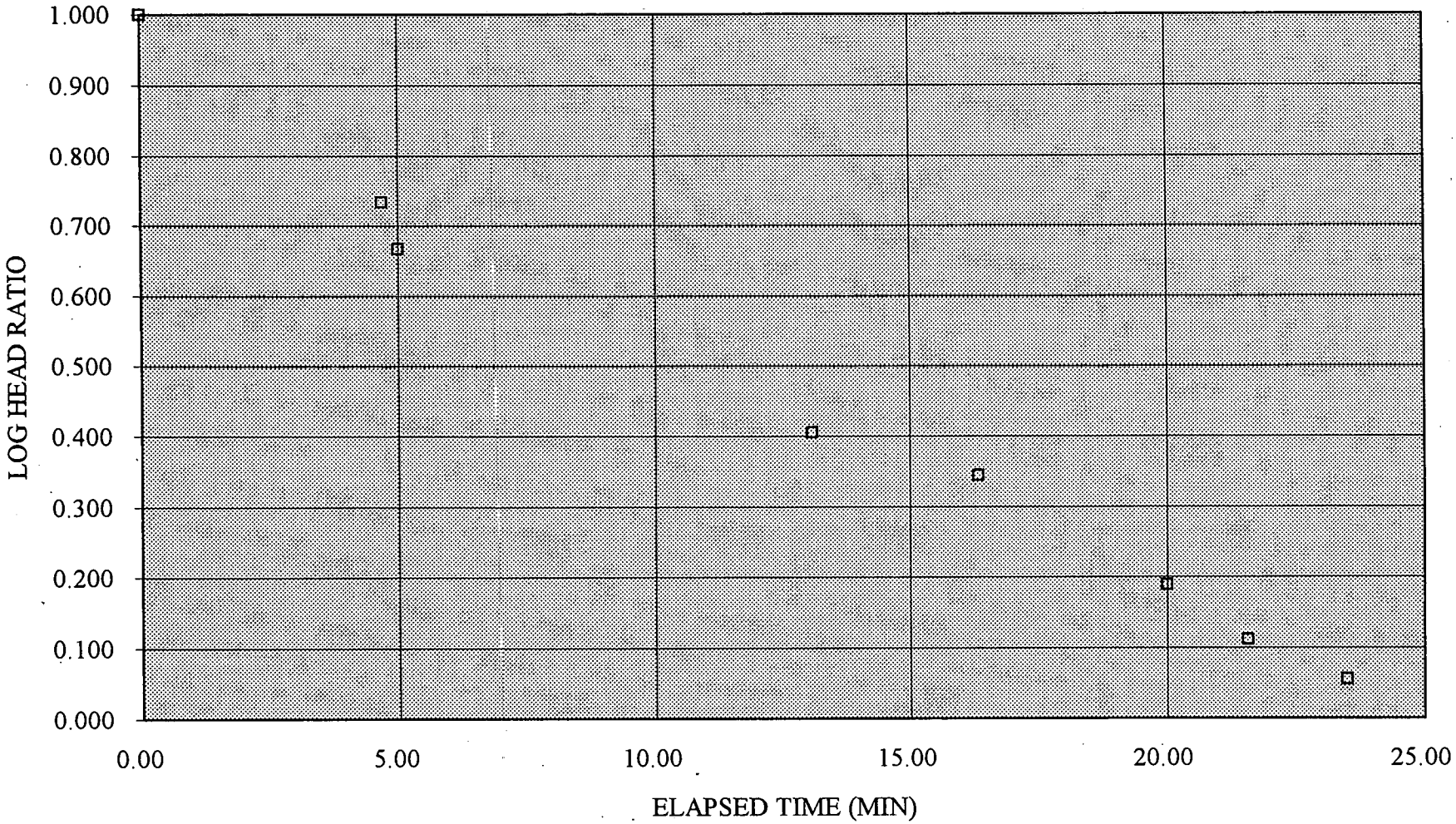
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 1.61E-03 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	5.000	0.667
POINT 2	23.500	0.056

RISING HEAD TEST
WELL DW-11



RISING HEAD TEST

WELL DW-12
DATE OF TEST: 12/25/93

STATIC WATER DEPTH	=	11.00	FEET BELOW TOC
STANDPIPE DIAMETER	=	10.00	INCHES
SANDPACK DIAMETER	=	10.00	INCHES
TOP OF SATURATED SAND	=	19.85	FEET BELOW TOC
BOTTOM OF SANDPACK	=	32.45	FEET BELOW TOC

24 HOUR CLOCK HR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)		LOG HEAD RATIO
12	51	27	0.00	12.63	-1.63	1.000		0.0000
12	51	43	0.27	12.05	-1.05	0.644	*	-0.1910
12	51	57	0.50	11.55	-0.55	0.337		-0.4718
12	52	9	0.70	11.32	-0.32	0.196	*	-0.7070
12	52	14	0.78	11.16	-0.16	0.098		-1.0081

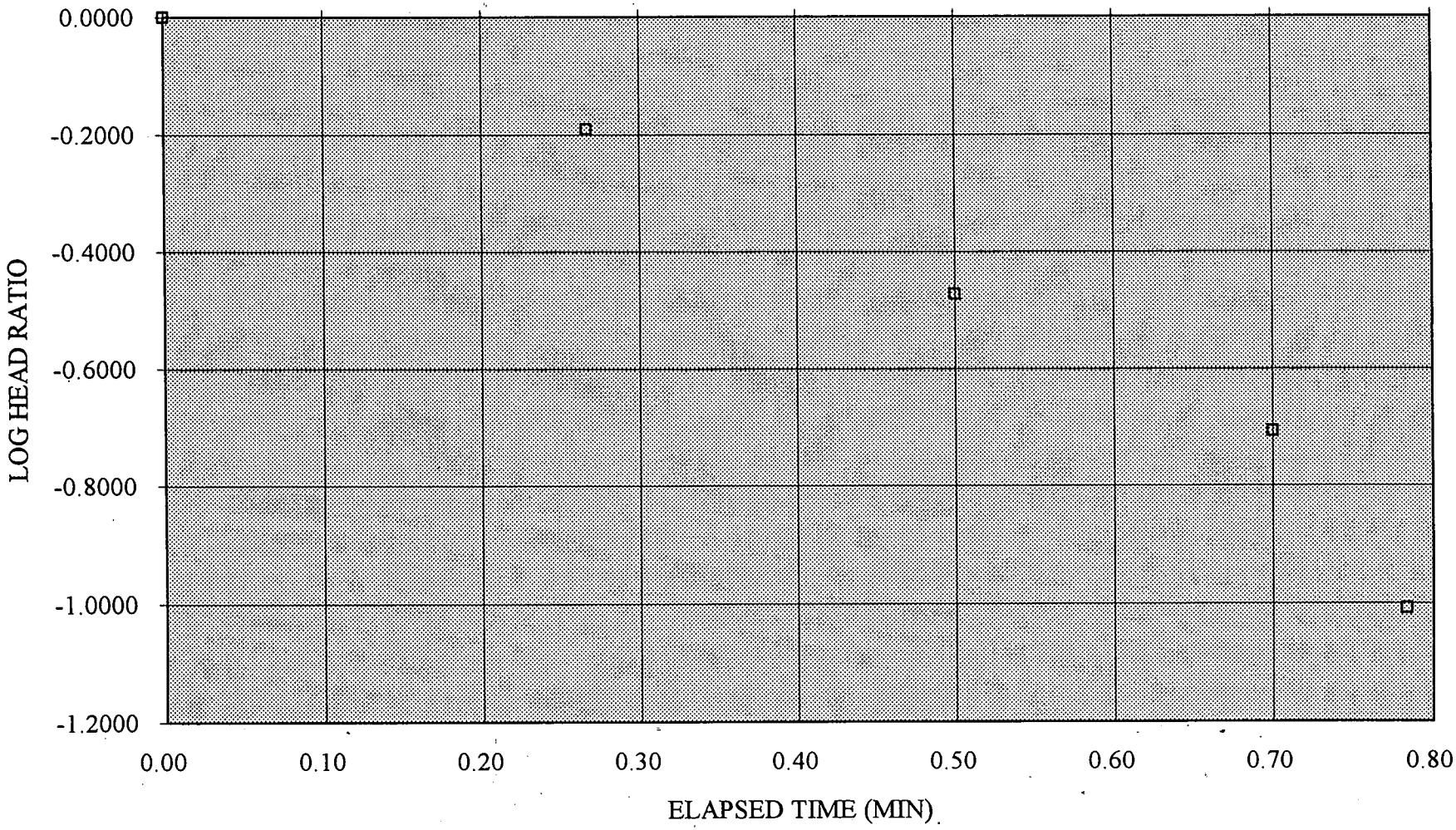
NOTES:

1) * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 3.30E-02 CM/SEC

	ELAPSED TIME	HEAD RATIO
POINT 1	0.270	0.644
POINT 2	0.700	0.196

RISING HEAD TEST
WELL DW-12



APPENDIX G

#1A STONE GRAIN SIZE DISTRIBUTION RESULTS

PULLEY ENGINEERING

GEOTECHNICAL ENGINEERING SERVICES

GOLDER ASSOCIATES INC
REC'D
PN
FN
CC
ROUTE
MAY 1 2 1994

FACSIMILE MESSAGE

Date: 05/10/94

Attention: **David Wehn**
Firm: **Golder Associates, Inc.**

Fax No.: 691-5109

From: **Steve Pulley, P.E.**
Firm: **Pulley Engineering**

Fax No.: 685-2822

Reference: Gradation Testing of No. 1A Stone
(Project No. PE94002)

Message:

Dave, here are the gradation test results for the three (3) samples of No. 1A stone that you dropped off on Friday, May 6th. The samples were tested in accordance with ASTM D-422. For comparison purposes, I have also provided the NYSDOT specification for No. 1A stone from Table 703-4 of the NYSDOT Specifications. Let me know if I should expect any more samples, or if the work is complete, so that I can invoice. Thanks for the work.

Table 1. Summary of Gradation Testing

Sieve Size/No.	Percent Passing By Weight			
	NYSDOT Specification No. 1A Stone	Golder Sample No. 042194-8	Golder Sample No. 050394-9	Golder Sample No. 050594-10
0.5 inch	100%	100	100	100
0.25 inch	90% - 100%	98	98	98
0.125 inch	0% - 15%	12	13	10
No. 200	0% - 1%	0.9	1.3	1.0

Total number of pages sent (including cover page) = 1

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PULLEY ENGINEERING

GEOTECHNICAL ENGINEERING SERVICES

FACSIMILE MESSAGE

Date: 02/21/94

Attention: **David Wehn**
Firm: **Golder Associates, Inc.**

Fax No.: 691-5109

From: **Steve Pulley, P.E.**
Firm: **Pulley Engineering**

Fax No.: 685-2822

Reference: Gradation Testing of No. 1A Stone
(Project No. PE94002)

Message:

Dave, here are the test results for the two samples of No. 1A stone that you delivered to our office on Friday (February 18th). The samples were tested in accordance with ASTM D-422. For comparison purposes, I have also provided the NYSDOT specification for No. 1A stone from Table 703-4 of the NYSDOT Specifications. Review of the gradation data indicates that the samples are on the "finer" side of your specification limits. Call me if you have any questions.

Table 1. Summary of Gradation Testing

Sieve Size/No.	Percent Passing By Weight		
	NYSDOT Specification No. 1A Stone	Golder Sample No. 020894-6	Golder Sample No. 021894-7
0.5 inch	100%	100%	100%
0.25 inch	90% - 100%	96%	97%
0.125 inch	0% - 15%	18%	23%
No. 200	0% - 1%	2%	3%

Total number of pages sent (including cover page) = 1

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PULLEY ENGINEERING

GEOTECHNICAL ENGINEERING SERVICES

FACSIMILE MESSAGE

Date: 01/25/94

Attention: **David Wehn**
Firm: **Golder Associates, Inc.**

Fax No.: 691-5109

From: **Steve Pulley, P.E.**
Firm: **Pulley Engineering**

Fax No.: 685-2822

Reference: Gradation Testing of No. 1A Stone
(Project No. PE94002)

Message:

Dave, here are the test results for the sample of No. 1A stone that you delivered to our office yesterday (January 24, 1994). The sample was tested in accordance with ASTM D-422. For comparison purposes, I have also provided the NYSDOT specification for No. 1A stone from Table 703-4 of the NYSDOT Specifications. Call me if you have any questions.

Table 1. Summary of Gradation Testing

Sieve Size/No.	Percent Passing By Weight	
	NYSDOT Specification No. 1A Stone	Golder Sample No. 012094-5
0.5 inch	100%	100%
0.25 inch	90% - 100%	98%
0.125 inch	0% - 15%	17%
No. 200	0% - 1%	1%

Total number of pages sent (including cover page) = 1

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PULLEY ENGINEERING

GEOTECHNICAL ENGINEERING SERVICES

FACSIMILE MESSAGE

Date: 01/21/94

Attention: **David Wehn**
Firm: **Golder Associates, Inc.**

Fax No.: 691-5109

From: **Steve Pulley, P.E.**
Firm: **Pulley Engineering**

Fax No.: 685-2822

Reference: Gradation Testing of No. 1A Stone
(Project No. PE94002)

Message:

Dave, here are the test results for the two samples of No. 1A stone that you delivered to our office on Wednesday January 19, 1994. Samples were tested (dry sieved) in accordance with ASTM D-422. I have also provided the NYSDOT specification for No. 1A stone from Table 703-4 for your ease of reference. It appears to me that both samples are running on the "finer side" of the specification limits. Feel free to call me if you have any questions.

Table 1. Summary of Gradation Testing

	Percent Passing By Weight		
	NYSDOT Specification No. 1 A Stone	**Golder Sample No. 122293-3**	**Golder Sample No. 011494-4**
0.5 inch	100%	100%	100%
0.25 inch	90% - 100%	97%	98%
0.125 inch	0% - 15%	14%	19%
No. 200	0% - 1%	2%	2%

Total number of pages sent (including cover page) = 1

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Huntingdon

Empire Soils Investigations, Inc., Division
5167 South Park Avenue
Box 0213
Hamburg, New York 14075
(716)649-8110
Fax (716)649-8051

GOLDER ASSOCIATES

PROJECT: Golder Associates Job No. 933-9068

CLIENT: Golder Associates

DATE: December 30, 1993

PROJECT NO.: BT-92-194

REPORT NO.: 1

REPORT OF MATERIAL TESTING

MATERIAL: One (1) sample of #1A crushed stone delivered by Golder Associates for gradation testing. Sample # 120293-2

SIEVE ANALYSIS:

SIEVE SIZE	PERCENTAGE PASSING
1/2"	100
1/4"	97.9
1/8"	20.7
#200	0.9

If you should have any questions regarding this report, please do not hesitate to contact our office at any time.

Respectfully Submitted,
HUNTINGDON - EMPIRE SOILS INVESTIGATIONS, INC.

Christopher Barton
Construction Services Manager

APPENDIX H

#1A STONE LABORATORY COMPACTION TEST RESULTS

Huntingdon

Empire Soils Investigations, Inc., Division
5-5167 South Park Avenue
Box 0018
Hamburg, New York 14075
(716)649-8110
Fax (716)649-8051

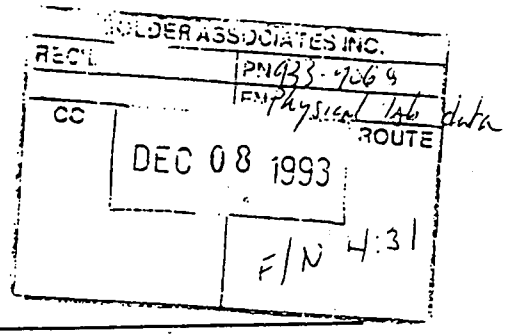
PROJECT: Maximum/Minimum Density Testing
Golder Associates Job No. 933-9068

CLIENT: Golder Associates, Inc.

DATE: November 17, 1993

PROJECT NO.: BT-93-194

REPORT NO.: 1



REPORT OF MATERIAL TESTING

MATERIAL: One sample of crushed stone (#1A) delivered by Golder Associates on 11/11/93 for Maximum/Minimum density testing.
E.S.I. Sample No. 93-089 Sample # 111193-1

MECHANICAL ANALYSIS:

Sieve Size	Percentage Passing
1/2"	100
1/4"	97.5
1/8"	15.9
#200	0.0

MAXIMUM/MINIMUM DENSITY: ASTM D-4253 & 4254

Maximum Density = 106.8 pcf

Minimum Density = 85.0 pcf

If you should have any questions regarding this report, please do not hesitate to contact our office at any time.

Respectfully Submitted,
HUNTINGDON - EMPIRE SOILS INVESTIGATIONS, INC.

Christopher Barton

Christopher Barton
Construction Services Manager

APPENDIX I

NUCLEAR DENSIMETER TEST RESULTS #1A STONE

NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		1	2	3	4	5					
~~Layer~~ Station		2	3	4	5	6					
Location Coordinates	Northing	≈ 9550	≈ 9550	≈ 9550	≈ 9550	≈ 9550					
	Easting	7500	7550	7600	7650	7700					
Lift		1	1	1	1	1					
Elevation											
Depth		BS	BS	BS	BS	BS					
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		6.2	5.7	5.9	5.0	5.9					
Dry Density, pcf (DD)		97.3	90.6	90.8	93.2	95.1					
Soil Source		#1A	#1A	#1A	#1A	#1A					
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8					
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70					
% Compaction		91	85	85	87	89					
Pass/Fail Density		P	P	P	P	P					
Window 80%/20%											

Standard Count	
Density	Moisture
2626	622

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments: SEE STATION NO. LOCATION MAP FOR COORDINATES / STATION LOCATIONS

Date Tested: 12/8/93
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS COA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
AMHERST, NEW YORK 14228

12/89 Model City, N.Y.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		6	7	8	9	10					
~~Layer~~ Station		7	8	9	10	11					
Location Coordinates	Northing	≈ 9550	≈ 9550	≈ 9550	≈ 9550	≈ 9550					
	Easting	7750	7800	7850	7900	7950					
Lift		1	1	1	1	1					
Elevation											
Depth		BS	BS	BS	BS	BS					
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		4.6	6.8	5.3	9.9	15.1					
Dry Density, pcf (DD)		90.5	90.0	91.2	87.3	84.4					
Soil Source		#1A	#1A	#1A	#1A	#1A					
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8					
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70					
% Compaction		85	84	85	84	79					
Pass/Fail Density		P	P	P	P	P					
Window 80%/20%											

Standard Count	
Density	Moisture
2629	624

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 12/9/93
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
AMHERST, NEW YORK 14228

NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		11	12	13	14	15					
~~Layer~~ Station		2	3	4	5	6					
Location Coordinates	Northing	≈ 9550	≈ 9550	≈ 9550	≈ 9550	≈ 9550					
	Easting	7500	7550	7600	7650	7700					
Lift		4	4	4	4	4					
Elevation											
Depth		BS	BS	BS	BS	BS					
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		2.5	3.0	2.5	2.6	3.1					
Dry Density, pcf (DD)		93.4	96.0	92.6	93.8	92.2					
Soil Source		#1A	#1A	#1A	#1A	#1A					
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8					
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70					
% Compaction		87	90	87	88	86					
Pass/Fail Density		P	P	P	P	P					
Window 80%/20%											

Standard Count	
Density	Moisture
2616	627

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 12/17/93
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		16	17	18	19	20				
~~Layer~~ Station		7	8	9	10	11				
Location	Northing	≈ 9550	≈ 9550	≈ 9550	≈ 9550	≈ 9550				
Coordinates	Easting	7750	7800	7850	7900	7950				
Lift		4	4	4	4	4				
Elevation										
Depth		BS	BS	BS	BS	BS				
Density Count (DC)										
Wet Density (WD)										
Moisture Count (MC)										
Moisture (M#)										
Moisture (%)		5.9	6.5	4.7	3.9	5.7				
Dry Density, pcf (DD)		92.9	91.6	93.4	90.8	92.4				
Soil Source		#1A	#1A	#1A	#1A	#1A				
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8				
Opt. Moisture Content, %										
Required % Compaction		70	70	70	70	70				
% Compaction		87	86	87	85	87				
Pass/Fail Density		P	P	P	P	P				
Window 80%/20%										

Standard Count	
Density	Moisture
2626	624

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 12/17/93
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
AMHERST, NEW YORK 14228

NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		21	22	23							
~~Layer~~ Station		21	22	23							
Location Coordinates	Northing	≈29970	30000	30050							
	Easting	≈ 8025	≈ 8050	≈ 8050							
Lift		1	1	1							
Elevation											
Depth		BS	BS	BS							
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		4.4	6.4	6.1							
Dry Density, pcf (DD)		91.8	85.7	85.2							
Soil Source		#1A	#1A	#1A							
Max. Dry Density, pcf		106.8	106.8	106.8							
Opt. Moisture Content, %											
Required % Compaction		70	70	70							
% Compaction		86	80	80							
Pass/Fail Density		P	P	P							
Window 80%/20%											

Standard Count	
Density	Moisture
2622	625

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 12/30/93
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
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NUCLEAR GAUGE IN SITU DENSITY TEST

Test Number		24	25								
Layer Station		22	23								
Location Coordinates	Northing	30000	30050								
	Easting	≈ 3050	≈ 3050								
Lift		4	4								
Elevation											
Depth		BS	BS								
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		5.7	5.5								
Dry Density, pcf (DD)		97.1	97.1								
Soil Source		#1A	#1A								
Max. Dry Density, pcf		106.8	106.8								
Opt. Moisture Content, %											
Required % Compaction		70	70								
% Compaction		36	87								
Pass/Fail Density		P	P								
Window 80%/20%											

Standard Count	
Density	Moisture
2613	68

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 1/6/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS COA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
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NUCLEAR GAUGE IN SITU DENSITY TEST

Test Number		26	27	28	29	30	31	32	33	34
~~Layer~~ Station		20	19	18	17	16	15	14	13	12
Location	Northing	29950	29900	29850	29800	29750	29700	29650	29600	29550
Coordinates	Easting	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000
Lift		1	1	1	1	1	1	1	1	1
Elevation										
Depth		BS	BS	BS	BS	BS	BS	BS	BS	BS
Density Count (DC)										
Wet Density (WD)										
Moisture Count (MC)										
Moisture (M#)										
Moisture (%)		6.8	6.1	5.4	7.1	9.9	15.7	7.7	7.0	14.7
Dry Density, pcf (DD)		87.6	81.8	87.1	82.5	83.7	79.1	85.5	85.5	77.8
Soil Source		#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8
Opt. Moisture Content, %										
Required % Compaction		70	70	70	70	70	70	70	70	70
% Compaction		82	77	83	77	78	74	80	80	73
Pass/Fail Density		P	P	P	P	P	P	P	P	P
Window 80%/20%										

Standard Count	
Density	Moisture
2630	625

TROXLER MODEL NO. 3411-B
SERIAL NO. 8581

Comments:

Date Tested: 1/11/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CGA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
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12/89 Model City, N.Y.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		35	36	37	38	39	40	41	42		
~~Layer~~ Station		12	13	14	15	16	17	18	19		
Location Coordinates	Northing	29550	29600	29650	29700	29750	29800	29850	29900		
	Easting	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000	≈ 8000		
Lift		4	4	4	4	4	4	4	4		
Elevation											
Depth		BS	BS	BS	BS	BS	BS	BS	BS		
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		5.0	6.0	6.4	6.0	11.0	9.0	7.3	9.7		
Dry Density, pcf (DD)		96.6	79.7	79.1	81.3	76.0	83.9	79.2	77.4		
Soil Source		#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A		
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8		
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70	70	70	70		
% Compaction		81	75	74	76	71	79	74	72		
Pass/Fail Density		P	P	P	P	P	P	P	P		
Window 80%/20%											

Standard Count	
Density	Moisture
2632	626

TROXLER MODEL NO. 3411-B
SERIAL NO. 8581

Comments:

Date Tested: 1/17/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS COA ON-SITE

GOLDER ASSOCIATES, INC.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		43	44	45	46	47	48	49			
~~Layer~~ Station		24	25	26	27	28	29	20			
Location	Northing	30100	30150	30200	30250	30300	30350	29950			
Coordinates	Easting	≈ 8040	≈ 8040	≈ 8040	≈ 8040	≈ 8040	≈ 8040	≈ 8000			
Lift		1	1	1	1	1	1	4			
Elevation											
Depth		BS	BS	BS	BS	BS	BS	BS			
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		12.8	12.0	15.6	6.4	5.0	11.2	7.3			
Dry Density, pcf (DD)		80.7	79.5	79.6	86.2	88.1	79.0	85.4			
Soil Source		#1A	#1A	#1A	#1A	#1A	#1A	#1A			
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8	106.8	106.8			
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70	70	70			
% Compaction		76	74	75	81	75	74	78			
Pass/Fail Density		P	P	P	P	P	P	P			
Window 80%/20%											

Standard Count	
Density	Moisture
2622	627

TROXLER MODEL NO. 3411-B
SERIAL NO. 8581

Comments:

Date Tested: 1/18/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CGA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		50	51	52	53						
Layer Station		42	43	44	45						
Location Coordinates	Northing	≈ 30350	≈ 30350	≈ 30350	≈ 30350						
	Easting	8000	7950	7900	7850						
Lift		1	1	1	1						
Elevation											
Depth		BS	BS	BS	BS						
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		5.9	6.7	6.6	7.7						
Dry Density, pcf (DD)		86.5	91.7	95.6	84.6						
Soil Source		#1A	#1A	#1A	#1A						
Max. Dry Density, pcf		106.8	106.8	106.8	106.8						
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70						
% Compaction		81	76	80	79						
Pass/Fail Density		P	P	P	P						
Window 80%/20%											

Standard Count	
Density	Moisture
2637	630

TROXLER MODEL NO. 3411-B
SERIAL NO. 8581

Comments:

Date Tested: 1/20/94
Tested By: DCW
Checked By: CDM

Job Number: 933-7068
Job Name: TDS CCA ON-SITE

GOLDER ASSOCIATES, INC.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		54	55	56	57						
~~Layer~~ Station		45	44	43	42						
Location	Northing	≈30350	≈30350	≈30350	≈30350						
Coordinates	Easting	7850	7900	7950	8000						
Lift		4	4	4	4						
Elevation											
Depth		BS	BS	BS	BS						
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		10.1	6.5	4.1	11.0						
Dry Density, pcf (DD)		79.7	93.9	91.9	79.2						
Soil Source		#1A	#1A	#1A	#1A						
Max. Dry Density, pcf		106.8	106.8	106.8	106.8						
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70						
% Compaction		75	88	86	74						
Pass/Fail Density		P	P	P	P						
Window 80%/20%											

Standard Count	
Density	Moisture
2635	628

TROXLER MODEL NO. 3411-B
SERIAL NO. 8581

Comments:

Date Tested: 1/27/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		58	59	60	61	62	63	64	65		
Layer Station		41	40	39	38	37	36	35	34		
Location Coordinates	Northing	≈ 30730	30700	30650	≈ 30625	≈ 30625	≈ 30625	≈ 30625	30600		
	Easting	≈ 7825	≈ 7830	≈ 7830	7850	7900	7950	8000	≈ 8030		
Lift		1	1	1	1	1	1	1	1		
Elevation											
Depth		BS	BS	BS	BS	BS	BS	BS	BS		
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		10.7	12.2	14.9	14.2	11.7	15.6	11.9	11.4		
Dry Density, pcf (DD)		75.2	81.5	76.5	76.1	76.6	79.3	76.5	84.9		
Soil Source		#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A		
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8		
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70	70	70	70		
% Compaction		70.4	76	72	71	72	74	72	80		
Pass/Fail Density		P	P	P	P	P	P	P	P		
Window 80%/20%											

Standard Count	
Density	Moisture
2605	629

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments:

Date Tested: 2/9/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDD CQA ON-SITE

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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		66	67	68	69						
Layer Station		30	31	32	33						
Location Coordinates	Northing	30400	30450	30500	30550						
	Easting	TA	TA	TA	TA						
Lift		1	1	1	1						
Elevation											
Depth		BS	BS	BS	BS						
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		12.2	7.1	10.7	9.3						
Dry Density, pcf (DD)		78.2	81.4	79.6	82.9						
Soil Source		#1A	#1A	#1A	#1A						
Max. Dry Density, pcf		106.8	106.8	106.8	106.8						
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70						
% Compaction		73	76	75	78						
Pass/Fail Density		P	P	P	P						
Window 80%/20%											

Standard Count			
Density	Moisture	TROXLER	MODEL NO. 3411-B
2601	624		SERIAL NO. 6581

Comments: TA = Trench Alignment

Date Tested: 2/11/94

Tested By: JCW

Checked By: CDM

Job Number: 935 4068

Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		70	71	72							
~~Layer~~ Station		24	27	28							
Location	Northing	30100	30250	30300							
Coordinates	Easting	TA	TA	TA							
Lift		4	4	4							
Elevation											
Depth		BS	BS	BS							
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		7.2	7.2	10.5							
Dry Density, pcf (DD)		81.7	82.4	75.8							
Soil Source		#1A	#1A	#1A							
Max. Dry Density, pcf		106.8	106.8	106.8							
Opt. Moisture Content, %											
Required % Compaction		70	70	70							
% Compaction		76	77	71							
Pass/Fail Density		P	P	P							
Window 80%/20%											

Standard Count	
Density	Moisture
2606	623

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments: TA = Trench Alignment

Date Tested: 2/17/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS COA ON-SITE

GOLDER ASSOCIATES, INC.
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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		73	74	75	76	77	78	79	80	81	
~~Layer~~ Station		41	40	39	38	37	36	35	34	33	
Location Coordinates	Northing	≈ 30730	30700	30650	TA	TA	TA	TA	30600	30550	
	Easting	≈ 7825	TA	TA	7850	7900	7950	8000	TA	TA	
Lift		4	4	4	4	4	4	4	4	4	
Elevation											
Depth		BS	BS	BS	BS	BS	BS	BS	BS	BS	
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		3.7	4.9	3.3	1.7	4.9	3.1	6.4	7.3	3.9	
Dry Density, pcf (DD)		92.5	92.5	90.7	98.9	95.9	97.1	89.4	85.9	92.6	
Soil Source		#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A	#1A	
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	106.8	
Opt. Moisture Content, %											
Required % Compaction		70	70	70	70	70	70	70	70	70	
% Compaction		87	87	85	93	90	91	84	80	87	
Pass/Fail Density		P	P	P	P	P	P	P	P	P	
Window 80%/20%											

Standard Count	
Density	Moisture
2611	624

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments: TA = Trench Alignment

Date Tested: 2/18/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

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NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		82	83	84	85	86					
~~Layer~~ Station		30	29	Midpoint 29/28	31	32					
Location Coordinates	Northing	30400	30350	30325	30450	30500					
	Easting	TA	TA	TA	TA	TA					
Lift		4	4	4	4	4					
Elevation											
Depth		BS	BS	BS	BS	BS					
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		1.6	4.4	6.0	3.3	5.1					
Dry Density, pcf (DD)		119.0	88.8	89.3	94.5	94.3					
Soil Source		#1A	#1A	#1A	#1A	#1A					
Max. Dry Density, pcf		106.8	106.8	106.8	106.8	106.8					
Opt. Moisture Content, %											
Required % Compaction		70	70	76	70	70					
% Compaction		74	83	84	88	88					
Pass/Fail Density		P	P	P	P	P					
Window 80%/20%											

Standard Count	
Density	Moisture
2599	623

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments: TA = Trench Alignment

Date Tested: 2/22/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
AMHERST, NEW YORK 14228

12/89 Model City, N.Y.
Revised 5/90 FN:\NUCGAUG.WK1

NUCLEAR GAUGE IN-SITU DENSITY TEST

Test Number		87	88								
~~Layer~~ Station		25	26								
Location	Northing	30150	30200								
Coordinates	Easting	TA	TA								
Lift		4	4								
Elevation											
Depth		BS	BS								
Density Count (DC)											
Wet Density (WD)											
Moisture Count (MC)											
Moisture (M#)											
Moisture (%)		34	9.8								
Dry Density, pcf (DD)		93.3	87.8								
Soil Source		#1A	#1A								
Max. Dry Density, pcf		106.8	106.8								
Opt. Moisture Content, %		87	82								
Required % Compaction		70	70								
% Compaction		87	82								
Pass/Fail Density		P	P								
Window 80%/20%											

Standard Count	
Density	Moisture
2611	625

TROXLER MODEL NO. 3411-B
SERIAL NO. 6581

Comments: TA = Trench Alignment

Date Tested: 2/24/94
Tested By: DCW
Checked By: CDM

Job Number: 933-9068
Job Name: TDS CQA ON-SITE

GOLDER ASSOCIATES, INC.
210 JOHN GLENN DRIVE STE. 1
AMHERST, NEW YORK 14228

12/89 Model City, N.Y.
Revised 6/90 FN:\NUCGAUG.WK1

APPENDIX J

SURVEY DATA

TOP OF GROUNDWATER EXTRACTION SYSTEM PIPELINE SURVEY DATA

ADD 1,100,000 TO NORTH COORDINATE & 400,000 TO EAST COORDINATE FOR SITE COORDINATE SYSTEM VALUES.

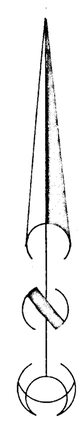
POINT	NORTH	EAST	TOP OF PIPE ELEVATION	
#1	29531.5	7443.3	578.67	
#2	29532.2	7460.0	578.55	
#3	29532.8	7479.6	578.49	WELD
#4	29532.8	7480.0	578.49	
#5	29533.3	7500.0	578.38	
#6	29533.9	7519.0	578.31	WELD
#7	29533.9	7520.0	578.31	
#8	29534.4	7540.0	578.24	
#9	29535.0	7558.8	578.15	WELD
#10	29535.0	7560.0	578.15	
#11	29535.9	7580.0	578.06	
#12	29536.5	7598.5	577.97	WELD
#13	29536.6	7600.0	577.95	
#14	29537.3	7620.0	577.90	
#15	29537.5	7638.2	577.79	WELD
#16	29537.5	7640	577.78	
#17	29537.9	7660.0	577.71	
#18	29538.5	7678.0	577.66	WELD
#19	29538.6	7679.4	577.64	WELD
#20	29538.6	7680.0	577.65	
#21	29539.2	7700.0	577.56	
#22	29539.7	7719.2	577.41	WELD
#23	29539.7	7720.0	577.41	
#24	29540.1	7740.0	577.34	
#25	29540.8	7758.9	577.23	WELD
#26	29540.8	7760.0	577.21	
#27	29541.5	7780.0	577.13	
#28	29542.0	7798.7	577.07	WELD
#29	29542.0	7800.0	577.07	
#30	29542.6	7818.4	577.01	
#31	29542.7	7820.0	576.97	
#32	29543.3	7838.0	576.89	WELD
#33	29543.4	7840.0	576.91	
#34	29543.8	7857.8	576.84	WELD
#35	29543.9	7860.0	576.81	
#36	29544.5	7877.5	576.70	WELD
#37	29544.5	7880.0	576.70	
#38	29544.8	7897.2	576.61	WELD
#39	29544.9	7900.0	576.59	
#40	29545.4	7917.0	576.57	WELD
#41	29545.4	7920.0	576.52	
#42	29546.0	7936.6	576.45	WELD
#43	29546.1	7940.0	576.43	
#44	29546.7	7960.0	576.28	
#45	29547.2	7975.3	576.21	
#46	29547.3	7981.6	576.30	
#47	29546.9	7995.9	576.61	WELD AT ELBOW
#48	29547.6	7996.6	576.61	WELD AT ELBOW
#49	29560.0	7997.0	576.70	
#50	29580.0	7998.3	576.79	
#51	29587.4	7998.9		WELD
#52	29600.0	7999.8	576.95	
#53	29620.0	8001.2	577.09	
#54	29627.1	8001.7		WELD
#55	29630.5	8001.9		WELD
#56	29640.0	8002.6	577.22	
#57	29660.0	8003.8	577.30	
#58	29670.1	8004.5		WELD
#59	29680.0	8005.1	577.43	
#60	29700.0	8006.4	577.53	
#61	29709.7	8007.1		WELD
#62	29720.0	8007.7	577.68	
#63	29740.0	8009.1	577.77	
#64	29749.3	8009.7		WELD
#65	29750.8	8009.7		WELD
#66	29760.0	8010.4	577.88	
#67	29780.0	8011.9	578.01	
#68	29790.4	8012.7		WELD
#69	29800.0	8013.3	578.15	
#70	29820.0	8014.6	578.25	
#71	29830.1	8015.4		WELD
#72	29840.0	8016.1	578.37	
#73	29860.0	8017.3	578.54	
#74	29869.8	8018.0		WELD
#75	29880.0	8018.8	578.65	
#76	29900.0	8020.2	578.79	
#77	29909.4	8020.7		WELD
#78	29920.0	8021.1	578.88	
#79	29940.0	8021.8	578.96	
#80	29949.1	8022.1		WELD
#81	29960.0	8022.4	579.08	
#82	29980.0	8022.8	579.17	
#83	29988.9	8023.1	579.34	WELD AT ELBOW
#84	29989.6	8022.4	579.34	WELD AT ELBOW
#85	29989.7	8021.0		WELD
#86	29989.8	8020.0	579.35	
#87	29990.2	8000.0	579.54	
#88	29989.9	7995.3	579.59	WELD AT ELBOW
#89	29989.2	7994.8	579.58	WELD AT ELBOW
#90	29986.0	7994.8	579.65	
#91	29988.2	7993.6	579.61	
#92	29991.3	7993.7	579.55	WELD AT ELBOW
#93	29991.9	7994.4	579.55	WELD AT ELBOW
#94	29991.8	8000.0	579.49	
#95	29991.0	8020.0	579.30	
#96	29991.0	8034.2	579.25	WELD
#97	29991.0	8035.7	579.25	WELD
#98	29991.2	8040.5	579.22	WELD AT ELBOW
#99	29992.0	8041.2	579.22	WELD AT ELBOW
#100	30000.0	8041.0	579.08	
#101	30020.0	8040.8	578.82	
#102	30031.8	8040.6	578.66	WELD
#103	30040.0	8040.4	578.59	
#104	30060.0	8040.2	578.30	
#105	30068.6	8040.2	578.10	
#106	30074.8	8040.3	578.13	
#107	30080.0	8040.6	578.19	
#108	30086.9	8040.9		WELD
#109	30100.0	8041.5	578.37	
#110	30106.7	8041.7		WELD
#111	30120.0	8041.6	578.52	
#112	30126.3	8041.3		WELD
#113	30140.0	8040.4	578.60	
#114	30160.0	8039.1	578.69	
#115	30166.0	8038.9		WELD
#116	30180.0	8038.9	578.77	
#117	30200.0	8039.3	578.86	
#118	30205.7	8039.3		WELD
#119	30220.0	8039.0	578.96	
#120	30240.0	8038.5	579.10	
#121	30245.4	8038.4		WELD
#122	30260.0	8038.3	579.21	
#123	30280.0	8038.4	579.31	
#124	30285.1	8038.5		WELD
#125	30286.2	8038.5		WELD
#126	30300.0	8038.3	579.44	
#127	30320.0	8037.5	579.57	
#128	30325.8	8037.4		WELD
#129	30340.0	8037.2	579.70	
#130	30360.0	8037.4	579.86	
#131	30365.6	8037.4		
#132	30367.2	8037.4	579.89	WELD AT TEE
#133	30367.8	8036.9	579.89	WELD AT TEE
#134	30367.8	8020.0	579.96	
#135	30367.7	8000.0	580.02	
#136	30367.7	7996.9		WELD
#137	30367.6	7980.0	580.11	
#138	30367.6	7960.0	580.20	
#139	30367.6	7957.2		WELD
#140	30367.2	7940.0	580.34	
#141	30367.1	7920.0	580.47	
#142	30367.1	7917.5		WELD
#143	30366.9	7900.0	580.56	
#144	30366.3	7880.0	580.67	
#145	30366.3	7877.8		WELD
#146	30366.2	7860.0	580.73	
#147	30366.3	7840.3		WELD
#148	30366.3	7840.0	580.77	
#149	30366.3	7838.5	580.79	
#150	30368.2	8037.4	579.88	WELD AT TEE
#151	30370.0	8037.4		WELD
#152	30380.0	8037.5	579.93	
#153	30389.8	8037.7		WELD
#154	30392.1	8037.8	580.05	
#155	30409.4±	N/A	N/A	WELD (UNDER ROAD)
#156	30418.7	8038.5	580.36	
#157	30430.2	8038.6		WELD
#158	30440.0	8038.6	580.52	
#159	30449.0	8038.7		WELD
#160	30460.0	8038.9	580.73	
#161	30468.7	8038.9		WELD
#162	30480.0	8038.5	581.00	
#163	30488.3	8037.5		WELD
#164	30500.0	8034.5	581.25	
#165	30507.3	8032.6		WELD
#166	30520.0	8031.4	581.36	
#167	30527.0	8031.4		WELD
#168	30534.0	8031.5	581.61	
#169	30540.3	8031.5	581.67	
#170	30560.0	8032.2	581.50	
#171	30568.7	8032.5		WELD
#172	30580.0	8032.8	581.42	
#173	30588.5	8033.0		WELD
#174	30600.0	8033.2	581.34	
#175	30608.5	8033.5	581.30	WELD AT ELBOW
#176	30609.0	8033.3	581.30	WELD AT ELBOW
#177	30620.1	8023.3	581.22	WELD
#178	30634.2	8009.3	581.14	WELD AT ELBOW
#179	30634.4	8008.7	581.14	WELD AT ELBOW
#180	30634.3	8000.0	581.05	
#181	30634.2	7988.9		WELD
#182	30634.2	7980.0	580.93	
#183	30634.3	7969.2		WELD
#184	30634.3	7960.0	580.84	
#185	30634.4	7958.9		WELD
#186	30635.1	7940.0	580.76	
#187	30635.0	7939.3		WELD
#188	30635.6	7920.0	580.64	
#189	30635.6	7919.5	580.64	WELD AT TEE
#190	30635.7	7918.6	580.64	WELD AT TEE
#191	30636.1	7900.0	580.52	
#192	30636.1	7898.7		WELD
#193	30636.4	7880.0	580.42	
#194	30636.5	7879.0		WELD
#195	30636.5	7877.6		WELD
#196	30636.7	7860.0	580.32	
#197	30636.8	7857.8		WELD
#198	30637.1	7840.0	580.18	
#199	30637.1	7837.9	580.15	WELD AT ELBOW
#200	30637.8	7837.2	580.15	WELD AT ELBOW
#201	30640.0	7837.3	580.14	
#202	30657.6	7838.1		WELD
#203	30658.1	7838.0		WELD
#204	30660.0	7838.1	580.06	
#205	30680.0	7838.7	579.98	
#206	30697.9	7838.6		WELD
#207	30700.0	7838.7	579.90	
#208	30720.0	7838.7	579.79	
#209	30737.7	7838.5	579.71	WELD AT ELBOW
#210	30738.4	7837.8	579.71	WELD AT ELBOW
#211	30738.7	7820.0	579.64	
#212	30738.8	7817.9		WELD
#213	30739.2	7800.0	579.56	
#214	30739.3	7798.2		WELD
#215	30740.3	7795.6	579.48	

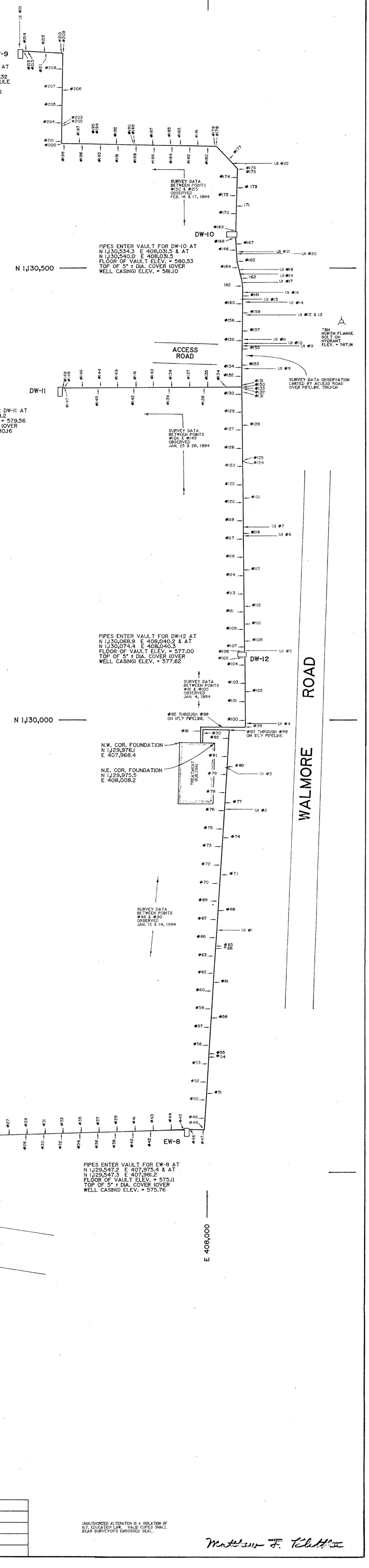
UTILITY CROSSING SURVEY DATA

ADD 1,100,000 TO NORTH COORDINATE & 400,000 TO EAST COORDINATE FOR SITE COORDINATE SYSTEM VALUES. PERIODIC SNOW COVER & OTHER TRENCH DEBRIS PRESENT DURING SURVEY DATA OBSERVATION.

NOTE- DESCRIPTION OR IDENTIFICATION OF UTILITIES BASED ON DRAWING B-4, FILE NYOI-297, PROJECT No. 923-9055 BY GOLDER ASSOCIATES WITH LAST REVISION DATE OF 4/93 OR BASED ON IN-THE-FIELD VERBAL DESCRIPTIONS BY PERSONEL OF THE FOLLOWING: GOLDER ASSOCIATES, LAIDLAW ENVIRONMENTAL SERVICES & ITS SUB-CONTRACTORS. UTILITY IDENTIFICATIONS NOT NECESSARILY VERIFIED BY KLETTKE LAND SURVEYORS, P.C.

POINT	NORTH	EAST	ELEV.	DESCR. (SEE DISCLAIMER NOTE ABOVE)
UI #1	29768.7	8011.2	580.08	TOP OF 20"± DIA. STORM SEWER
UI #2	29901.3	8020.3	581.47	TOP OF 6" DIA. SANITARY SEWER
UI #3	29948.6	8022.2	581.92	TOP OF 2"± DIA. GAS LINE
UI #4	29996.3	8041.2	581.37	TOP OF 18"± STORM SEWER
UI #5	30076.4	8040.3	581.19	TOP OF 15"± STORM SEWER
UI #6	30203.7	8039.4	582.87	TOP OF 5"± DIA. GAS LINE
UI #7	30214.4	8038.0	580.63	INVERT OF 15" DIA. STORM SEWER
UI #8	30388.4	8039.1	582.84	TOP OF 8" OUT DIA. DRAIN TILE (DESTRUCTED)
UI #9	30414±		582.6±	TOP OF 6" DRAIN TILE (DESTRUCTED, UNDER ROAD)
UI #10	30416±		582.5±	TOP OF 17" STORM SEWER (DESTRUCTED, UNDER ROAD)
UI #11	30420.5	8038.5	583.78	TOP OF 24" ± SQUARE UTILITY CROSSING
UI #12	30448.7	8036.5	583.23	TOP OF 5" DIA. DRAIN TILE (DESTRUCTED) ASSUMED TO PREVIOUSLY CONNECT TO UI #13
UI #13	30445.9	8040.9	583.15	TOP OF 5" DIA. DRAIN TILE (DESTRUCTED) ASSUMED TO PREVIOUSLY CONNECT TO UI #12
UI #14	30463.9	8040.7	583.56	TOP OF 10" DRAIN TILE (DESTRUCTED)
UI #15	30465.1	8035.2	583.85	TOP OF 8" DRAIN TILE (DESTRUCTED)
UI #16	30472.9	8038.7		2½" DIA. (ASSUMED ELECTRIC) CONDUIT
UI #17	30484.4	8036.0	583.52	DRAIN TILE REMNANTS
UI #18	30498.8	8033.9	583.51	DRAIN TILE REMNANTS
UI #19	30493.6	8034.0	585.6±	ELECTRIC WIRES AT WEST WALL OF TRENCH HEADING S'WLY.
UI #20	30515.4	8032.5	584.40	TOP OF 7" DIA. STORM SEWER (DESTRUCTED)
UI #21	30517.3	8033.6	584.56	TOP OF 4½" DIA. PLASTIC PIPE (DESTRUCTED)
UI #22	30615.3	8027.7	583.57	TOP OF 20" DIA. STORM SEWER
UI #23	30744.1	7791.2	584.59	TOP OF 16" DIA. CONC. PIPE (ASSUME STORM SEWER)





NOTES

1) SITE COORDINATE SYSTEM BASED ON HORIZONTAL CONTROL SUPPLIED BY WENDEL ENGINEERS, P.C. AND SHOWN BELOW

CP-D	N 1,128,802.76	E 408,110.90	P.K. NAIL
CP-E1	N 1,129,539.43	E 408,036.26	R.R. SPIKE
CP-DE1-1	N 1,130,178.98	E 408,101.47	P.K. NAIL
CP-DE-1	N 1,130,562.34	E 408,145.93	P.K. NAIL

2) ELEVATION DATUM = NGVD 1929 BASED ON NGS BM C93, PUBLISHED ELEVATION = 581.80

3) PORTIONS OF PIPELINE UNDER SNOW COVER DURING OBSERVATION OF SURVEY DATA.

KLETTKE LAND SURVEYORS, P.C.
IVAN R. KLETTKE L.S. 048157 - NEAL R. KLETTKE L.S. 049505 - MATTHEW F. KLETTKE L.S. 050034
2470 STOELTING ST. (BERGHOLZ), NIAGARA FALLS, NEW YORK, 14304 (716)731-5613

MAP OF GROUNDWATER EXTRACTION SYSTEM PIPELINE	
LOCATION TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK	
DATE 1993 & 1994 (SEE SURVEY DATA OBSERVATION DATES ABOVE, ALONG SIDE PORTIONS OF PIPELINE)	
SCALE 1" = 50'	REPUTED OWNER- BELL AEROSPACE TEXTRON
JOB NO. 4206	REQUESTED BY- LAIDLAW ENVIRONMENTAL SERVICES, INC.

UNAUTHORIZED ALTERATION IS A VIOLATION OF N.Y. EDUCATION LAW. VALID COPIES SHALL BEAR SURVEYOR'S EMBOSSED SEAL.

Matthew F. Klettke

APPENDIX K

PRESSURE TEST PROCEDURE AND PRESSURE TEST RESULTS

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time: 12/10/93	14:38			15:38	1 HOUR
Temperature (Ambient):	40° F			40°F	
Test Pressure (psig):	4 3/4			4 3/4	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 1 hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6- INCH LINE FROM EW-7 TO EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: TEST PRIOR TO BACKFILL
SUPERCEEDED BY TEST ON 12/16/93

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by Kevin J. White	Contractor's Representative	LAIDLAW Company	12/10/93 Date
Test Witnessed by David Welch	Owner's Representative	Golder Assoc. Company	12/10/93 Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	12/13/93 10:13	12/13 14:00	12/14 8:15	12/14 10:13	24 hrs.
Temperature (Ambient):	40° F	45° F	30°F	30°F	
Test Pressure (psig):	29	25	16	15	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2-INCH LINE FROM EW-7 TO EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: TEST PRIOR TO BACKFILL

Test Results: Pass _____ Fail ✓

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by Paul Baker — Contractor's Representative — Company — 12-21-93 Date

Test Witnessed by Dick Wik — Owner's Representative — GOLDER ASSOC. Company — 12/14/93 Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	12/16/93 15:43	12/16 16:42		12/16 16:42	1 hour
Temperature (Ambient):	40°F	40°F		40°F	
Test Pressure (psig):	7	6.5		6.5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for one hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6- INCH LINE FROM EW-7 TO EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: TEST PRIOR TO BACKFILL

SUPERCEEDS TEST OF 12/10/93 - PIPE CUT FOR REPAIRS.

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J Bolen	Cayuga	12-16-93
	Contractor's Representative	Company	Date
Test Witnessed by	D. L. Wahl	GOLDER ASSC.	12/16/93
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	12/16/93 16:50	12/17 9:25		12/17 16:50	24 hours
Temperature (Ambient):	40°F	25°F			30°F
Test Pressure (psig):	32	32			32

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2-inch line from EW-7 to EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: TEST PRIOR TO BACKFILL

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul Baker	Company	12-21-93
	Contractor's Representative		Date
Test Witnessed by	[signature]	GOLDER ASSOC.	12/17/93
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/3/94 13:35	1/3 15:35	1/4 5:30	1/4 13:35	24 h
Temperature (Ambient):	15°F	15°F	20°F	20°F	
Test Pressure (psig):	34	34	34	34	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: DW-12 to building - 2-inch line

Line Numbers:

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill.

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by _____ Contractor's Representative — Company — 1-4-94 Date

Test Witnessed by _____ Owner's Representative — Golder Assoc. Company — 1/4/94 Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/4/94 13:00	1/4 13:30		1/4 14:00	1 h
Temperature (Ambient):	20°F	20°F		20°F	
Test Pressure (psig):	5	4.5		4.5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for one hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-inch line from DW-12 to building

Line Numbers:

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Baker	Calpine	1-4-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dave Wilson	Golder Assoc.	1/4/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/13/94 11:22	1/13 13:45	1/14 8:35	1/14 11:22	24 hours
Temperature (Ambient):	32°F	32°F	20°F	20°F	
Test Pressure (psig):	34	34	33	33	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 PSI AIR FOR 24 HOURS

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2- INCH LINE FROM BUILDING TO EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Boles Contractor's Representative	Cayuga Company	1/14/94 Date
Test Witnessed by	Dan Weber Owner's Representative	Golder Assoc. Company	1/14/94 Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/14/94 13:30	1/14 14:00		1/14 14:36	1 Hour
Temperature (Ambient):	20°F	20°F		20°F	
Test Pressure (psig):	5	5		5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 PSI AIR FOR ONE HOUR

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-INCH LINE FROM BUILDING TO EW-8

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Balea	Cayuga	1-14-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dan Wilson	Golder Assoc.	1/14/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/24/94 15:24			1/25/94 15:24	24 hrs.
Temperature (Ambient):	32°F			25°F	
Test Pressure (psig):	35			32	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: DW-11 through "T" to DW-12 - 2-inch line

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Baker	Caryllia	1-25-94
	Contractor's Representative	Company	Date
Test Witnessed by	David E. Wilk	Golder Assoc	1/25/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	1/25/94 9:23			1/26 10:23	1 hour
Temperature (Ambient):	15°F			15°F	
Test Pressure (psig):	6			6	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for one hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: DW-11 through "T" to DW-12 - 6-inch line

Line Numbers:

Portion of Line Tested: (✓) All, or ( ) :

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by: Paul J. Bolea (Contractor's Representative)	Cayuga (Company)	1-26-94 (Date)
Test Witnessed by: Dave Wahr (Owner's Representative)	Golder Assoc (Company)	1/26/94 (Date)

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	2/15/94 11:20		2/16/94 10:00	2/16 11:20	24 hours
Temperature (Ambient):	39°F		32°F	32°F	
Test Pressure (psig):	32		31	31	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2-inch line from DW-9 to DW-10

Line Numbers:

Portion of Line Tested: (✓) All, or ( )

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by: Paul L. Bolea (Contractor's Representative)	Company: Cayuga	Date: 2-16-94
Test Witnessed by: David Welch (Owner's Representative)	Company: Golder Assoc	Date: 2/16/94

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	2/16/94 11:45			2/16 12:45	1 hour
Temperature (Ambient):	35°F			35°F	
Test Pressure (psig):	5			5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 1 hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-inch line from DW-10 to DW-9

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Bolla	Cayuga	2-16-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dmi Wk	Golder Assoc.	2/16/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	2/16/94 10:20			2/16 11:20	1 hour
Temperature (Ambient):	32°F			32°F	
Test Pressure (psig):	5.5			5.5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for one hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-inch line from DW-12 to DW-11 to DW-10

Line Numbers:

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Bales	Canyon	2-16-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dale Wehr	Golder Assoc	2/16/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	2/16/94 11:45		2/17 9:00	2/17 11:45	24 hours
Temperature (Ambient):	35°F		33°F	40°F	
Test Pressure (psig):	32		32	32	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 30 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2- inch line from DW-12 to DW-11 to DW-10

Line Numbers:

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Test prior to backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Boles	Canyon	2-17-94
	Contractor's Representative	Company	Date
Test Witnessed by	Eric Weber	Golder Assoc.	2/17/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	3/14/94 11:20	3/14 12:15		3/16 13:20	2 Hours
Temperature (Ambient):	25°F	25°F		25°F	
Test Pressure (psig):	85	85		85	

Test Medium: (✓) Water ( ) Air ( ) Nitrogen ( ) _____

Test Specification: 75 psi water for two hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: EW-7A to treatment building (at flow control valve) (at first flange) - 2-inch line

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: All check valves held open - EW-8 plugged at flow control valve. Post Backfill

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by Paul J. Bulla — Contractor's Representative — Cayuga — Company — 3-16-94 — Date

Test Witnessed by Dan Welch — Owner's Representative — Golder Assoc. — Company — 3/16/94 — Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	3/25/94 5:45			3/28 9:00	63:15
Temperature (Ambient):	35°F			35°F	
Test Pressure (psig):	8			7	

Test Medium: ( ) Water (✓ Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6inch line from building to DW-10

Line Numbers: including DW-11, (excluding DW-10 to DW-9)

Portion of Line Tested: (✓ All, or ( ) _____

Remarks: Post-backfill. Jumper lines pass air though intermediate vaults

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by Paul J. Baker — Contractor's Representative — Cayuga Plumbing — Company — 3-28-94 — Date

Test Witnessed by Dave Wick — Owner's Representative — Golder Assoc — Company — 3/28/94 — Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	3-25-94 5:45 PM			3/28 9:00	63:15
Temperature (Ambient):	~~70°F~~ 35°F			35°F	
Test Pressure (psig):	10.75 PSIG			10.75	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 24 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-inch line from EW-7 to building

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Post-backfill: Jumper line connects 6-inch line through EW-8

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by Paul J Baker — Contractor's Representative — Cayuga Plumbing — Company — 3-28-94 — Date

Test Witnessed by Dave Lynch — Owner's Representative — Golder Assoc. — Company — 3/28/94 — Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	4/5/94 11:30	4/5 13:40		4/6 11:30	24 - hours
Temperature (Ambient):	50° F	50°F		40° F	
Test Pressure (psig):	9.5	9.5		9.5	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 24 - hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6-inch line between building - DW-12, DW-11, DW-10, DW-9

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Jumper lines connect 6-inch lines through vaults
Post-backfill (final) test

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Bolea	Cayuga	4-6-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dave Welch	Golder Assoc.	4/6/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	4/7/94 15:00			4/7 17:00	2 hours
Temperature (Ambient):	50°F			50°F	
Test Pressure (psig):	75			75	

Test Medium: (✓) Water ( ) Air ( ) Nitrogen ( ) _____

Test Specification: 75 psi water for 2 hours

DESCRIPTION OF PIPELINE(S) TESTED

Location: 2 inch line from Building to DW-12, DW-11, DW-10, DW-9

Line Numbers: _____

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Internal vault piping not tested, as it was tested in the pre-backfill test. This is the final post-backfill test

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by	Paul J. Balla	Cayuga PLB	4-7-94
	Contractor's Representative	Company	Date
Test Witnessed by	Dave Dick	Golder Assoc	4/7/94
	Owner's Representative	Company	Date

F/N: PIPETEST.WK1

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time:	11/22/94 13:40	14:10		14:40	1 hr.
Temperature (Ambient):	35 °F	35 °F		35 °F	
Test Pressure (psig):	5.2	5.2		5.2	

Test Medium: ( ) Water (✓) Air ( ) Nitrogen ( ) _____

Test Specification: 5 psi air for 1 hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6" inch line from treatment building, to EW-8, to EW-7

~~Line Numbers:~~ (Tested after extrusion welding of end seals)

Portion of Line Tested: (✓) All, or ( ) _____

Remarks: Jumper hose connects EW-8 to EW-7 leg to EW-8 to building leg. Line is filled from treatment building compressor.

Test Results: Pass ✓ Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by _____ Contractor's Representative — AAJ&A Company — 11/22/94 Date

Test Witnessed by _____ Owner's Representative — Golder Assoc. Company — 11/22/94 Date

F/N: PIPETEST.WK1

BELL AEROSPACE TEXTRON
WHEATFIELD, NEW YORK

PIPE TEST CERTIFICATE

	Initial Test Status	Interim Test Status	Interim Test Status	Final Test Status	Duration
Date/Time: 11/28/94	9:10	9:30	9:45	10:10	1 Hr
Temperature (Ambient):	50°F	50°F	50°F	50°F	
Test Pressure (psig):	5.5	5.5	5.5	5.5	

Test Medium: ( ) Water (X) Air ( ) Nitrogen ( ) _____

Test Specification: 5PSI Air for 1 Hour

DESCRIPTION OF PIPELINE(S) TESTED

Location: 6 inch Line from DW-9 to treatment plant

Line Numbers: _____

Portion of Line Tested: (√) All, or ( ) _____

Remarks: Tested After extrusion welding of end seals Jumper hoses connects pipe annuli between vaults. Includes DW-11.

Test Results: Pass X Fail _____

I certify that the above information is correct and that the pipeline described above was prepared and tested in my presence in accordance with the Specification indicated above.

Signed by _____ Contractor's Representative — CAYUGA Company — 11/28/94 Date

Test Witnessed by _____ Owner's Representative — Golder Associates Company — 11/28/94 Date

F/N: PIPETEST.WK1

APPENDIX L

AIR MONITORING FORMS

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/20/93 Sheet 1 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Overcast Temp. 60° Wind D. W V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	20	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	25	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100	Organics CALIBRATION ✓ - 101 ppm Isobutyl.
		PART	0	Particulate CALIBRATION ✓ - background air
13:15	50' upwind of saw	MULTI	20.9	(O_2) During cutting of asphalt
		MULTI	0	(LEL) for treatment building
		MULTI	0	(H_2S)
		OVM	0	
		PART	0	mg/m^3
13:20	100' downwind of saw	MULTI	20.9	% O_2
		MULTI	0	% LEL
		MULTI	0	H_2S ppm
		OVM	0	ppm
		PART	.14	mg/m^3
14:00	50 upwind of saw	MULTI	21.0	% O_2
		MULTI	0	% LEL
		MULTI	1	ppm H_2S
		OVM	0	ppm organics
		PART	0	mg/m^3

Recommendations

David Wohn
Printed Name

Dave Wohn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/20/93 Sheet 2 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 60's Wind D. W V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
14:02	~~TDS~~	MULTI	20.9	% O_2 - During cutting of
	100' downwind	MULTI	0	% LEL asphalt for treatment
	of saw	MULTI	0	ppm H_2S building.
		OVM	0	ppm Organics
		PART	0.14	mg/m³
14:30	50' upwind	MULTI	21.0	% O_2
	of saw	MULTI	0	% LEL
		MULTI	0	ppm H_2S
		OVM	0	ppm organics
		PART	0	mg/m³
14:32	100' downwind	MULTI	21.0	% O_2
	of saw	MULTI	0	% LEL
		MULTI	0	ppm H_2S
		OVM	0	ppm organics
		PART	1.07 *	mg/m³

To closest saw

Recommendations

* Exceeds limit of 150 ug/m³

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/20/93 Sheet 3 of 3

Job Name TDS CAA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 60°S Wind D. W V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
15:08	50' upwind of saw	MULTI	21.0	O_2 ~~CALIBRATION ✓ ON 20.9 % O_2~~
		MULTI	0	LEL ~~CALIBRATION ✓ – % LEL (% CH_4)~~
		MULTI	-1	H_2S ~~CALIBRATION ✓ – ppm H_2S~~
		OVM	0	Organics ~~CALIBRATION ✓ – ppm Isobutylene~~
		PART	0	Particulate ~~CALIBRATION ✓ – background cpm~~
15:10	100' downwind of saw	MULTI	21.0	During cutting of asphalt for treatment building
		MULTI	0	
		MULTI	0	
		OVM	0	
		PART	.71 *	
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Move close to saw

Recommendations

* Exceeds limit of 150 ug/m^3 – Review of HSP indicates monitoring point is too close to saw. Relocated meter to HSP designated position.

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/21/93 Sheet 1 of 3

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST - RAIN Temp. 60's Wind D. SW V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-ZR / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:00	Office	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	19 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	25 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	96 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0 ug/m³	Particulate CALIBRATION ✓ - background air
8:05	50' upwind of saw	MULTI	20.9	O_2 During sawing of asphalt
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	Org.
		PART	—	
8:20	100' downwind of saw ↓ Downwind EZ*	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	.03	15 min TWA
9:25	50' upwind of building	MULTI	20.9	O_2 While stripping asphalt.
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	—	

Recommendations

* For sawing - the downwind EZ is the nearest downwind BAT plant property boundary.

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/21/93 Sheet 2 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

• If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.•	Reading	Procedure/Observations/Comments
	~~100' downwind~~	MULTI		O_2 CALIBRATION ✓ ON ~~20.9 % O_2~~
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle
		PART		Particulate CALIBRATION ✓ - background air
9:21	100' downwind	MULTI	20.8	O_2
	of building	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
9:25	Downwind EZ	PART	.01	15 min TWA
	50' upwind	MULTI	20.8	O_2
	of building	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	-	
10:17	100' downwind	MULTI	20.8	O_2
	of building	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
10:10	~~Down~~ Downwind EZ	PART	0.01	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/21/93 Sheet 3 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
10:55	50' upwind of building	MULTI	20.9	O_2
		MULTI	-1	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	-	
10:58	100' downwind of building	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
11:15	Downwind EZ	PART	0	15 min TWA
13:45	In excavation	MULTI	20.9	While excavating sump
		MULTI	0	
		MULTI	0	
		OVM	0	
		PART	0	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/22/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 70's Wind D. NW V 2-10

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Office	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	25 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0 mg/m3	Particulate CALIBRATION ✓ - background air
14:10	BZ	MULTI	20.9	O_2 While excavating foundation
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	–	
14:12	DOWNWIND	MULTI	20.9	O_2
	EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
		OVM	0	
		PART	0	15 min TWA
15:00	BZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
~~14:13~~		PART	–	

Recommendations

BZ = Breathing Zone

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 9/22 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 70° Wind D. NW V 2-10

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
15:02	Downwind	MULTI	20.9	O_2 - While excavating
	E2	MULTI	0	LEL foundation
		MULTI	0	H_2S
		OVM	0	
15:17		PART-	0.02	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/4/93 Sheet 1 of 3

Job Name TDS CCA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. 50's Wind D. S V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:50		MULTI	20.8 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	25 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98.5 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.02 mg/m³	Particulate CALIBRATION ✓ - background air
11:40	BZ	MULTI	20.8	O_2 - During cycling of DW-12
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
11:42	Downwind EZ	MULTI	20.8	O_2
	EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
11:55	DW EZ PER.	PART	0.04 mg/m³	
11:55	BZ	MULTI	20.8	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing Zone

EZ = Exclusion Zone

TOC = Top of casing of augers

DW EZ PER = Downwind Exclusion Zone Perimeter

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/4/93 Sheet 2 of 3

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
11:56	Downwind of	MULTI	20.8	O_2 - During augering of
	EZ	MULTI	0	LEL DW-12
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW EZ PER	PART	.02	15 min TWA
12:55	BZ	MULTI	20.8	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
12:57	Downwind	MULTI	20.8	O_2
	EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
1:10	DW EZ PER	PART	.02	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/4/93 Sheet 3 of 3

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. LJF0529 / 25205-2H / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle
		PART		Particulate CALIBRATION ✓ - background air
1:35	B2	MULTI	20.9	O_2 - During augering of
	TOC	MULTI	0	LEL DW-12
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	–	
1:37	DOWNWIND	MULTI	20.9	O_2
	E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
1:50	DW E2 PER.	PART	0.02	
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/5/93 Sheet 1 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 50's Wind D. E V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. LOF0529 / 25205-2A / 5868

Calibration Gas and Concentration — Instrument Reading — Span/Gain/RF Setting —

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:55	Trailer	MULTI	20.8 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (15 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl.
9:10		PART	0.04 mg/m^3	Particulate CALIBRATION ✓ - background air
10:40	BZ	MULTI	20.8	O_2 - While socket
	TCC	MULTI	0	LEL reaming DW-12
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
10:41	Downwind of EZ	MULTI	20.8	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
10:55	DW PER EZ	PART	0.07	15 min TWA
11:20	BZ	MULTI	20.9	O_2
	TCC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing Zone

EZ = Exclusion Zone

DW PER = Downwind Perimeter

David Weha
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/5/93 Sheet 2 of 4

Job Name TDS CCA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.4 % O_2~~
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
11:24	DOWNWIND	MULTI	20.9	O_2 White 15" socket
	OF EZ	MULTI	0	LEL reaming DW-12
	↓	MULTI	0	H_2S
		OVM	0	
11:35	DW PER EZ	PART	0.03	15 Min TWA
12:00	B2	MULTI	20.9	O_2
	~~B2~~ TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
12:02	DOWNWIND	MULTI	20.9	
	OF EZ	MULTI	0	
	↓	MULTI	0	
		OVM	0	
12:15	DW PER OF EZ	PART		15 Min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associa[illegible] Inc.

A[illegible] MONITORING DATA SHEET

Date 10/5/93 Sheet 3 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ – background air
13:15	BZ	MULTI	20.9	O_2 while cutting
	TOC	MULTI	0	LEL sealed DW-12
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
13:18	DOWNWIND			
	OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
13:30	DW PER EZ	PART	0.02	15 min TWA
15:25	BZ	MULTI	20.9	O_2 While cutting
	TOC	MULTI	0	LEL EW-8
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

DAVID WEHN
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/5/93 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2FA / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
15:27	DOWNWIND	MULTI	20.9	O_2 - While organics
	CF E2	MULTI	0	LEL FW-8
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW E2 PER	PART	0.02	15 min TWA
15:50	B2	MULTI	20.9	O_2
	TCC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	-	
15:52	DOWNWIND	MULTI	20.9	O_2
	CF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
16:05	DW E2 PER	PART	0.03	15 min TWA

Recommendations

David Webb
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/6/93 Sheet 1 of 1

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 60's Wind D. NE V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:55	Trailer	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	25	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100	Organics CALIBRATION ✓ - 101 ppm Isobutyle.
		PART		Particulate CALIBRATION ✓ - background air
800	BZ	MULTI	20.8	O_2 - while augering
	TCC	MULTI	0	LEL casing socket at
	BZ	MULTI	0	H_2S EW-5
	BZ	OVM	0	
		PART	-	
9:02	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
8:15	DW PER EZ	PART	0.10	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

BZ = Breathing Zone

TCC = Top of casing

EZ = Exclusion Zone

DW PER = Downwind perimeter

David Wohn
Printed Name

Signature

Golder Associa... Inc.

A... MONITORING DATA SHEET

Date 10/2/93 Sheet 1 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. E V 5-20

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	25 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98.5 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl.
		PART	0	Particulate CALIBRATION ✓ - background air
12:45	BZ	MULTI	20.9	O_2 - While augering
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER OF EZ	PART	0.05	15 min TWA
12:15	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing Zone
EZ = Exclusion Zone
TOC = Top of casing
DW PER = Downwind perimeter

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/2/93 Sheet 2 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle.
		PART		Particulate CALIBRATION ✓ - background air
12:17	DOWNWIND	MULTI	20.9	O_2 - While augering
	OF E2	MULTI	0	LEL DW-11
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. E2	PART	0.04	15 min TWA
14:00	B2	MULTI	20.9	O_2 While augering
	TOC	MULTI	0	LEL DW-11
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
14:02	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
14:15	DW PER. OF E2	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/7/93 Sheet 3 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ – background air
14:50	BZ	MULTI	20.9	O_2 While augering
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
14:51	DOWNWIND	MULTI	20.9	O_2
	0 E2	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.05	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Uehn
Printed Name

Signature

Golder Associa... Inc.

A... MONITORING DATA SHEET

Date 10/8/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN / OVERCAST Temp. 60's Wind D. NE V 2-10

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:40	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	96 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyle
		PART	0 mg/m³	Particulate CALIBRATION ✓ - background air
8:00	BZ	MULTI	20.9	O_2
	~~TOC~~ TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	1	
		PART	—	
	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
8:20	DW PER. E2	PART	0.11	15 min TWA
8:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing zone

E2 = Exclusion zone

DW PER. = Downwind perimeter

TOC = Top of casing

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/8/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
8:35	DOWNWIND	MULTI	20.8	O_2
	OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
8:50	DW PER. E2	PART	0.10	15 min TWA
	B2	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
8:55	DOWNWND OF	MULTI	20.9	
	E2	MULTI	0	
	↓	MULTI	0	
	↓	OVM	0	
9:35	DW PER. E2	PART	0.09	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/11/93 Sheet 1 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. 30's Wind D. NW V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-214 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:40	Trailer	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	95	Organics CALIBRATION ✓ - 101 ppm Isobutyle
		PART	0.08	Particulate CALIBRATION ✓ - background air
9:05	BZ	MULTI	20.9	O_2 - White coring
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
9:08	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
9:20	DW PER. EZ	PART	0.07	15 min TWA
10:00	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing Zone

TOC = Top of casing

EZ = Exclusion Zone

DW PER. = Downwind Perimeter

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/11/93 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-274 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
10:04	DOWNWIND	MULTI	20.9	O_2 while coring
	OF E2	MULTI	0	LEL DW-11
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. E2	PART	0.05	8 min TWA
10:40	B2	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
10:42	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. E2	PART	.006	15 min TWA ↓

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/11/93 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
12:50	BZ	MULTI	20.9	O_2 CALIBRATION ✓ ON / 20.1 % O_2
	TOC	MULTI	0	LEL CALIBRATION ✓ / - % LEL (% CH_4)
	BZ	MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
	BZ	OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
		PART	—	Particulate CALIBRATION ✓ - background air
12:52	DOWNWIND	MULTI	20.9	O_2 — while coring DW-11
	EZ	MULTI	0	LEL
	"	MULTI	0	H_2S
	"	OVM	0	
		PART	0.05	15 min TWA
14:00	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	2	
		PART		
14:02	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART		15 min TWA

Recommendations

David Wahn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/4/93 Sheet 4 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2FA / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
15:25	B2	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2 /
	TOC	MULTI	0	LEL CALIBRATION ✓ / - / % LEL X % LEL (CH_4)
	B2	MULTI	0	H_2S CALIBRATION ✓ / - / ppm H_2S
	B2	OVM	2.8	Organics CALIBRATION ✓ / - / ppm Isobutylene
		PART	—	Particulate CALIBRATION ✓ / - / background corr
	DOWNWIND OF EZ	MULTI	20.9	O_2 While coring
		MULTI	0	%LEL DW-11
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.05	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wohn
Printed Name

Dave Wohn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/12/93 Sheet 1 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 50's Wind D. N V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFC-529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:40	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyle.
		PART	0.08 mg/m³	Particulate CALIBRATION ✓ - background air
8:32	BZ	MULTI	20.9	O_2 - While mowing
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	
8:34	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.17	15 min TWA
9:00	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/12/93 Sheet 2 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas ____ Instrument Reading ____ Span/Gain/RF Setting ____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:03	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ - %LEL (% CH_4)
	↓	MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
	↓	OVM	3	Organics CALIBRATION ✓ - ppm Isobutyl.
	DW PER EZ	PART	0.21	Particulate CALIBRATION ✓ - background air
9:15	BZ	MULTI	20.9	O_2 while reaming
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	3	
		PART	—	
9:16	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0.5	
		PART	—	
9:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	17 *	
		PART	—	

Recommendations

* Exceeds action level - went to level "C".

David Wehr
Printed Name

David Wehr
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/12/93 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:32	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	OF E2	MULTI	0	LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
	↓	OVM	4	Organics CALIBRATION ✓ - ppm Isobutyl.
	DW PER. E2	PART		Particulate CALIBRATION ✓ - background air
				↑
9:45		MULTI	–	while reaming
		MULTI	–	DW-11
		MULTI	–	
	DW OF E2	OVM	8*	
		PART	–	
13:00	BZ	MULTI	20.8	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
13:02	DW OF E2	MULTI	20.8	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.12	

Recommendations

* Exceeds action level - shut down drilling

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/12/93 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.4 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyle.
		PART		Particulate CALIBRATION ✓ – background air
13:30	BZ	MULTI	20.8	O_2 – while reaming
	TOC	MULTI	0	LEL DW-11
	BZ.	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
	DW OF E2	MULTI	20.8	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER E2	PART	0.13	
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/13/93 Sheet 1 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. 50's Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2M / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	25	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.19	Particulate CALIBRATION ✓ - background air
14:00	BZ	MULTI	20.9	O_2 - while augering EW-7
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
14:02	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
	↓	OVM	0	
	DW PER. EZ	PART	0.09	15 min TWA
14:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Nichols
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/13/93 Sheet 2 of 3

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
	DOWNWIND	MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
	OF EZ	MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
	↓	MULTI		H_2S CALIBRATION ✓ – ppm H_2S
	↓	OVM		Organics CALIBRATION ✓ – ppm Isobutylene
	DW PER EZ	PART		Particulate CALIBRATION ✓ – background air
14:32	DOWNWIND	MULTI	20.9	O_2 – while augering
	OF EZ	MULTI	0	LEL EW-7
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.10	15 min TWA
14:55	BZ	MULTI	20.9	O_2
	DC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
14:56	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/13/93 Sheet 3 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle.
		PART		Particulate CALIBRATION ✓ - background air
15:20	BZ	MULTI	20.9	O_2 White 12V ID
	TOC	MULTI	0	LEL reading EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	--	
	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. EZ	PART	0.06	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/11/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 40's Wind D. E V 2-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl.
		PART	0.06	Particulate CALIBRATION ✓ - background air
14:20	BZ	MULTI	20.8	O_2 White coring
	TOC	MULTI	0	LEL EW-8
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. E2	PART	0.20	15 min TWA
15:00	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ = Breathing Zone
TOC = Top of casing
E2 = Exclusion Zone
DW PER. = Downwind perimeter

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/14/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyle
		PART		Particulate CALIBRATION ✓ – background air
	~~BOLE~~ ↑	MULTI	20.9	O_2
1505	DU OF E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
		OVM	0	
	DU PER E2	PART	0.05	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David J Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/15/93 Sheet 1 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather P. Cloudy Temp. 50° Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	25 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl.
		PART	0.18 mg/m³	Particulate CALIBRATION ✓ - background air
	BZ	MULTI	20.9	O_2 while cranking
7:58	~~TOC~~ TOC	MULTI	0	LFL BW-8
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
8:00	Downwind	MULTI	20.9	O_2
	of E2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
8:15	DW PER. E2	PART	0.18	is min TWA
10:15	BZ	MULTI	20.9	O_2 while reading
	TOC	MULTI	0	LEL BW-8
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	

Recommendations

David Wehn
Printed Name

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Golder Associates Inc.

MONITORING DATA SHEET

Date 10/15/93 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration — Instrument Reading — Span/Gain/RF Setting —

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
10:17	Downwind	MULTI	20.9	O_2 While roaming
	of EZ	MULTI	0	LEL EW-8
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER.	PART	0.19	15 min TWA
10:45	B2	MULTI	20.9	O_2
~~10:~~	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
10:47	Downwind	MULTI	20.9	O_2
	of EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.18	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/15/93 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –
and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ % LEL (% CH_4)
		MULTI		~~H_2S CALIBRATION~~ ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle
		PART		Particulate CALIBRATION ✓ - background air
11:15	B2	MULTI	20.9	O_2 white reaming
	TOC	MULTI	0	LEL EW-8
	B2,	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
11:20	DOWNWIND	MULTI	20.9	O_2
	OF F2	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
11:35	DW PER. F2	PART	0.16	
13:30	B2	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/15/93 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - ~~% LEL~~ % (CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background air
13:35	DOWNWIND	MULTI	20.1	O_2
	OF EZ	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DU PER EZ	PART	0.15	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/18/93 Sheet 1 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 50's Wind D. SE V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.01 mg/m^3	Particulate CALIBRATION ✓ - background air
10:15	B2	MULTI	20.9	O_2 - while coring
	TOC	MULTI	0	LEL DW-12
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	-	
	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
10:30	DW PER EZ	PART	0.02	15 min TWA
10:45	B2	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	-	

Recommendations

DW PER = Downwind perimeter
EZ = Exclusion Zone
B2 = Breathing Zone
TOC = Top of Casing

David Wilson
Printed Name

David Wilson
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 10/18/93 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
10:47	DW OF EZ	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	↓	MULTI	0	LEL CALIBRATION ✓ – % LEL X % (CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
	↓	OVM	0	Organics CALIBRATION ✓ – ppm Isobutylene
	DW PER EZ	PART	0.03	Particulate CALIBRATION ✓ – background air
11:30	BZ	MULTI	20.9	O_2 – while coring
	TOC	MULTI	0	LEL DW-12
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
11:32	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
	↓	OVM	0	
11:47	DW PER EZ	PART	0.02	15 min TWA ↓
13:15	BZ	MULTI	20.9	O_2 while coring
	TOC	MULTI	0	LEL DW-12
	BZ	MULTI	0	H_2S ↓
	BZ	OVM	0	
		PART	–	

Recommendations

David Wehn
Printed Name

Signature

Golder Associa[illegible] Inc.

A[illegible] MONITORING DATA SHEET

Date 10/18/93 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

• If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
13:17	DW OF EZ	MULTI	20.9	O_2 CALIBRATION ✓ ON / 20.9% O_2
	↓	MULTI	0	LEL CALIBRATION ✓ – %LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	0	Organics CALIBRATION ✓ – ppm Isobutylene
	DW PER EZ	PART	0.02	Particulate CALIBRATION ✓ – background air
14:15	BZ	MULTI	20.9	O_2 While reaming
	TOC	MULTI	0	LEL DW-12
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
14:16	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
14:40	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0.2	
		PART	–	

Recommendations

David Wichm
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Golder Associa Inc.

A MONITORING DATA SHEET

Date 10/15/93 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyle
		PART		Particulate CALIBRATION ✓ - background air
14:42	DW OF EZ	MULTI	20.9	O_2 - while roaming
	↓	MULTI	0	LEL DW - 12
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associa. Inc.

A- MONITORING DATA SHEET

Date 10/19/93 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50° Wind D. SW V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyle.
		PART	0.02	Particulate CALIBRATION ✓ - background air
8:45	BZ	MULTI	20.9	O_2 - while coring
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	
8:46	DW of EZ	MULTI	20.9	
	↓	MULTI	0	
	↓	MULTI	0	
	↓	OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
9:15	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	

Recommendations

BZ: Breathing Zone
TOC: Top of Casing
DW: Downwind
PER: Perimeter
EZ: Exclusion Zone

David Wehn
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Signature

Golder Associa[illegible] Inc.

A[illegible] MONITORING DATA SHEET

Date 10/19/93 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-241 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:17	DW OF E2	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	↓	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER E2	PART	0.12	Particulate CALIBRATION ✓ - background air
10:20	BZ	MULTI	20.9	O_2 White coring
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
10:21	DW OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.13	15 min TWA
		MULTI		
		MULTI		
		MULTI		
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dan Wehn
Signature

Golder Associa[illegible] Inc.

A[illegible] MONITORING DATA SHEET

Date 10/20/93 Sheet 1 of 4

Job Name TDS CCA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50° Wind D. SW V 2-10

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyle
		PART	0.10	Particulate CALIBRATION ✓ - background air
8:45	BZ	MULTI	20.9	O= while reaming
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
	DW OF BZ	MULTI	20.9	O=
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. E	PART	0.22	15 @ min TWA
9:45	BZ	MULTI	20.9	O=
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

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Golder Associa Inc.

A MONITORING DATA SHEET

Date 10/20/93 Sheet 2 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2M / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:47	DN OF EZ	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	↓	MULTI	0	LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DN PER EZ	PART	0.15	Particulate CALIBRATION ✓ - background air
				↑
10:45	BZ	MULTI	20.9	O_2 - While running
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
10:47	DN OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DN PER EZ	PART	0.10	15 min TWA
				↓
13:45	BZ	MULTI	20.9	O_2 While running
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associa[illegible] Inc.

A[illegible] MONITORING DATA SHEET

Date 10/20/93 Sheet 3 of 4

Job Name TDS CCA - OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
13:47	DW OF EZ	MULTI	20.9	O_2 while reaming
	↓	MULTI	0	LEL EW-7
	↓	MULTI	0	H_2S ↓
	↓	OVM	0	↓
	DW PER EZ	PART	0.12	15 min TWA
14:30	BZ	MULTI	20.9	O_2 while reaming
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S ↓
	BZ	OVM	0	↓
		PART	—	↓
14:32	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	↓
	DW PER EZ	PART	0.19	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/20/93 Sheet 4 of 4

Job Name _____ Job Number 933-9068

Location _____

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type _____ Serial No. _____

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
15:30	BZ	MULTI	20.9	O_2 While coring
	TOC	MULTI	0	LEL EW-7
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
15:32	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.04	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/21/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9016.3

Location WHEATFIELD

Time In _____ Time Out _____ Weather P. Cloudy Temp. 50° Wind D. E V 15-25

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFC529 / 25205-376 / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99	Organics CALIBRATION ✓ - 101 ppm Isobutylen
		PART	0.02	Particulate CALIBRATION ✓ - background air
11:30	BZ	MULTI	20.9	O_2 White sugary DW-9
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
11:32	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
11:55	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/2/93 Sheet 2 of 7

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-211 / 5868

Calibration Gas and Concentration — Instrument Reading — Span/Gain/RF Setting —

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:56	DW OF EZ	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	↓	MULTI	0	LEL CALIBRATION ✓ - % LEL (✓ % CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER EZ	PART	0.02	Particulate CALIBRATION ✓ - background air
15:30	BZ	MULTI	20.9	O_2 wide augering
	TOC	MULTI	0	LEL DW-10
	BZ1	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	
	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/20/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather ? cloudy Temp. 40's Wind D. NE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529/25205-2M/5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:13	AMBIENT	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98	Organics CALIBRATION ✓ - 101 ppm Isobutylene
	(DW-10)	PART	0.02	Particulate CALIBRATION ✓ - background air
7:45	BZ	MULTI	20.9	O_2 - while auguring
	TOC	MULTI	0	LEL DW-10
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
7:47	DW OF FZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER FZ	PART	*	
13:30	BZ	MULTI	20.9	O_2 while coring
	TOC	MULTI	0	LEL DW-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

* Bo. Hog dead

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/22/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFC529 / 25205-2H / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
13:32	DN OF E2	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	↓	MULTI	0	LEL CALIBRATION ✓ % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ ppm H_2S
		OVM	0	Organics CALIBRATION ✓ ppm Isobutylene
	DN PER E2	PART	*	Particulate CALIBRATION ✓ background air
				No visible dust.
14:30	B2	MULTI	20.9	O_2 while coring DN-9
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
	[redacted]			
	DN OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DN PER E2	PART	*	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

* Battery dead

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/25/93 Sheet 1 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 50 Wind D. W V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529/25205-24/5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:40	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.11	Particulate CALIBRATION ✓ - background air
9:00	BZ	MULTI	20.9	O_2 while coring
	TCC	MULTI	0	LEL DU-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
9:03	DU OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
	↓	OVM	0	
	DU PER EZ	PART		15 min TWA ↓
10:15	BZ	MULTI	20.9	O_2 while
	TCC	MULTI	0	LEL coring DU-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/25/93 Sheet 2 of 4

Job Name TDS CCA OFFSITE Job Number 933-9063

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2H / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.4 % O_2~~
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
10:16	DW of E2	MULTI	20.9	O_2 while coring
	↓	MULTI	0	LEL DW-9
		MULTI	0	H_2S
		OVM	0	
10:30	DW PER E2	PART	0.03	15 min TWA
10:45	B2	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	B2	MULTI	0	H_2S
	B2	OVM	0	
		PART	—	
10:47	DW OF [redacted] E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
11:00	DW PER E2	PART	0.02	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/25/93 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-241 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
11:45	BZ	MULTI	20.9	O_2 while reaming
	TOC	MULTI	0	LEL DW-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
11:47	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
12:55	BZ	MULTI	20.9	O_2 while coming
	TOC	MULTI	0	LEL DW-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/25/93 Sheet 4 of 4

Job Name TDS CCA - OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ - 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
12:57	DW OF E2	MULTI	20.9	O_2 - while reeling
	↓	MULTI	0	LEL DW-9
		MULTI	0	H_2S
		OVM	0	
	DW PER. E2	PART	0.01	15 min TWA
14:00	BZ	MULTI	20.9	O_2 while reeling
	TOC	MULTI	0	LEL DW-9
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
14:02	DW OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. E2	PART	0.01	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/21/93 Sheet 1 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 50° Wind D. W V 2-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-JA / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:15	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.05 mg/m³	Particulate CALIBRATION ✓ - background air
8:00	BZ	MULTI	20.9	O_2 While coring
	TOC	MULTI	0	LEL DW-10
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
8:02	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
8:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	2.7	
		PART	—	

Recommendations

BZ = Breathing Zone
TOC = Top of Casing
EZ = Exclusion Zone
DW PER = Downwind Perimeter

David Wahn
Printed Name

Dave Wahn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/26/93 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:32	DW OF E2	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	↓	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER. E2	PART	0.09	Particulate CALIBRATION ✓ - background air
9:30	B2	MULTI	20.9	O_2 While mowing
	TOC	MULTI	0	LEL DW-10
	B2	MULTI	0	H_2S
	B2	OVM	4.7	
		PART	—	
9:32	DW OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0.8	
	DW PER E2	PART	0.05	15 min TWA ↓
10:30	B2	MULTI	20.9	O_2 While
	TOC	MULTI	0	LEL coring last run
	B2	MULTI	0	H_2S ↓
	B2	OVM	2.4	
		PART	—	

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/26/93 Sheet 3 of 4

Job Name TDS CQA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. NE W

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
10:32	DW OF E2	MULTI	20.9	O_2 CALIBRATION ✓ / ON; 20.9 % O_2
	↓	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER E2	PART	0.07	Particulate CALIBRATION ✓ / - background air
11:15	B2	MULTI	20.9	O_2 - While coring
	TOC	MULTI	0	LEL DW-10
	B2	MULTI	0	H_2S
	B2	OVM	1.4	
		PART	—	
	DW OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.05	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

Note wind shift from W to NE

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/26/93 Sheet 4 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ @ 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
14:30	BZ	MULTI	20.9	O_2 - while mowing
	TOC	MULTI	0	LEL DW - 10
	BZ	MULTI	0	H_2S
	BZ	OVM	1.2	
		PART	—	
14:32	DW OF E2	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0.2	
	DW PER. E2	PART	0.03	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/27/93 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50's Wind D. SE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45		MULTI	20.8 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylen
		PART	0.02	Particulate CALIBRATION ✓ - background air
11:20	BZ	MULTI	20.9	O_2 While reaming
	TOC	MULTI	0	LEL DW-10
	BZ	MULTI	0	H_2S
	BZ	OVM	1.0	
		PART	—	
11:22	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART		15 min TWA
	BZ	MULTI	20.9	O_2 While cleaning
	TOC	MULTI	0	LEL DW-11
	BZ	MULTI	0	H_2S
	BZ	OVM	4.2	
		PART	—	

Recommendations

David Wahn
Printed Name

David Wahn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/27/93 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0539 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
	DW OF E2	MULTI	20.9	O_2 - White cleaning
		MULTI	0	LEL DW-11
		MULTI	0	H_2S
	↓	OVM	2.4	
	DW PER E2	PART	–	No. 15 min TWA - Cleaning too brief
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wohn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/28/93 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN. OVERCAST Temp. 40° Wind D. NE V 0-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45		MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
9:00	BZ	MULTI	20.9	O_2 - while recovering
	TOC	MULTI	0	LEL EW-78
	BZ,	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	
	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.07	15 min TWA
9:45	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/28/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-24 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
9:45	DW OF EZ	MULTI	20.9	O_2 While augering
		MULTI	0	LEL FW-7B
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
14:00	B2	MULTI	20.9	O_2 While augering
	TOC	MULTI	0	LEL Casing socket
	B2	MULTI	0	H_2S and FW-7B
	B2	OVM	0	
		PART	—	
14:02	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.07	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associa[illegible] Inc.

AIR MONITORING DATA SHEET

Date 11/1/93 Sheet 1 of 2

Job Name TDS CQA OFFSITE Job Number 933 - 9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30° Wind D. E V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:45		MULTI	20 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24 ppm H_2S
		OVM	99.7	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.02	Particulate CALIBRATION ✓ - background air
12:40	BZ	MULTI	20.9	O_2 While reimming
	TOC	MULTI	0	LEL EW - 7B
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
12:42	DW OF FZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER FZ	PART	0.10	15 min TWA
13:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/1/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
13:35	DW OF EZ	MULTI	20.9	O_2 – While running
	↓	MULTI	0	LEL EW-7B
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.09	15 min TWA
14:15	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	–	
14:18	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.03	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/2/93 Sheet 1 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 40° Wind D. NE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:20		MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.02 mg/m³	Particulate CALIBRATION ✓ - background air
9:36	BZ	MULTI	20.9	O_2 - While coring
	TOC	MULTI	0	LEL EW-7B
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
10:30	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

DW = Downwind

EZ = Exclusion Zone

BZ = Breathing Zone

PER = Perimeter

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/2/93 Sheet 2 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2A / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.4 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylen
		PART		Particulate CALIBRATION ✓ - background air
10:32	DW OF EZ	MULTI	20.8	O_2 . While coring
		MULTI	0	LEL EW-7B
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
11:00	BZ	MULTI	20.9	O_2
	TOC	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
11:02	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/2/93 Sheet 3 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas ____ Instrument Reading ____ Span/Gain/RF Setting ____

and Concentration

• If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - ~~% LEL~~ (% CH_4)
		MULTI		~~H_2S CALIBRATION ✓~~ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
12:45	BZ	MULTI	20.9	O_2 - While roaming
	TOC	MULTI	0	LEL EW-7B ✓
	BZ,	MULTI	0	H_2S
	BZ	OVM	0	
		PART	-	
12:48	DW OF EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
	↓	MULTI	0	H_2S
	↓	OVM	0	
	DW PER. EZ	PART	0.01	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/4/93 Sheet 1 of 1

Job Name TDS CGA ON-SITE Job Number 933-7068

Location WHEAT FIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50° Wind D. N V _____

Instrument Type OVM Serial No. 580A-25205-219

Calibration Gas — Instrument Reading — Span/Gain/RF Setting 1.00

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:50	TRAILER	OVM	98.2	CALIBRATION ✓ ON 101 PPM ISOBUTYLENE
7:55	MW-93-05(0)		0.0	HEADSPACE ANALYSIS AT WELL
	93-05(0)		0.0	LOCATIONS - SAMPLES TAKEN
				11/2/93
7:58	93-04(0)		0.0	
	93-04(0)		0.0	
8:30	93-04(0)		0.0	HEADSPACE ANALYSIS AT WELL
				LOCATIONS - SAMPLES TAKEN
14:15	93-05(0)		0.0	11/4/93 IMMEDIATELY PRIOR TO
				DRILLING

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/4/03 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50's Wind D. N V 5 15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration — Instrument Reading — Span/Gain/RF Setting —

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
4:15	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (15 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98.4 ppm	Organics CALIBRATION ✓ - 101 ppm Isobut
		PART	0.02 mg/m³	Particulate CALIBRATION ✓ - background a
5:45	BZ	MULTI	20.9	O_2 — While drilling
	TOC	MULTI	0	LEL — 93 (5)(0)
	BZ,	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	
5:47	DU of EZ	MULTI	20.9	O_2
	↓	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DU PER EZ	PART	0.02	15 min TWA
14:15	BZ	MULTI	20.9	O_2 — While Drilling
	TOC	MULTI	0	LEL — 93-95 (0)
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
		PART	—	

Recommendations

BZ: Breathing Zone

EZ: Exclusion Zone

DU: Downwind

PER: Perimeter

David Vohn
Printed Name

Dave Vohn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/4/93 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobut
		PART		Particulate CALIBRATION ✓ - background a
14:17	DW OF E2	MULTI	20.9	O_2 while drilling
		MULTI	0	LEL 93-05 (0)
		MULTI	0	H_2S
		OVM	0	
	DW PER. E2	PART	0.02	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

D

Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/2/93 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30° Wind D. NE V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
10:30	Trailer	MULTI	20.8%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	28%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.07 mg/m³	Particulate CALIBRATION ✓ - background a
10:40	DOWNWIND OF	MULTI	20.9	O_2 - While trenching
	TRENCH	MULTI	0	LEL & min EW-7 to
		MULTI	0	H_2S EW-8
		OVM	0	
		PART	0.11	15 min TWA
14:00	DOWNWIND OF	MULTI	20.9	O_2
	TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.05	15 min TWA
15:00	DOWNWIND OF	MULTI	20.9	O_2
	TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.06	15 min TWA

Recommendations

David W John
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/6/93 Sheet 1 of 1

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30's Wind D. NE V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration • If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.8 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	29 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.02	Particulate CALIBRATION ✓ - background all
9:30	DOWNWIND LIP	MULTI	20.8	O_2 - while excavating
	OF TRENCH	MULTI	0	LEL near building
		MULTI	0	H_2S
		OVM	0	
	DUPER OF EZ	PART	0.02	15 min TWA
10:00	DOWNWIND LIP	MULTI	20.8	O_2
	OF TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.04	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/7/93 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 40° Wind D. NE V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.02 mg/m^3	Particulate CALIBRATION ✓ - background air
15:00	DOWNWIND LIP	MULTI	20.9	O_2 - While trenching
	OF TRENCH	MULTI	0	LEL approx 2+50
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.02	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 12/8/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30's Wind D. N/E V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	TRAILER	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.04	Particulate CALIBRATION ✓ - background air
8:30	DOWNWIND LIP	MULTI	20.8	O_2 - While trenching
	OF TRENCH	MULTI	0	LEL from 2+50
		MULTI	0	H_2S to EW-8
		OVM	0	
	DW PER. EZ	PART	0.02	15 min TWA
10:00	DOWNWIND LIP	MULTI	20.9	O_2
	OF TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.03	15 min TWA
12:00	DOWNWIND LIP	MULTI	20.9	O_2
	OF TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
	DW PER OF EZ	OVM	0	
		PART	0.03	15 min TWA

Recommendations

David J. John
Printed Name

David J. John
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/8/93 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST/SNOW Temp. 30° Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
13:30	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	LIP OF TRENCH	MULTI	0	LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	0	Organics CALIBRATION ✓ – ppm Isobutyl
		PART	0.04	Particulate CALIBRATION ✓ – background air
14:30	DOWNWIND LIP	MULTI	20.9	O_2 – While Trenching
	OF TRENCH	MULTI	0	LEL from 2+50 to TW-8
		MULTI	0	H_2S
		OVM	0	
		PART	0.04	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/9/93 Sheet 1 of 1

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 40° Wind D. N V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.13	Particulate CALIBRATION ✓ - background air
8:15	DOWNWIND LIP	MULTI	20.9	O_2 - While placing
	OF TRENCH	MULTI	0	LEL 1A stone
		MULTI	0	H_2S
		OVM	0	
	DO PER EZ	PART	0.15	15 min TWA
9:00	DOWNWIND LIP	MULTI	20.9	O_2
	OF TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.13	15 min TWA
9:45	DOWNWIND LIP	MULTI	20.8	O_2
	OF TRENCH	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.16	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/22/93 Sheet 1 of 3

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30's Wind D. NE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2M / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
10:30	Trailer	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - ppm Isobutyl
		PART	0.02	Particulate CALIBRATION ✓ - background a
10:30	BZ	MULTI	20.9	O_2 while excavating
	BZ	MULTI	0	LEL vault pit
	BZ	MULTI	0	H_2S for EW-12
	BZ	OVM	0	
	–	PART		
10:32	DW ~~PER~~ OF	MULTI	20.9	O_2
	E2	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. OF E2	PART	0.02	15 min TWA
11:00	BZ	MULTI	20.9	O_2
	BZ	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
	–	PART		

Recommendations

DW PER OF E2 : DOWNWIND PERIMETER OF EXCLUSION ZONE

David Wohn
Printed Name

Dave Wohn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/22/93 Sheet 2 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-211 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
?		MULTI		O_2 CALIBRATION ✓ ~~on~~ 20.9 % O_2
		MULTI		~~LEL~~ CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
11:02	DW PF EZ	MULTI	20.9	O_2 While excavating
	"	MULTI	0	LFL DW-12
	"	MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	
11:30	BZ	MULTI	20.8	O_2
	BZ	MULTI	0	LFL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
	—	PART		
11:32	DW OF EZ	MULTI		O_2
	"	MULTI		LEL
	"	MULTI		H_2S
		OVM		
	DW PER EZ	PART		

Recommendations

David Wohn
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Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/22/93 Sheet 3 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
15:00	BZ	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	BZ	MULTI	0	LEL CALIBRATION ✓ – %LEL (~%CH_4)
	BZ	MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
	BZ	OVM	0	Organics CALIBRATION ✓ – ppm Isobutyl
	—	PART		Particulate CALIBRATION ✓ – background ca.
				↑ while excavating
	DW OF E2	MULTI	20.9	O_2 DW-11
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.02	15 min TWA
15:30	BZ	MULTI	20.9	O_2
	BZ	MULTI	0	LEL
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
	—	PART		
	DW OF E2	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER OF E2	PART	0.02	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/23/93 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather P. SUNNY Temp. 20's Wind D. S V C-2

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529/25205-2A/5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:15	Office	MULTI	20.8 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	24	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.12	Particulate CALIBRATION ✓ - background a
5:00	BZ	MULTI	20.4	O_2 While excavating
	BZ	MULTI	0	LEL DW-11 pit
	BZ	MULTI	0	H_2S
	BZ	OVM	0	
	—	PART	~~0.16~~	
8:02	DW CF BZ	MULTI	20.9	O_2
	"	MULTI	0	LEL
	"	MULTI	0	H_2S
	"	OVM	0	
	DW PER BZ	PART	0.16	15 min TWA
8:30	BZ	MULTI	20.8	O_2
	BZ	MULTI	0	LEL
	BZ	MULTI	0.	H_2S
	BZ	OVM	0	
	—	PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/23/93 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
8:35	DW OF E2	MULTI	20.9	O_2 while excavating
		MULTI	0	LEL DW-11 pit
		MULTI	0	H_2S
		OVM	0	
	DW PER OF E2	PART	0.15	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

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Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/27/93 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 10°F Wind D. S V 0-2

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART	0.15 mg/m³	Particulate CALIBRATION ✓ - background a
8:30	~~DOWNWD~~ DOWNWD	MULTI	20.9	O_2 Gas trench
	LIP OF GAS	MULTI	0	LEL near building
	TRENCH	MULTI	0	H_2S
	|	OVM	0	
	DW PER. EZ	PART	0.14	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2 Trench from
	LIP OF	MULTI	0	LEL DW-12 to
	TRENCH	MULTI	0	H_2S building
	|	OVM	0	
	DW PER EZ	PART	0.15	15 min TWA
10:30	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.17	15 min TWA

Recommendations

David Wehn
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AIR MONITORING DATA SHEET

Date 12/27/93 Sheet 2 of 7

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:30	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9 % O_2
	LIP OF	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
	TRENCH	MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm (Acetyl)
	DW PER EZ	PART	0.14	Particulate CALIBRATION ✓ - background a
13:00	DOWNWIND	MULTI	20.9	O_2 Excavating
	LIP OF	MULTI	0	LEL from DW-12
	TRENCH	MULTI	0	H_2S to building
		OVM	0	
	DW PER EZ	PART	0.15	
14:00	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.15	
14:30	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.14	

Recommendations

David Wehn
Printed Name

D. Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/28/93 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 20's Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-29 / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.00 mg/m³	Particulate CALIBRATION ✓ - background a
13:30	DOWNWIND	MULTI	20.9	O_2 while trenching
	LIP OF	MULTI	0	LEL from OW-12
	TRENCH	MULTI	0	H_2S to building
		OVM	0	
	DW PER E2	PART	0.00	15 min TWA
14:30	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.00	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.00	

Recommendations

Dave Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 12/29/93 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 20° Wind D. N V 2-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529/25205-2A/5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration * If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.02 mg/m³	Particulate CALIBRATION ✓ - background ai
8:30	DOWNWIND	MULTI	20.9	O_2 - While Trenching
	LIP OF	MULTI	0	LEL from DW-12 to
	TRENCH	MULTI	0	H_2S building
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
9:00	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
9:30	DOWNWIND	MULTI	20.9	O_2
	LIP OF	MULTI	0	LEL
	TRENCH	MULTI	0	H_2S
		OVM	0	
		PART	0.02	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/3/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10°F Wind D. S V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2R / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration * If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:30	OFFICE	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24	H_2S CALIBRATION ✓ - 24 ppm H_2S
		OVM	100	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.04	Particulate CALIBRATION ✓ - background a
10:45	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from [redacted]
		MULTI	0	H_2S building to EW-8
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
11:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
13:00	DOWN WIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.04	15 min TWA

Recommendations

David Wehn
Printed Name

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Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/3/94 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.9~~ % O_2
		MULTI		~~LEL CALIBRATION ✓~~ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl
		PART		Particulate CALIBRATION ✓ – background a
14:00	DOWNWIND	MULTI	20.9	O_2 while Trenching
	OF E2	MULTI	0	LEL from building
		MULTI	0	H_2S to EW-8
		OVM	0	
	DW PER E2	PART	0.04	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/4/01 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 20° Wind D. S V 10-20

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-241 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.05 mg/m³	Particulate CALIBRATION ✓ - background a
9:30	DOWNWIND	MULTI	20.9	O_2 - While Trenching
	OF EZ	MULTI	0	LEL from building to
		MULTI	0	H_2S EW-8
		OVM	0	
	DW PER. EZ	PART	0.06	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.05	15 min TWA
11:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/4/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-241 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.4~~ % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl
		PART		Particulate CALIBRATION ✓ – background a
13:00	DOWNWIND	MULTI	20.9	O_2 While trenching
	OF EZ	MULTI	0	LEL from building
		MULTI	0	H_2S to EW-8
		OVM	0	
	DW PER. EZ	PART	0.07	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Weh
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 11/1/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 0° Wind D. S V 10-20

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. UFO:529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:45	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.05 mg/m³	Particulate CALIBRATION ✓ - background a
10:30	DOWNWIND	MULTI	20.9	O_2 — while trenching
	OF EZ	MULTI	0	LEL — from trucking to
		MULTI	0	H_2S — EW-8
		OVM	0	
	DO PER. EZ	PART	0.05	15 min TWA
11:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DO PER. EZ	PART	0.06	15 min TWA
13:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DO PER. EZ	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/6/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
14:00	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from building to
		MULTI	0	H_2S EW-8
		OVM	0	
	DW PER. EZ	PART	0.07	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.06	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/7/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 10's Wind D. S V 10-20

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2M / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.05 mg/m³	Particulate CALIBRATION ✓ - background a
8:30	DOWNWIND	MULTI	20.9	O_2 - while trenching
	OF EZ	MULTI	0	LEL from building
		MULTI	0	H_2S to EW-8
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
9:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
10:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/7/94 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
13:00	DOWNWIND	MULTI	20.9	O_2 - while trenching
	OF EZ	MULTI	0	LEL from building
		MULTI	0	H_2S to EW-8
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 1/10/94 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10's Wind D. N V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE. Serial No. LOF0529 / 25205-274 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM	96 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART.	0.06 mg/m³	Particulate CALIBRATION ✓ - background a
11:30	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from building to
		MULTI	0	H_2S EW-8
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
12:45	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
13:45	DOWNWIND	MULTI	20.8	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 1/10/94 Sheet 2 of 7

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-291 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
14:45	DOWNWIND	MULTI	20.9	O_2 While trenching
	OF E2	MULTI	0	LEL from building
		MULTI	0	H_2S EW-5
		OVM	0	
	D/S PER E2	PART	0.06	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wohn
Printed Name

David Wohn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/11/94 Sheet 1 of 1

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 30° Wind D. S V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-274 / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	94 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.06 mg/m³	Particulate CALIBRATION ✓ - background ai
10:30	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from building
		MULTI	0	H_2S & EW-8
		OVM	0	
	DW PER. EZ	PART	0.06	
11:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.06	
14:00	DOWNWIND	MULTI	20.8	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/12/94 Sheet 1 of 2

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 30° Wind D. S V 2-10

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyl
		PART	0.06 mg/m³	Particulate CALIBRATION ✓ - background a
9:00	DOWNWIND	MULTI	20.9	O_2 while trenching
	OF EZ	MULTI	0	LEL from DW-12 to
		MULTI	0	H_2S DW-10
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
11:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.06	15 min TWA

Recommendations

David Wehn
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Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/12/94 Sheet 2 of 2

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.9~~ % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
13:00	DOWNWIND	MULTI	20.9	O_2 while trenching
	OF EZ	MULTI	0	LEL from DW-2 to
		MULTI	0	H_2S DW-10
		OVM	0	
	DW PER. EZ	PART	0.06	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.07	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIH MONITORING DATA SHEET

Date 1/14/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 20° Wind D. S V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.07 mg/m³	Particulate CALIBRATION ✓ - background air
9:00	DOWNWIND	MULTI	20.9	O_2 While Trenching
	OF EZ	MULTI	0	LEL from DW-12 to
		MULTI	0	H_2S DW-10
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
11:00	DOWNWIND	MULTI	20.8	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/14/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
12:45	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ @ 20.9 % O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER EZ	PART	0.09	Particulate CALIBRATION ✓ - background air
				↑
13:45	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from DW-12 &
		MULTI	0	H_2S DW-10
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/17/94 Sheet 1 of 2

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW 20° Temp. _____ Wind D. N V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	23	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.08	Particulate CALIBRATION ✓ - background air
9:00	DOWNWIND	MULTI	20.9	O_2 - While trenching from
	OF EZ	MULTI	0	LEL DW-12 to DW-11
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
10:00	DOWNWIND	MULTI	20.8	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
11:00	DOWNWIND	MULTI	20.8	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DOWNWIND	PART	0.07	15 min TWA
	PER EZ //			

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/17/94 Sheet 2 of 2

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
13:00	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓✓ OK / 20.9 % O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER. EZ	PART	0.09	Particulate CALIBRATION ✓ - background dirt
14:00	DOWNWIND	MULTI	20.9	O_2 — While trenching
	OF EZ	MULTI	0	LEL — from DW-12
		MULTI	0	H_2S — to DW-11
		OVM	0	
	DW PER EZ	PART	-	Battery dead - no visible dust
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	-	" "
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David L. Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/13/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10's Wind D. N V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.08 mg/m^3	Particulate CALIBRATION ✓ - background air
10:00	DOWNWIND OF EZ	MULTI	20.9	O_2 - While trenching
		MULTI	0	LEL from DW-11 to
		MULTI	0	H_2S "T"
		OVM	0	
		PART	—	Battery dead - no visible dust
11:00	DOWNWIND OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	" "
		PART	—	
13:00	DOWNWIND OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	" "
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/18/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.4% O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
14:00	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF E2	MULTI	0	LEL from "T" north
		MULTI	0	H_2S of DW-12 to
		OVM	0	DW-11
		PART	-	see note P1
15:00	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	" "
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Iwaha
Printed Name

David Wah
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/20/94 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 10's Wind D. N V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
12:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	75 ppm	Organics CALIBRATION ✓ - 10. ppm Isobutylene
		PART	–	Particulate CALIBRATION ✓ - background air
13:30	DOWNWIND OF EZ	MULTI	20.9	O_2 - While excavating
		MULTI	0	LEL for vault DW-10
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	←	Battery dead - no visible dust
14:30	DOWNWIND OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	–	
15:30	DOWNWIND OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 1/21/94 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. 10's Wind D. N V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:15	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30 % LEL (1.5 % CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.0 mg/m³	Particulate CALIBRATION ✓ - background air
10:00	DOWNWIND	MULTI	20.9	O_2 - while excavating
	OF EZ	MULTI	0	LEL pit for DW-9
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.0	15 min TWA
11:00		MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.0	15 min TWA
13:30		MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
		PART	0.0	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates inc.

AIR MONITORING DATA SHEET

Date 2/2/94 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather P. CLOUDY Temp. 10's Wind D. NE V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.0 mg/m³	Particulate CALIBRATION ✓ - background air
8:30	DOWNWIND	MULTI	20.8 %	O_2 - while excavating
	OF EZ	MULTI	0	LEL from DU-9 to DU-10
		MULTI	0	H_2S
		OVM	0	
	DU PER EZ	PART	0.0	15 min TWA
9:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DU PER EZ	PART	0.02	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DU PER EZ	PART	0.01	15 min TWA ✓

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 7/7/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:00	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ - %LEL (%CH_4)
		MULTI	0	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	0	Organics CALIBRATION ✓ - ppm Isobutylene
	DW PER EZ	PART	0.02	Particulate CALIBRATION ✓ - background air
				↑
13:00	DOWNWIND	MULTI	20.9	O_2 while trenching
	OF EZ	MULTI	0	LEL from DW-9 & DW-10
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.00	
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	
				↓

Recommendations

David L John
Printed Name

David L John
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 2/3/94 Sheet 1 of 2

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW SQUALLS Temp. 10° Wind D. E V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30		MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	50 %	LEL CALIBRATION ✓ - 50 % LEL (1.5% CH_4).
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.02 mg/m³	Particulate CALIBRATION ✓ - background air
9:30	DOWNWIND	MULTI	20.9	O_2 while excavating
	OF EZ	MULTI	0	LEL from DW-9 to DW-10
		MULTI	0	H_2S along pond
		OVM	0	
	DW PERIMETER EZ	PART	0.02	15 min TWA
10:30	DOWN WIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
11:30	DOWN WIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.03	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 2/3/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.9~~ % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
13:30	DOWNWIND	MULTI	20.9	O_2 - while excavating
	OF E2	MULTI	0	LEL from DW-9 to DW-10
		MULTI	0	H_2S along pond.
		OVM	0	
	DW PER E2	PART	0.03	15 min TWA
14:30	DOWNWIND	MULTI	20.9	O_2
	OF E2	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.03	15 min TWA
15:30	DOWNWIND	MULTI	20.8	O_2
	OF E2	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER E2	PART	0.02	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 2/4/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 20°S Wind D. NE V 5-20

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVH, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24 ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.03	Particulate CALIBRATION ✓ - background air
9:00	DOWNWIND	MULTI	20.9	O_2 - While Trenching
	OF EZ	MULTI	0	LEL from DW-9 to DW-10
		MULTI	0	H_2S along path
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.03	15 min TWA
11:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIH MONITORING DATA SHEET

Date 2/4/94 Sheet 2 of 2

Job Name TDS CQA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg: OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
13:00	DOWN WIND	MULTI	20.9	O_2 – While trending
	OF EZ	MULTI	0	LEL From DW-9 to DW-10
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.04	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.03	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/7/94 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10°S Wind D. NE V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.04 mg/m³	Particulate CALIBRATION ✓ - background air
5:45	DOWNWIND	MULTI	20.9	O_2 While excavating
	OF EZ	MULTI	0	LEL from DW-10 to
		MULTI	0	H_2S DW-9
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
9:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
10:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.09	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/7/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:30	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ OK 20.9 % O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ % LEL (% (CH_4)
		MULTI	0	H_2S CALIBRATION ✓ ppm H_2S
		OVM	0	Organics CALIBRATION ✓ ppm Isobutyle
	DW PER EZ	PART	0.08	Particulate CALIBRATION ✓ background air
13:00	DOWNWIND	MULTI	20.9	O_2 - While Trenching From
	OF EZ	MULTI	0	LEL DW-10 to DW-9
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/8/94 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 10° Wind D. W V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:00	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.04	Particulate CALIBRATION ✓ - background air
8:30	DOWNWIND	MULTI	20.9	O_2 - While trenching
	OF EZ	MULTI	0	LEL from DW 10' to DW-9
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.06	15 min TWA
9:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.04	15 min TWA
10:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.05	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/5/14 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:30	DOWNWIND	MULTI	20.4	O_2 CALIBRATION ✓ ON / 20.9% O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ – / %LEL (/ %CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – / ppm / H_2S
		OVM	0	Organics CALIBRATION ✓ – / ppm / Isobutylene
	DW PER EZ	PART	0.01	Particulate CALIBRATION ✓ – / background / air
13:00	DOWNWIND	MULTI	20.9	O_2 — While trenching
	OF EZ	MULTI	0	LEL — from DW-9 to
		MULTI	0	H_2S — DW-10
	DW PER EZ	OVM	0	
		PART	0.07	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/9/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 10's Wind D. W V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.08	Particulate CALIBRATION ✓ - background air
10:30	DOWNWIND	MULTI	20.9	O_2 - 3ft while trenching
	OF EZ	MULTI	0	LEL elbow near PZ-1
		MULTI	0	H_2S (SE of DW-9)
		OVM	0	
	DUPER EZ	PART	0.08	15 min TWA
11:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DUPER EZ	PART	0.07	15 min TWA
13:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DUPER EZ	PART	0.08	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/9/94 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
14:00	DOWNWIND	MULTI	20.9	O_2 - Excavating trench
	OF EZ	MULTI	0	LEL just N of DW-10
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Jehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/16/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10°C Wind D. W V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:00	TRAILER	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.03 mg/m³	Particulate CALIBRATION ✓ - background air
9:00	DOWNWIND	MULTI	20.9	O_2 - While bar - ramming
	OF EZ	MULTI	0	LEL gate 6 drive
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.10	15 min TWA
10:00	DOWNWIND	MULTI	20.9	O_2 While excavating
	OF EZ	MULTI	0	LEL from gate 6 drive
		MULTI	0	H_2S to DW-10
		OVM	0	
	DW PER EZ	PART	0.12	15 min TWA
11:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/10/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
13:00	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON 20.9% O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	0	Organics CALIBRATION ✓ – ppm Isobutylene
	DW PER EZ	PART	0.08	Particulate CALIBRATION ✓ – background air
14:00	DOWNWIND	MULTI	20.9	O_2 – While excavating
	OF EZ	MULTI	0	LEL from gate 6 drive
		MULTI	0	H_2S to DW-10
		OVM	0	
	DW PER EZ	PART	0.09	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.11	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Weha
Printed Name

David Weha
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/11/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Partly Cloudy Temp. 10°C Wind D. WSW V 2-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:15	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	23 ppm	H_2S CALIBRATION ✓ - 24.6 ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.03 mg/m^3	Particulate CALIBRATION ✓ - background air
8:30	DOWNWIND	MULTI	20.9	O_2 - while trenching
	OF EZ	MULTI	0	LEL from gate 6
		MULTI	0	H_2S drive to DW-10
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA
9:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.09	15 min TWA
10:30	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA

Recommendations

David Wilson
Printed Name

David Wilson
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/11/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:30	DOWNWIND	MULTI	20.9	O_2 CALIBRATION ✓ ON / 20.9 % O_2
	OF EZ	MULTI	0	LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI	0	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	0	Organics CALIBRATION ✓ – ppm Isobutylene
	DW PER EZ	PART	0.08	Particulate CALIBRATION ✓ – background / air
13:00	DOWNWIND	MULTI	20.9	O_2 — while executing
	OF EZ	MULTI	0	LEL — from gate 6 drive
		MULTI	0	H_2S — to DW-10
		OVM	0	
	DW PER EZ	PART	0.13	15 min TWA
14:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.11	15 min TWA
15:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER EZ	PART	0.09	15 min TWA

Recommendations

David Welin
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 2/14/94 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 10's Wind D. NE V 2-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Trailer	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	24 ppm	H_2S CALIBRATION ✓ - 24.1 ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
		PART	0.14 mg/m³	Particulate CALIBRATION ✓ - background air
10:00	DOWNWIND	MULTI	20.9	O_2 - while trenching
	OF EZ	MULTI	0	LEL just S. of DW-10
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.15	15 min TWA
11:00	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0	
	DW PER. EZ	PART	0.12	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wilson
Printed Name

D. C. Wilson
Signature

Golder Associat[illegible] Inc.

A[illegible]MONITORING DATA SHEET

Date 2-16-94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933 - 9068

Location WHEATFIELD

Time In 10:15 Time Out _____ Weather P. Sunny 35-40°F Temp. 35-40 Wind D. W V 10-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI	20.7%	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	50%	LEL CALIBRATION ✓ - 50 % LEL (2.5% CH_4)
		MULTI	—	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	95 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutylene
		PART	0.10	Particulate CALIBRATION ✓ - background air
10:20		MULTI	20.4	O_2
		MULTI	2%	LEL
		MULTI	1	H_2S
		OVM	0.00	
↓		PART	0.22	/ Background 0.12
10:50		MULTI	20.4	O_2
		MULTI	0%	LEL
		MULTI	0	H_2S
		OVM	0.03	
↓		PART	0.20	/ Background 0.14
12:30		MULTI	20.5	O_2
		MULTI	0.10	LEL
		MULTI	-1	H_2S
		OVM	0.00	
↓		PART	.31	/ Background 0.19

Recommendations

Ken Nussbaum
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 2-16-94 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUNNY Temp. 40F Wind D. W V 10-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading - Span/Gain/RF Setting -
and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI	-	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	-	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	-	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	-	Organics CALIBRATION ✓ - ppm Isobutylene
		PART	-	Particulate CALIBRATION ✓ - background air
1430		MULTI	20.7	O_2
		MULTI	1%	LEL
		MULTI	-1	H_2S
		OVM	0.00	
		PART	0.34	/ Background 0.856
1515		MULTI	20.7	O_2
		MULTI	-1	LEL
		MULTI	-1	H_2S
		OVM	0.60	
		PART	0.23	/ Background 0.09
15:55		MULTI	20.6%	O_2
		MULTI	0	LEL
		MULTI	0	H_2S
		OVM	0.00	
		PART	0.27	/ Background 0.19

Recommendations

Ken Virgange
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/10/94 Sheet 1 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 20's Wind D. SSE V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ - 30 % LEL (% CH_4)
		MULTI	N/A	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	95 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutyle
		PART	0.142 mg/m³	Particulate CALIBRATION ✓ - background air
8:30	TOC	MULTI	20.9	O_2 - while running
		MULTI	0	LEL DW-9 again
		MULTI		H_2S
		OVM	0.1	
	~~DW OF EZ~~	PART	~~0.14~~	
8:32	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0	
	DW PER EZ	PART	0.44	15 min TWA
9:30	TOC	MULTI	20.8	O_2
		MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0.6	
		PART	—	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/10/94 Sheet 2 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.4~~ % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
9:37	DW OF EZ	MULTI	20.8	O_2 – While reaming
		MULTI	0	LEL DW-9 again
		MULTI	—	H_2S
		OVM	0	
	DW PER EZ	PART	0.50	15 min TWA
10:30	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0.5	
		PART	—	
10:32	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0	
	DW PER EZ	PART	0.48	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/10/94 Sheet 3 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

• If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.•	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		~~LEL CALIBRATION ✓~~ – % LEL (% CH_4)
		MULTI		~~H_2S CALIBRATION ✓~~ – ppm H_2S
		OVM		~~Organics CALIBRATION ✓~~ – ppm Isobutyle
		PART		~~Particulate CALIBRATION ✓~~ – background air
16:00	TOC	MULTI	20.9	O_2 — While receiving
		MULTI	0	LEL DW-9
		MULTI	—	H_2S
		OVM	0	
		PART	—	
16:02	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0	
	DW PER EZ	PART	0.49	15 min TWA ✓
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/15/94 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather RAIN Temp. 30° Wind D. NE V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:30	Office	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ – 30% LEL (1.5% CH_4)
		MULTI	–	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ – 101 ppm Isobutylene
		PART	0.05 mg/m³	Particulate CALIBRATION ✓ – background air
14:30	TOC	MULTI	20.9	O_2 – While spinning
		MULTI	0	LEL casing at DW-9
		MULTI	–	H_2S
		OVM	0	
		PART	–	
	DW OF EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
	DW PER. EZ	PART		15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

DW PER. EZ = Downwind perimeter of exclusion zone (or BAT property boundary)

David Wehn
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/16/94 Sheet 1 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SNOW Temp. 20's Wind D. SE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:20	OFFICE	MULTI	20.9%	O_2 CALIBRATION ✓ ON 20.9% O_2
		MULTI	30%	LEL CALIBRATION ✓ - 30% LEL (% CH_4)
		MULTI	—	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 101 ppm Isobutylene
8:30	On site	PART	0.09 mg/m³	Particulate CALIBRATION ✓ - background air
11:00	TOC	MULTI	20.9	O_2 While reaming
		MULTI	0	LEL DW-9
		MULTI	—	H_2S
		OVM	0	
		PART	—	
11:02	Downwind	MULTI	20.9	O_2
	of EZ	MULTI	0	LEL
		MULTI	—	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
13:00	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0	
		PART	—	

Recommendations

David Welch
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/16/94 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-29 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~20.4~~ % O_2
		MULTI		~~LEL CALIBRATION~~ ✓ – % LEL (% CH_4)
		MULTI		H_2S ~~CALIBRATION~~ ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
13:02	Downwind of EZ	MULTI	20.9	O_2 while reaming of DW-9
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.07	15 min TWA
14:00	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
14:02	Downwind of EZ	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.14	15 min TWA

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 3/16/94 Sheet 3 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
15:00	TOC	MULTI	20.9	O_2 - while roaming
		MULTI	0	LEL DW-9
		MULTI	-	H_2S
		OVM	0	
		PART	-	
15:02	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0	
		PART	0.09	15 min TWA
16:01	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0.1	
		PART	-	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/16/94 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
16:00	DOWNWIND	MULTI	20.9	O_2 while reaming
	OF EZ	MULTI	0	LEL DW-9
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/17/94 Sheet 1 of 4

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather SUN Temp. 20° Wind D. SSE V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-211 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	OFFICE	MULTI	20.9 %	O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI	30 %	LEL CALIBRATION ✓ – 30 % LEL (% CH_4)
		MULTI	–	H_2S CALIBRATION ✓ – ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ – 101 ppm Isobutylene
8:30	On site	PART	0.07 mg/m³	Particulate CALIBRATION ✓ – background air
9:00	TOC	MULTI	20.9	O_2 – While reaming DW-9
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.04	15 min TWA
10:00	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	

Recommendations

David Wohn
Printed Name

Dave Wohn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/17/94 Sheet 2 of 4

Job Name TDS CQA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		~~H_2S CALIBRATION ✓~~ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
10:01	DOWNWIND	MULTI	20.9	O_2 – While reaming
	OF EZ	MULTI	0	LEL DW-9
		MULTI	–	H_2S
		OVM	0	
	DW PER. EZ	PART	0.02	15 min TWA
11:00	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
11:02	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA ↓

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/11/94 Sheet 3 of 4

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-247 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - ~~% LEL (% CH_4)~~
		MULTI		~~H_2S CALIBRATION ✓ - ppm H_2S~~
		OVM		Organics CALIBRATION ✓ ppm Isobutylene
		PART		Particulate CALIBRATION ✓ - background air
12:00	TOC	MULTI	20.9	O_2 while reaming
		MULTI	0	LEL DW-9
		MULTI	-	H_2S
		OVM	0	
		PART	-	
12:01	DOWNWIND	MULTI	20.9	O_2
	OF EZ	MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
13:00	TOC	MULTI	20.9	O_2
		MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0	
		PART	-	

Recommendations

David Wehry
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 3/17/94 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-247 / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutylene
		PART		Particulate CALIBRATION ✓ – background air
13:01	DOWNWIND	MULTI	20.9	O_2 White reading
	OF EZ	MULTI	0	LEL DW-9
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.02	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

Air MONITORING DATA SHEET

Date 4/21/94 Sheet 1 of 1

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather Sun Temp. 40° Wind D. NW V 10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration * If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
10:00		MULTI	—	O_2 - While excavating
		MULTI	—	LEL near DW-7
		MULTI	—	H_2S
	DW OF E2	OVM	0	
		PART	—	
10:30		MULTI	—	O_2 While excavating
		MULTI	—	LEL near DW-7
		MULTI	—	H_2S
	DW OF E2	OVM	0	
		PART	—	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn for John Rizzo

Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 4/29/94 Sheet 1 of 1

Job Name TOS/ONSITE/NY Job Number 933-9068

Location BAT Southeast Lot.

Time In 0745 Time Out _____ Weather OVERCAST/LT. RAIN Temp. 60° Wind D. ____ V ____

Instrument Type OVM / Particulate Serial No. 25205

Calibration Gas 100 ppm Isobutylene Instrument Reading 106 Span/Gain/RF Setting 1

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
0800	DW OF EZ	OVM	0.0 ppm	filling trench
		OVM	0.0 ppm	EXCAVATING
0830		OVM	0.0 ppm	Along trench
0900		OVM	0.0 ppm	"
0930		OVM	0.0 ppm	"
1000		OVM	0.0 ppm	"
1030		OVM	0.0 ppm	"
1100		OVM	0.0 ppm	"
1130		OVM	0.0 ppm	"
1230		OVM	0.0 ppm	"
1300		OVM	0.0 ppm	"
1400		OVM	0.0 ppm	"
1440	↓	OVM	0.0 ppm	"
		~~particulate~~	~~23 2.62~~	

Recommendations

BRIAN E. CROSBY
Printed Name

Brian E. Crosby
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/2/94 Sheet 1 of 1

Job Name TDS COA ONSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather P CLOUDY Temp. 50° Wind D. ENE V 5-15 mph

Instrument Type MINIRAM DUST MONITOR Serial No. 4704

Calibration Gas N/A Instrument Reading N/A Span/Gain/RF Setting N/A

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
9:30	DW PER. EZ	DUST	0.05 mg/m³	While placing ¾" stone from EW-7 to 8
9:40	DW PER. EZ	DUST	0.0	while excavating soil near DW-12
11:00	"	"	0.0	While excavating soil from DW-9
11:30	"	"	0.0	While excavating soil from DW-9
12:00	"	"	0.04	While placing #1A stone near DW-12
12:20	"	"	0.17*	While placing 2-inch stone from EW-7 to 8
14:00	"	"	0.0	While excavating soil near pond (ARC area)
14:45	"	"	0.03	While rolling 2-inch stone DW-7 - DW-8
15:10	"	"	0.0	While excavating soil near pond.

Recommendations

DW PER EZ = Downwind perimeter of exclusion zone. (Closest downwind area where public or BAT / ARC employees might be expected.) Readings are 15 min time weighted ave.

* Exceeds action level of 0.15

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5-3-94 Sheet 1 of 5

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In 8:10 Time Out _____ Weather Sunny Temp. 50F Wind D. SW V 5-10 MPH

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON 20.9 % O_2
		MULTI		LEL CALIBRATION ✓ - 50 % LEL (2.5 % CH_4)
		MULTI		H_2S CALIBRATION ✓ - 25 ppm H_2S
		OVM		Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
8:20	WALMORE @ EW-8	MULTI	21.1%	O_2 Exclusion
		MULTI	0.0 PPM	LEL
		MULTI	-1.0 PPM	H_2S
		OVM	0.0 PPM	TVO
8:36		PART	0.02 mg/m³	15 MIN TWA Perimeter
8:40	W of EW-9	MULTI	21.0%	O_2 Exclusion
		MULTI	1%	LEL
		MULTI	0.0 PPM	H_2S
		OVM	0.00 PPM	TVO
8:55		PART	0.01 mg/m³	15 MIN TWA Perimeter
9:15	WALMORE @ EW-8	MULTI	21.4%	O_2 Exclusion
		MULTI	0.0%	LEL
		MULTI	-1 PPM	H_2S
		OVM	0.00 PPM	TVO
9:35		PART	0.01 mg/m³	15 MIN TWA Perimeter

Recommendations

K. NASSAUGH
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5-3-94 Sheet 2 of 5

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In 8:40AM Time Out _____ Weather SUNNY 55°F Temp. _____ Wind D. 05MPH W

Instrument Type MULTI GAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
9:43	W of DW-9	MULTI	21.3%	O_2 exclusion
		MULTI	0.0%	LEL
		MULTI	~1 ppm	H_2S
		OVM	0.00 ppm	TVO
		PART	0.01 mg/m³	15 min TWA perimeter
10:04	50' N of DW-8 11 o'clock			
	more RR	MULTI	21.2%	O_2 exclusion
		MULTI	1% LEL	LEL
		MULTI	~1 ppm	H_2S
		OVM	0.00 ppm	TVO
10:20		PART	0.00 mg/m³	15 min TWA perimeter
10:25	SW of DW-9	MULTI	21.3%	O_2 exclusion
		MULTI	0% LEL	LEL
		MULTI	0 ppm	H_2S
		OVM	0.00	TVO
10:39		PART	0.01 mg/m³	15 min TWA perimeter

Recommendations

K. NOSSAVAGE
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 5-3-94 Sheet 3 of 5

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In 8:10 Time Out _____ Weather 60°F, SUNNY Temp. _____ Wind D. E V 5-10 mph

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl
		PART		Particulate CALIBRATION ✓ – background a
11:05	200's OFF T. BLD	MULTI	21.3%	O_2 EXCLUSION
↓	↓	MULTI	1% LEL	LEL ↓
		MULTI	0 ppm	H_2S
		OVM	0.00 ppm	TVO
11:00	↓	PART	0.00 mg/m³	15 MIN TWA perimeter
11:20	100' SE OF DW9	MULTI	21.4%	O_2 exclusion
↓	↓	MULTI	0% LEL	LEL ↓
		MULTI	0 ppm	H_2S
		OVM	0.00 ppm	TVO
11:25	↓	PART	0.03 mg/m³	15 MIN TWA perimeter
11:40	WALMORE D EW76	MULTI		O_2 exclusion
↓	↓	MULTI		LEL ↓
		MULTI		H_2S
		OVM		TVO
11:45	↓	PART		15 MIN TWA perimeter

Recommendations

K. NOSSAMAN
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 5-3-94 Sheet 4 of 5

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
13:05	50'N of DW-10	MULTI	21.3%	O_2 — exclusion
		MULTI	-1%	LEL
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO
13:18		PART	0.01 mg/m³	15 min TWA perimeter
14:40	Between EW-7 & 8	MULTI	21.6%	O_2 exclusion
		MULTI	~~0.00~~ 0%	LEL
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO
14:45		PART	0.01 mg/m³	15 min TWA perimeter
14:50	Walkover By DW-10	MULTI	%	O_2 exclusion
		MULTI	%	LEL
		MULTI	ppm	H_2S
		OVM	ppm	TVO
		PART	0.03 mg/m³	15 min TWA perimeter

Recommendations

K. Nossaman
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 5-3-94 Sheet 5 of 5

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
15:20	Between EW-7 & EW-4	MULTI	21.7%	O_2 — explosive
		MULTI	~~0% 21.7% LEL~~	LEL
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO
15:24		PART	0.06 mg/m³	15 min TWA — perimeter
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

K. Nossaugh
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5-4-94 Sheet 1 of 4

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In 8:25 Time Out ____ Weather SUNNY Temp. 60°F Wind D. S V 5-10 mph

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas ____ Instrument Reading ____ Span/Gain/RF Setting ____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI	—	O_2 CALIBRATION ✓ ON % O_2
		MULTI	—	LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI	—	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	98 ppm	Organics CALIBRATION ✓ - ppm Isobutyl
		PART	—	Particulate CALIBRATION ✓ - background a
8:30	EXCLUSION	MULTI	21.2%	O_2 - Between EW-8 & T. Bldg.
	↓	MULTI	0%	LEL ↓
	↓	MULTI	0 ppm	H_2S ↓
↓	↓	OVM	0.00 ppm	TVO ↓
8:47	perimeter	PART	0.05 mg/m³	(15 min TWA) Walkway Rd 150' of T. Bld
8:50	EXCLUSION	MULTI	21.3%	O_2 DW9 - DW-10 Area
8:50	EXCLUSION	MULTI	0%	LEL
	↓	MULTI	0 ppm	H_2S
↓	↓	OVM	0.00	TVO ↓
9:06	perimeter	PART	0.07 mg/m³	(15 min TWA) North of DW-9
9:10	EXCLUSION	MULTI	21.3%	O_2 Between EW-8 & T. Building
	↓	MULTI	0%	LEL ↓
	↓	MULTI	0 ppm	H_2S ↓
↓	↓	OVM	0.00	TVO ↓
9:22	perimeter	PART	0.08	(15 min TWA) Just N of T BLDG

Recommendations

K. NOSSAVAJ
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 5-1-94 Sheet 2 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
9:45	Exclusion	MULTI	21.5%	O_2 Between DW-9 & DW-10
		MULTI	-2%	LEL
		MULTI	0 ppm	H_2S
		OVM	0.00 ppm	TVO
9:59	Perimeter	PART	0.10 mg/m³	15 MIN TWA - N OF DW-9
10:05	Exclusion	MULTI	21.6% %	O_2 Between EW-8 & T.BLDG
		MULTI	0% %	LEL
		MULTI	0 ppm	H_2S
		OVM	0.00 ppm	TVO
10:16	Perimeter	PART	0.01 mg/m³	15 MIN TWA
10:28	Exclusion	MULTI	21.5 %	O_2 Between DW-9 & DW-10
		MULTI	-1 %	LEL
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO
10:45	Perimeter	PART	0.03 mg/m³	15 MIN TWA - NORTH OF DW-9

Recommendations

K. Nosstvedt
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5-4-91 Sheet 3 of 4

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
11:05	exclusion	MULTI	21.4%	O_2 Between DW-9 & DW-10
		MULTI	0%	LEL
		MULTI	1 ppm	H_2S
		OVM	0.00 ppm	TVO
	perimeter	PART	0.03 mg/m³	(5 min TWA) N OF DW-9
11:45	exclusion zone	MULTI	21.5%	O_2 Corner of Walkway & NE Berm
		MULTI	0%	LEL
		MULTI	0 ppm	H_2S
		OVM	0.00 ppm	TVO
11:57	perimeter	PART	0.03 mg/m³	15 min TWA
13:10	Exclusion	MULTI	21.4%	O_2 Between DW-9 + 10
		MULTI	0%	LEL
		MULTI	0 ppm	H_2S
		OVM	0.00	TVO
13:23	perimeter	PART	0.03	15 min TWA Walkway By DW-10

Recommendations

K. Nossaman
Printed Name

Signature

Golder Associates Inc.

MONITORING DATA SHEET

Date 5-4-93 Sheet 4 of 4

Job Name TDS CQA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ____ % O_2
		MULTI		LEL CALIBRATION ✓ - ____ % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ____ ppm H_2S
		OVM		Organics CALIBRATION ✓ - ____ ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
13:50	EXCLUSION	MULTI	21.4 %	O_2 WALmove ADJust to TBldg
	↓	MULTI	0 %	LEL to EW-8
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO ↓
13:55	PERIMETER	PART	0.10	(15 min TWA) WALmove ADJust to TBldg
14:05	EXCLUSION	MULTI	21.5 %	O_2 WALmove ADJust to DW-10
	↓	MULTI	-1 %	LEL
		MULTI	0	H_2S
		OVM	0.00	TVO ↓
14:20	PERIMETER	PART	0.06	(15 min TWA) WALmove ADJust to DW-10
15:15	EXCLUSION	MULTI	21.4 %	O_2 WALmove SUMMIT OF DW-10
	↓	MULTI	-1 %	LEL
		MULTI	-1 ppm	H_2S
		OVM	0.00 ppm	TVO ↓
15:20	PERIMETER	PART	0.04 mg/m³	(15 min TWA)

Recommendations

K. NOSSAUAge
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/5/94 Sheet 1 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather OVERCAST Temp. 50°S Wind D. E V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	18.6 %	O_2 CALIBRATION ✓ ON 18.5 % O_2
		MULTI	27 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	–	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	99.4 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART	0.0 mg/m^3	Particulate CALIBRATION ✓ - background air
8:30	DW EZ	MULTI	20.9	O_2 - while excavating soil
	↓	MULTI	0	LEL near DW-9 10
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
9:00	DW OF EZ	MULTI	20.9	O_2 while placing stone
		MULTI	0	LEL near DW-9
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.01	15 min TWA
9:45	DW OF EZ	MULTI	20.9	O_2 while placing stone
	↓	MULTI	0	LEL near DW-9 / pond
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.08	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/5/94 Sheet 2 of 3

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-216 / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ cyl % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
10:10	DW OF EZ	MULTI	20.9	O_2 - While excavating
	↓	MULTI	0	LEL soil from DW-11
	↓	MULTI	-	H_2S to "T"
	↓	OVM	0	
	DW PER EZ	PART	0.03	15 min TWA
10:50	DW OF EZ	MULTI	20.9	O_2 While placing
	↓	MULTI	0	LEL stone near pond
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
11:35	DW OF EZ	MULTI	20.9	O_2 While placing
	↓	MULTI	0	LEL stone near pond
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.07	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/5/94 Sheet 3 of 3

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2M / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
12:45	DW OF EZ	MULTI	20.8	O_2 - While placing stone
	↓	MULTI	0	LEL near DW-11 (also
	↓	MULTI	-	H_2S excavating near "I")
	↓	OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
13:30	DW OF EZ	MULTI	20.8	O_2 While placing stone
	↓	MULTI	0	LEL near DW-10
	↓	MULTI	-	H_2S -
	↓	OVM	0	
	DW PER EZ	PART	0.05	15 min TWA
14:05	DW OF EZ	MULTI	20.8	O_2 while excavating
	↓	MULTI	0	LEL from "I" to DW-12
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.07	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/6/94 Sheet 1 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50's Wind D. E V 5-15

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2R / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	18.6%	O_2 CALIBRATION ✓ ON 18.5 % O_2
		MULTI	27%	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	–	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	99 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART	0 mg/m³	Particulate CALIBRATION ✓ - background all
9:00	DW OF EZ	MULTI	20.9	O_2 - While excavating
	↓	MULTI	0	LEL near DW-12
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.03	15 min TWA
9:30	DW OF EZ	MULTI	20.9	O_2 While placing
	↓	MULTI	0	LEL stax near DW-10
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.03	15 min TWA
10:00	DW OF EZ	MULTI	20.9	O_2 While excavating
	↓	MULTI	0	LEL ~~stax~~ near DW-12
		MULTI	–	H_2S
		OVM	0	
	DW PER EZ	PART	0.06	15 min TWA

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/6/94 Sheet 2 of 4

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas and Concentration _____ Instrument Reading _____ Span/Gain/RF Setting _____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl.
		PART		Particulate CALIBRATION ✓ - background all
10:30	DW OF E2	MULTI	20.9	O_2 - While placing stone
	↓	MULTI	0	LEL from DW-9 to DW-10
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER E2	PART	0.06	15 min TWA
11:00	DW OF E2	MULTI	20.9	O_2 While placing stone
	↓	MULTI	0	LEL from DW-9 to DW-10
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER E2	PART	0.04	15 min TWA
11:45	DW OF E2	MULTI	20.9	O_2 While excavation
	↓	MULTI	0	LEL near DW-12
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER E2	PART	0.06	15 min TWA

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/6/94 Sheet 3 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In ____ Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-291 / 5868

Calibration Gas and Concentration ____ Instrument Reading ____ Span/Gain/RF Setting ____

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ CAL % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
13:00	DW OF EZ	MULTI	20.9	O_2 - While placing stone
	↓	MULTI	0	LFL near DW-12
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.06	
13:30	DW OF EZ	MULTI	20.9	O_2 While placing stone
	↓	MULTI	0	LEL near DW-10
	↓	MULTI	--	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.04	
14:30	DW OF EZ	MULTI	20.8	O_2 While placing stone
	↓	MULTI	0	LEL near DW-12
	↓	MULTI	-	H_2S
	↓	OVM	0	
	DW PER EZ	PART	0.15	

Recommendations

David Weha
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/6/94 Sheet 4 of 4

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
15:15	DW OF E2	MULTI	20.9	O_2 - While placing
		MULTI	0	LEL stone near DW-12
		MULTI	-	H_2S
	↓	OVM	0	
	DW PER E2	PART	0.05	15 min TWA
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

GOLDER ASSOCIATES INC.

Air Monitoring During Drilling

Sheet 1 of 1

PROJECT NAME	TDS COA ON-SITE	BORING NUMBER	94-01(1)
PROJECT NUMBER	933-9068	AMBIENT TEMPERATURE	65°F
INSTRUMENT USED AND ID NO.	TE 580B OVM / MSA 361	WIND SPEED	10-30 mph
CALIBRATION NUMBER	N/A	WIND DIRECTION	NNE

DATE	TIME	DEPTH OF AUGER FT	INSTRUMENT READING
5/11/94	14:45	0-2	0 ppm / 0 % LEL
	14:55	2-4	0 ppm / 0 % LEL
	15:15	4-6	0 ppm / 0 % LEL
	15:30	6-8	0 ppm / 0 % LEL
	15:40	8-10	0 ppm / 0 % LEL
	16:10	10-12	0 ppm / 0 % LEL

F/N: AIRMONIT.WK1

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/12/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out N/A Weather OVERCAST Temp. 50's Wind D. SSE V

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas N/A Instrument Reading N/A Span/Gain/RF Setting N/A

and Concentration • *If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.•	Reading	Procedure/Observations/Comments
7:30		MULTI	19.0%	O_2 CALIBRATION ✓ ON 18.5 % O_2
		MULTI	28 %	LEL CALIBRATION ✓ - 30% LEL (1.5% CH_4)
		MULTI	—	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	100 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART	—	Particulate CALIBRATION ✓ - background air
9:45	B2	MULTI	20.9	O_2 - While cleaning
	↓	MULTI	0	LEL 94-01(i) prior to
		MULTI	—	H_2S coring
		OVM	0	
		PART	—	
10:45	B2	MULTI	20.9	O_2 While cleaning
	↓	MULTI	0	LEL 94-01(i) prior to
		MULTI	—	H_2S coring
		OVM	0	
		PART	—	
13:00	B2	MULTI	20.9	O_2 While coring
	↓	MULTI	0	LEL 94-01(i)
		MULTI	—	H_2S
		OVM	0	
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/12/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In _____ Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ – % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ – ppm H_2S
		OVM		Organics CALIBRATION ✓ – ppm Isobutyl
		PART		Particulate CALIBRATION ✓ – background a
13:30	BZ	MULTI	20.9	O_2 – While coring
	↓	MULTI	0	LEL 94-01(1) J
		MULTI	–	H_2S
		OVM	0	
		PART	–	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/16/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In _____ Time Out _____ Weather OVERCAST Temp. 50°F Wind D. SE V 0-5

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-2A / 5868

Calibration Gas and Concentration – Instrument Reading – Span/Gain/RF Setting –

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
9:45	BZ	MULTI	20.9	O_2 - while augering
		MULTI	0	LEL new 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
11:30	BZ	MULTI	20.9	O_2 while reaming 94-01(1)
		MULTI	0	LEL with 5" bit to clear
		MULTI	-	H_2S hole prior to coring
		OVM	0	
		PART	-	
14:15	BZ	MULTI	20.9	O_2 while coring 94-01(1)
		MULTI	0	LEL
		MULTI	-	H_2S
		OVM	0	
		PART	-	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/16/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out N/A Weather N/A Temp. N/A Wind D. N/A V N/A

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC539 / 25205-2R / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background all
15:00	BZ	MULTI	20.9	O_2 - While coring 94-01(1)
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART		
16:00	BZ	MULTI	20.9	O_2 While coring 94-01(1)
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
17:00	BZ	MULTI	20.9	O_2 While coring 94-01(1)
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	

Recommendations

David Weber
Printed Name

Dave Weber
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/17/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out N/A Weather OVERCAST Temp. 50°F Wind D. SE V 0-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-241 / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
11:30	BZ	MULTI	20.9	O_2 while driving casing
		MULTI	0	LEL at 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	
12:45	BZ	MULTI	20.9	O_2 while casing
		MULTI	0	LEL 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	
14:30	BZ	MULTI	20.9	O_2 while driving
		MULTI	0	LEL 4" casing at 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/17/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In NA Time Out ____ Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2R / 5868

Calibration Gas ____ Instrument Reading ____ Span/Gain/RF Setting ____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		~~H_2S CALIBRATION ✓~~ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
16:00	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
17:00	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
17:45	BZ	MULTI	20.9	O_2 While coring
17:45	BZ	MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/18/94 Sheet 1 of 2

Job Name TDS CGA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out N/A Weather OVERCAST Temp. 50's Wind D. E V 0-5 mph

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFO529 / 25205-2A / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON % O_2
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background air
8:30	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LFL well 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	
10:30	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	
11:30	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	–	H_2S
		OVM	0	
		PART	–	

Recommendations

David Wehr
Printed Name

Dave Wehr
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/18/94 Sheet 2 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out _____ Weather _____ Temp. _____ Wind D. _____ V _____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas _____ Instrument Reading _____ Span/Gain/RF Setting _____

and Concentration

** If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ~~% O_2~~
		MULTI		LEL CALIBRATION ✓ - % LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ppm H_2S
		OVM		Organics CALIBRATION ✓ - ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background a
12:30	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
13:30	BZ	MULTI	20.8	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART		
14:30	BZ	MULTI	20.9	O_2 While coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	

Recommendations

David John
Printed Name

David John
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/20/94 Sheet 1 of 2

Job Name TDS CCA OFFSITE Job Number 933-9068

Location WHEATFIELD

Time In N/A Time Out N/A Weather SUN Temp. 20°C Wind D. NE V 5-10

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WFC529 / 25205-211 / 5868

Calibration Gas – Instrument Reading – Span/Gain/RF Setting –

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
7:30	Office	MULTI	19.0	O_2 CALIBRATION ✓ ON 18.5 % O_2
		MULTI	26 %	LEL CALIBRATION ✓ - 30 % LEL (1.5% CH_4)
		MULTI	–	H_2S CALIBRATION ✓ - ppm H_2S
		OVM	97 ppm	Organics CALIBRATION ✓ - 100 ppm Isobutyl
		PART	–	Particulate CALIBRATION ✓ - background all
8:10	BZ	MULTI	20.9	O_2 - While coring 94-01(1)
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
9:00	BZ	MULTI	20.9	O_2 " "
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	
10:00	BZ	MULTI	20.9	O_2 " "
		MULTI	0	LEL
		MULTI	–	H_2S
		OVM	0	
		PART	–	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 5/20/94 Sheet 2 of 2

Job Name TDS CGA OFFSITE Job Number 933-7068

Location WHEATFIELD

Time In N/A Time Out N/A Weather ____ Temp. ____ Wind D. ____ V ____

Instrument Type MULTIGAS / OVM / PARTICULATE Serial No. WF0529 / 25205-2A / 5868

Calibration Gas ____ Instrument Reading ____ Span/Gain/RF Setting ____

and Concentration

If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
		MULTI		O_2 CALIBRATION ✓ ON ____ % O_2
		MULTI		LEL CALIBRATION ✓ - ____ %LEL (% CH_4)
		MULTI		H_2S CALIBRATION ✓ - ____ ppm H_2S
		OVM		Organics CALIBRATION ✓ - ____ ppm Isobutyl
		PART		Particulate CALIBRATION ✓ - background all
11:00	BZ	MULTI	20.9	O_2 - while coring
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
14:30	BZ	MULTI	20.9	O_2 while grouting
		MULTI	0	LEL 94-01(1)
		MULTI	-	H_2S
		OVM	0	
		PART	-	
		MULTI		O_2
		MULTI		LEL
		MULTI		H_2S
		OVM		
		PART		

Recommendations

David Wehn
Printed Name

Dave Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 8/22/94 Sheet 1 of 1

Job Name _____ Job Number _____

Location Monitoring Well 89-08(1) - BAT Wheatfield, NY

Time In N/A Time Out N/A Weather Sunny - 70's Temp. N/A Wind D. W V 0-5

Instrument Type OVM 580 A Serial No. -25265 -219

Calibration Gas Isobutylene - 100ppm Instrument Reading 98 ppm Span/Gain/RF Setting _____

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
14:00	TOA	OVM	0.0	While augering "
14:30	TOA	OVM	0.0	"
15:00	TOA	OVM	0.0	While pulling casing
15:30	TOA	OVM	0.0	While roller - drilling hole
16:00	TOA	OVM	0.0	" "
16:30	TOA	OVM	0.0	" "
17:00	TOA	OVM	0.0	" "

Recommendations

TOA = Top of augers
TOC = Top of casing

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 8/23/94 Sheet 1 of 1

Job Name TDS CQA ON-SITE Job Number

Location Monitoring Well 89-08(1) BAT Westfield, NY

Time In N/A Time Out N/A Weather Sunny Temp. 75° Wind D. NE V 0-5

Instrument Type OVM 580 A Serial No. - 25265-219

Calibration Gas 100ppm Isobutylene Instrument Reading 98 ppm Span/Gain/RF Setting

and Concentration

*If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	TOA	OVM	0.0	While reaming
9:00	TOA	OVM	0.0	While reaming
9:30	TOA	OVM	0.0	While reaming
10:00	TOA	OVM	0.0	While reaming

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/5/94 Sheet 1 of 1

Job Name TDS C&A ON-SITE Job Number 933-9068

Location MW-94-02(1) - Wheatfield, NY

Time In N/A Time Out N/A Weather Cloudy Temp. 50°F Wind D. NE V 0-2

Instrument Type OVM / LEL Serial No. 184 / WF0529

Calibration Gas and Concentration 59.5 ppm Isa / 30% LEL Methane Instrument Reading 56.8 / 29% Span/Gain/RF Setting 100 / 100

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
12:30	Top of Augers	OVM	0	while augering 94-02(1)
		LEL	0	
13:00		OVM	0	
		LEL	0	
14:00		OVM	0	
		LEL	0	
14:30		OVM	0	
		LEL	0	
15:00		OVM	0	
		LEL	0	

Recommendations

David Wehn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/6/94 Sheet 1 of 1

Job Name TDS CGA ON-SITE Job Number 933-9068

Location MW 94-02(1) Wheatfield NY

Time In N/A Time Out N/A Weather P. Sunny Temp. 55°F Wind D. — V —

Instrument Type OVM / LEL Serial No. 184 / WF0529

Calibration Gas 59.5 Isc / 30% LEL Instrument Reading 56.8 / 29% Span/Gain/RF Setting 1 / 1

and Concentration * If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
11:00	Top of augers	OVM	0	While cleaning
		LEL	0	94-02(1) with
14:30		OVM	0	While spinning 4" casing
		LEL	0	into top of rock.
15:00		OVM	0	
		LEL	0	
16:00	Water/Air Outlet	OVM	0	While coring 94-02(1)
		LEL	0	
17:00		OVM	0	
		LEL	0	

Recommendations

David Wehr
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/7/94 Sheet 1 of 1

Job Name TDS COA ON-SITE Job Number 933-9068

Location MW 94-02(1) Wheatfield NY

Time In N/A Time Out N/A Weather Sun Temp. 65°F Wind D. NNE V 0-2

Instrument Type OVM / LEL Serial No. 184 / WF0529

Calibration Gas 59.5 Iso / 30% LEL Instrument Reading 56.8 / 29% Span/Gain/RF Setting 1.00/1.00

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Water / Air	OVM	0	while coring 94-02(1)
	Outlet	LEL	0	
9:00		OVM	0	
		LEL	0	
10:00		OVM	0	
		LEL	0	
10:30		OVM	0	
		LEL	0	
11:00		OVM	0.2	
		LEL	0	
11:30		OVM	0	
		LEL	0	
12:00		OVM	0	
		LEL	0	

Recommendations

David Wehn
Printed Name

David Wehn
Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/10/94 Sheet 1 of 1

Job Name TDS CCA ON-SITE Job Number 933-9068

Location MW 94-02(1), Wheatfield NY

Time In N/A Time Out N/A Weather Sun Temp. 45° Wind D. NE V 0-5

Instrument Type OVM / LEL Serial No. 184 / WF0529

Calibration Gas 59.5 Iso / 30% LEL Instrument Reading 56.8 / 29% Span/Gain/RF Setting 1.00 / 1.00

and Concentration • *If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.*

Time	Station	Instr.•	Reading	Procedure/Observations/Comments
13:15	water/air	OVM	0	while 4" reaming
	outlet	LEL	0	94-02(1)
13:45		OVM	0	
		LEL	0	
14:30		OVM	0	
		LEL	0	

Recommendations

David L. Cohn
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10-11-94 Sheet 1 of 1

Job Name TDS COA ONSITE Job Number 933-9068

Location MW-94-02(1), WILLINGBORO N.J.

Time In N/A Time Out N/A Weather SUNNY Temp. 45° Wind D. NE V 5-10

Instrument Type OVM / LEL Serial No. 184 / WF0529

Calibration Gas 59.5 ISO / 30% LEL Instrument Reading 56.8 / 29% Span/Gain/RF Setting 1.0 / 1.0

and Concentration

* If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
0815	OUTER CASING	OVM	0.0	WHILE PULLING UP RODS
↓		LEL	0.0	
0900	OUTER CASING	OVM	0.0	WHILE PULLING UP AUGERS
		LEL	0.0	
0930	WATER TUBE	OVM	0.0	WHILE PUMPING DRILL H2O
		LEL	0.0	

Recommendations

KEN NOSSAMAN
Printed Name

Signature

Golder Associates Inc.

AIR MONITORING DATA SHEET

Date 10/12/94 Sheet 1 of 1

Job Name TDS CCA ON-SITE Job Number 933-9068

Location 93-01(1), Wheatfield, NY

Time In N/A Time Out N/A Weather Sun Temp. 60's Wind D. - V 0

Instrument Type OVM / LEL Serial No. 184 / WFC529

Calibration Gas 59.5 Isc / 30% LEL Instrument Reading 56.8 / 29% Span/Gain/RF Setting 1.0 / 1.0

and Concentration * If more than one instrument is used, document calibration procedures and results for each additional instrument in recommendations section below and indicate the instrument used (eg. OVA, 361, OVM, etc.) for each observation.

Time	Station	Instr.*	Reading	Procedure/Observations/Comments
8:30	Top of augers	OVM	0	While 4¼ auger overdrilling 93-01(1)
		LEL	0	
9:30		OVM	0	
		LEL	0	
10:00		OVM	0	
		LEL	0	

Recommendations

David Dehn
Printed Name

Signature

APPENDIX M

DESIGN MODIFICATION/CLARIFICATION FORMS

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 1

LOCATION / REFERENCE OF CLARIFICATION: Fiberglass grating supports / Design and Specifications, Revision 1, page 19.

CLARIFICATION MADE: Side supports for grating (along long dimension of vault) are to be positioned such that the inner edge is a minimum of 6 inches from the vault wall. Two bolts welded to the support and a cover plate will be used to attach each grate to the support such that the 4-foot by 2-foot grate may be removed individually. Sufficient clearance for passage of conduit and other vault equipment between the support and wall must be maintained.

APPROVED BY DESIGNER: Anthony Grasso (NAME) | Golder Associates Inc. (COMPANY) | 12/15/93 (DATE)

OWNER NOTIFIED OF CLARIFICATION: [X] YES [ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 12/15/93 (DATE)

REMARKS: Contractor must submit proposed installation procedure for approval by Engineer.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 2

LOCATION / REFERENCE OF CLARIFICATION: Slope of double-wall pipe / Drawing B-4, Note 5.
Also see Design and Specifications, Revision 1, page 22.

CLARIFICATION MADE: Minimum acceptable slope over a 20-foot length of pipe reduced to approximately ½-inch (0.042 feet per 20 feet) from original specification of one inch (0.083) per 20 feet. Overall slope of pipe length from apex to low point must still conform to the original specifications of one inch per 20 feet.

APPROVED BY DESIGNER: Anthony Grasso (NAME) | Golder Associates Inc. (COMPANY) | 12/10/93 (DATE)

OWNER NOTIFIED OF CLARIFICATION:
[X] YES
[ ] NO

John Devic (NAME) | Textron Defense Systems (COMPANY) | 02/16/94 (DATE)

REMARKS: Clarification based on manufacturer's specifications. Request for clarification made from Contractor for pipe section between wells EW-7 and EW-8. Using the minimum slope specified herein eliminated need to place pump out port between wells.

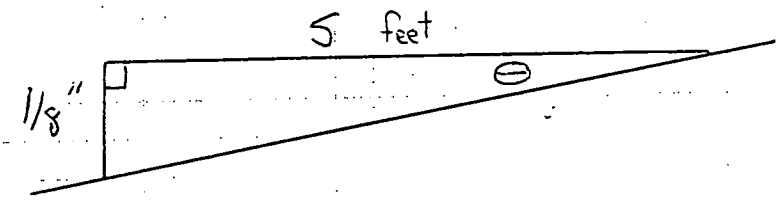
ATTACHMENTS:
Calculations of minimum slope.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

Golder Associates

SUBJECT	Pipe Slope	
Job No. 933-9068	Made by DCW	Date
Ref.	Checked	Sheet 1 of 1
	Reviewed	

The minimum acceptable pipe slope acceptable to Perma Pipe (pipe manufacturer) is that which produces a maximum backup of water behind a 1/8-inch high weld bead of five feet. This is converted to slope as follows:



$$\frac{1/8 \text{ inch}}{5 \text{ feet}} = \frac{X}{20 \text{ feet}}$$

$$X = \frac{1}{2} \text{ inch per 20 feet}$$

$\frac{1}{2}$ inch = approx. 0.042 feet

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 3

LOCATION / REFERENCE OF CLARIFICATION: Extraction wells EW-7, EW-8, DW-9, DW-10, DW-11, and DW-12.

CLARIFICATION MADE: Depth to install transducer in wells EW-7 and EW-8 and wells DW-9 through DW-12. See the attached table of values.

APPROVED BY DESIGNER: Anthony L. Grasso (NAME) Golder Associates Inc. (COMPANY) 02/22/94 (DATE)

OWNER NOTIFIED OF CLARIFICATION: [X] YES [ ] NO

John Devic (NAME) Textron Defense Systems (COMPANY) 02/22/94 (DATE)

REMARKS: Depth of transducer to be placed approximately one foot above top of submersible pump, in each well. Pump control settings will be submitted at a later date.

ATTACHMENTS:
Table 1.

DISTRIBUTION:
Brian Smith – Textron Defense Systems
John Devic – Bell Aerospace Textron
Russell Healey – Conserva-Tech Engineering
Al Marzelli – Laidlaw
Robert McNamara – Wendel
Jim Fleishman – Innovative Controls

TABLE 1
SPECIFICATION/DESIGN CLARIFICATION NUMBER 3
BELL AEROSPACE TEXTRON
ON-SITE GROUND WATER EXTRACTION SYSTEM
DEPTH OF TRANSDUCERS

WELL NO.	DEPTH OF TRANSDUCER (FT. BTOC)
EW-7	22.2
EW-8	21.7
DW-9	20.2
DW-10	23.7
DW-11	20.7
DW-12	21.0

NOTE:

FT. BTOC = Feet below top of overburden casing in vault. Overburden casing should extend approximately 2 inches above the base of the vault.

F/N: CLAR3TAB.WK1

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 4

LOCATION / REFERENCE OF CLARIFICATION: Extraction Wells EW-7 and EW-8 and DNAPL Wells DW-9 through DW-12 pumping level and alarm elevation values. These are to be input into the Powers 535 process controllers in each vault.

CLARIFICATION MADE: The water level / alarm elevation values, in feet mean sea level, should follow this schedule:

	EW-7	EW-8	DW-9	DW-10	DW-11	DW-12
High Alarm	561.5	560.5	567.0	566.0	567.0	564.0
Pump On	559.5	558.5	565.0	564.0	565.0	562.0
Pump Off	557.5	556.5	561.0	560.0	561.0	558.0
Low Alarm	556.5	555.5	560.0	559.0	560.0	557.0

APPROVED BY DESIGNER: Anthony Grasso (NAME) | Golder Associates Inc. (COMPANY) | 03/04/94 (DATE)

OWNER NOTIFIED OF CLARIFICATION: [X] YES [ ] NO

John Devic (NAME) | Textron Defense Systems (COMPANY) | 03/17/94 (DATE)

REMARKS: The initial settings may be revised, based on performance of the On-Site System.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel
Jim Fleishman - Innovative Controls

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 5

LOCATION / REFERENCE OF CLARIFICATION: New York State Department of Transportation (NYSDOT) #A stone used as backfill material for the piping system.

CLARIFICATION MADE: Intent of the design specification for backfill material was to provide a stone with proper gradation to support piping and to allow for a maximum wheel load of H20.

APPROVED BY DESIGNER:	Anthony L. Grasso	Golder Associates Inc.	12/93 through 5/94
	NAME	COMPANY	DATE

OWNER NOTIFIED OF CLARIFICATION:

[X] YES

[ ] NO

	John Devic	Bell Aerospace Textron	5/95
	NAME	COMPANY	DATE

REMARKS:

Construction Quality Assurance/Quality Control (CQA/QC) testing of the backfill material indicates that some of the #1A stone samples tested did not meet the gradation specification of

Sieve Size	Percent Passing by Weight
1/2"	100
1/4"	100 - 90
1/8"	0 - 15
No. 200	0 - 1.0

This specification was obtained from NYSDOT for #1A stone.

Results of the testing indicated that the #1A stone tested was generally finer than specified. The critical criterion of this specification is that all material is to be smaller than 1/2" and to have no greater than 12-percent fine material passing the 200 sieve. All samples tested met these two criteria. Considering the slight deviation from the design specification, the Designer concludes that the #1A stone is in substantial compliance with the design and could be used as backfill material for the trench.

ATTACHMENTS:
None.

DISTRIBUTION:
John Devic - Bell Aerospace Textron

SPECIFICATION / DESIGN CLARIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 6

LOCATION / REFERENCE OF CLARIFICATION: Compaction specification for New York State Department of Transportation (NYSDOT) #1 stone.

CLARIFICATION MADE: Reference to compaction should refer to maximum laboratory density as determined by ASTM D-4253, not the maximum relative density, as stated in specifications.

APPROVED BY DESIGNER: Anthony Grasso (NAME) | Golder Associates (COMPANY) | 12/93 - 2/94 (DATE)

OWNER NOTIFIED OF CLARIFICATION:
[X] YES
[ ] NO

John Devic (NAME) | Bell Aerospace Textron (COMPANY) | 6/95 (DATE)

REMARKS: The correct compaction requirement was followed during project.

ATTACHMENTS:
None.

DISTRIBUTION:
John Devic - Bell Aerospace Textron

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 1

LOCATION / REFERENCE OF MODIFICATION: EW-7 Location / Drawings B-2, B-3, and B-4.

MODIFICATION MADE: Well location moved approximately 148 feet east and 14 feet south of original specified location. Current location approximately N: 1129531 E: 407442. Original location was decommissioned.

APPROVED BY DESIGNER: Anthony Grasso (NAME) | Golder Associates Inc. (COMPANY) | 10/27/93 (DATE)

OWNER NOTIFIED OF MODIFICATION: [X] YES [ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 10/27/93 (DATE)

REMARKS: Original location for EW-7 proved to be poorly connected hydraulically to the Zone 1 dolomite aquifer.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 2

LOCATION / REFERENCE OF MODIFICATION: Pump out maintenance / inspection ports / Drawing B-8, Details 1 and 2.

MODIFICATION MADE: Bentonite next to high density polyethylene (HDPE) risers of pump out and maintenance / inspection ports changed to pea gravel. Top of 16-inch diameter protective casings of both types of ports lowered to be flush with ground surface.

APPROVED BY DESIGNER: Anthony Grasso (NAME) Golder Associates Inc. (COMPANY) 11/15/93 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

John Devic (NAME) Textron Defense Systems (COMPANY) 02/16/94 (DATE)

REMARKS: Ports were lowered to allow for efficient snowplowing of parking lot. Pea gravel added to promote better drainage of the flush ports.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 3

LOCATION / REFERENCE OF MODIFICATION: 6-inch diameter high density polyethylene (HDPE) containment pipe / Design and Specifications page 10 (Revision 1).

MODIFICATION MADE: Standard Dimensional Ratio (SDR) of containment pipe changed from SDR 17.6 to SDR 32.5. Test specifications for 6-inch pipe changed from 10 psi air to 5 psi air because of SDR change.

	NAME	COMPANY	DATE
APPROVED BY DESIGNER:	Anthony Grasso Russell Healey	Golder Associates Inc. Conserva-Tech Engineering	10/26/93

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

	NAME	COMPANY	DATE
	Brian Smith	Textron Defense Systems	10/26/93

REMARKS: SDR changed, at the request of manufacturer (PermAlert), to better suit welding requirements of pipe materials and sizes.

ATTACHMENTS:
Letter from pipe manufacturer detailing new final pressure test procedures.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

PermAlert™ ESP
A SUBSIDIARY OF MIDWESCO, INC.

1310 Quarles Drive
Lebanon, TN 37087
Phone (615) 444-4810
Fax (615) 449-3445

9 December, 1993

To: Al Marzelli
Tele 716-298-6670
Fax 716-298-6654

From: Tim Stanfill

RE: Bell Areospace (PermAlert # PQA-5660) Pipe Test Parameters.

Dear Mr. Marzelli,

As per our phone conversation 9 December, 1993, PermAlert recommends standard parameter pressure testing for completing final testing of the installed systems. The following tests are recommended for standard Polypro/Polyethylene systems:

1. Service Line:

   Hydrostatic test @ 1 1/2 times working pressure @ 2 hours minimum. Verify pressure reading on calibrated gage. Recommend test pressure location on gage face be center of gage (if test pressure is 75 psi, gage range should be 150 psi).

2. Containment Pipe:

   Static Air test @ 5 PSI @ 1 hour minimum (If static test cannot be accomplished due to pressure release at a gland type endseal, perform Dynamic Air Test). Verify pressure reading on calibrated gage. Recommend test pressure location on gage face be center of gage (if test pressure is 5 psi, gage range should be 10 psi).

Alternate testing to be performed in place of Containment Dynamic Air test;

   Pressurize containment pipe @ 5 PSI. Maintain a constant pressure on the containment pipe @ 5 PSI throughout test. Verify pressure reading on calibrated gage. Recommend test pressure location on gage face be center of gage (if test pressure is 5 psi, gage range should be 10 psi). soap test end seals of containment pipe. Soap test <u>all</u> pipe casing joints. Verify no air leakage is present at casing joints.

Note: While this is a standard recommended test for piping systems that PermAlert has engineered, actual testing requirements may deviate from what PermAlert ESP recommends. Contact PermAlert's Technical Services for any clarification of the testing requirements and any further recommendations.

Should you have questions that I may be of assistance, please do not hesitate to call me.

Respectfully,

Timothy G. Stanfill
PermAlert ESP
Technical Services Department

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 4

LOCATION / REFERENCE OF MODIFICATION: Drawing B-6, Detail 6.

MODIFICATION MADE: Eliminate leak detection cable in vaults as originally specified. Leak detection cable will terminate at the end seals in the vault. Within each vault, use a jumper cable to connect the leak detection cable at end seals. Install jumper cable so that float switch may be installed in vault in future which will serve as leak detection monitoring device in vault.

APPROVED BY DESIGNER: Russell Healey (NAME) | Conserva-Tech Engineering (COMPANY) | 10/11/93 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 10/12/93 (DATE)

REMARKS: This modification simplifies operation of system - less chance for false positive alarm in vault. Vaults will be used as a "witness box" to check for leaks in vault piping.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 5

LOCATION / REFERENCE OF MODIFICATION: Conduit sizes and inground pull boxes / Drawing E-1: Schedule of wire and conduit valves including the note. Trench Detail / Drawing B-6, Cross-Section D-D'.

MODIFICATION MADE: In ground pull boxes eliminated at changes in direction of conduit. 2½-inch conduit runs directly from DW-12 to DW-11, 2-inch conduit runs from DW-11 to DW-10. Cross-section of trench from DW-11 eastwards to "T" now has four conduits instead of two. Plans call for pull boxes at every change in direction and every 500 feet which indicates that a minimum of 9 pull boxes be installed for this project. A credit is expected for the pull boxes which were omitted.

APPROVED BY DESIGNER: Russell Healey (NAME) | Conserva-Tech Engineering (COMPANY) | 03/09/94 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

John Devic (NAME) | Textron Defense Systems (COMPANY) | 03/10/94 (DATE)

REMARKS: Design modification made by Contractor; pull boxes were eliminated to ease installation of the cable and to remove the potential of water entry damage to cable.

ATTACHMENTS:
None.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 6

LOCATION / REFERENCE OF MODIFICATION: Extraction/DNAPL well pump motors: Detail 1, Drawing B-5; Detail 1, Drawing E-1.

MODIFICATION MADE: Specified 1/3 horsepower, 208 volt, single-phase Grundfos motor should be replaced by a 1/2 horsepower, 230 volt, single-phase Grundfos pump motor. The installation must include a 0.25 Kva buck and boost transformer wired prior to the motor in each vault to supply proper voltage to the new motors. Fuses and thermal overloads should be changed to 6.0 amp ratings.

APPROVED BY DESIGNER: Russell Healey (NAME) | Conserva-Tech Engineering (COMPANY) | 03/08/94 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 03/28/94 (DATE)

REMARKS: None.

ATTACHMENTS:
A letter from the designer which provides a summary of the steps involved in the selection of the new motors and the technical approach for their installation.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

CONSERVA TECH
ENGINEERING SERVICES

1719 BLACK OAK ROAD
WILLIAMSTOWN, NJ 08094
PHONE (609) 728-3115
FAX (609) 728-3155

March 8, 1994

Golder Associates, Inc.
210 John Glenn Drive
Suite One
Amherst, NY 14228

Attention: Tony Grasso

RE: On-Site Construction Phase
Bell Aerospace Textron
Pump Application and Sizing

Dear Tony:

As per our discussion about utilizing the Grundfos 1/2 hp, 230v, 1Q groundwater extraction pump already installed instead of the 1/3 hp pump specified we offer the following recap and approach:

A. RECAP

1. Initially a 1/3 hp, 208v, 1Q groundwater pump motor was specified.

2. The contractor had difficulty obtaining a 1/3 hp, 1Q in 208v stating that he could only obtain the specified pump in 230v.

3. The contractor and I had a discussion about the possibility of using a 1/2 hp, 230v, 1Q pump motor supplied with 208 volts netting less than 1/2 hp but more than sufficient hp than was originally specified. The acceptance of this configuration was contingent upon the manufacturer providing a warranty on the pump motor used in this manner that was the same as a standard installation.

4. The contractor then submitted on the 1/2 hp, 230v, 1Q pump motor for approval however he did not provide any information concerning an expressed warranty from the manufacturer with this pump motor operating at 208v.

5. The submittal was rejected with instruction to provide a 1/3 hp pump motor at 230v, 1Q and also to provide a buck and boost transformer to boost the voltage at the pump motor from 208v to 230v.

6. The contractor then received specific information in the way of a drawing from Conserva-Tech Engineering dated 1/26/94 on an 8½"x11" sheet for the type of configuration required to utilize a 1/3 hp, 230v, 1Ø pump namely by wiring in a .25 kva buck and boost transformer prior to the motor.

7. A field inspection revealed that the 1/2 hp, 230v, 1Ø motor were installed and that it is the contractors desire to leave them in place.

B. APPROACH

At this point in order to bring this issue to a timely close and to save time, effort and expense on the part of the contractor the 1/2 hp, 230v, 1Ø pump motor install may be utilized if the fuses protecting the circuit feeding the pump motor are changed to 6.0 amps and the thermal overloads are changed to a rating of 6.0 amps. This will assure that the supply feeders will not experience an excessive voltage drop, that the 1/2 hp motors will not develop more than 1/3 hp nominally and that the pumps will operate within a voltage range which will not void the normal manufactures warranty. Please note that tripping of the fuses or the thermal overloads in this configuration does not necessarily indicate a worn out motor or a motor malfunction but simply that the motor may be developing more hp than is hydraulically necessary perhaps because of a clogged screen or a bound impeller.

Sincerely,

Russell J. Healey, P.E.

RJH/gh

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 7

LOCATION / REFERENCE OF MODIFICATION: DW-9 only: Cross-Section E-E', Drawing B-5.

MODIFICATION MADE: Remove 10-inch diameter polypropylene surface casing. Re-drill DW-9 and install 8-inch diameter stainless steel screen and riser as shown on Attachment 1.

APPROVED BY DESIGNER: Russell Healey (NAME) | Conserva-Tech Engineering (COMPANY) | 03/18/94 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 03/28/94 (DATE)

REMARKS: Screen required to prevent fractured, caving dolomite from blocking borehole. Contractor must provide water tight seal between 8-inch riser and vault floor.

ATTACHMENTS:
1) Well installation diagram.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

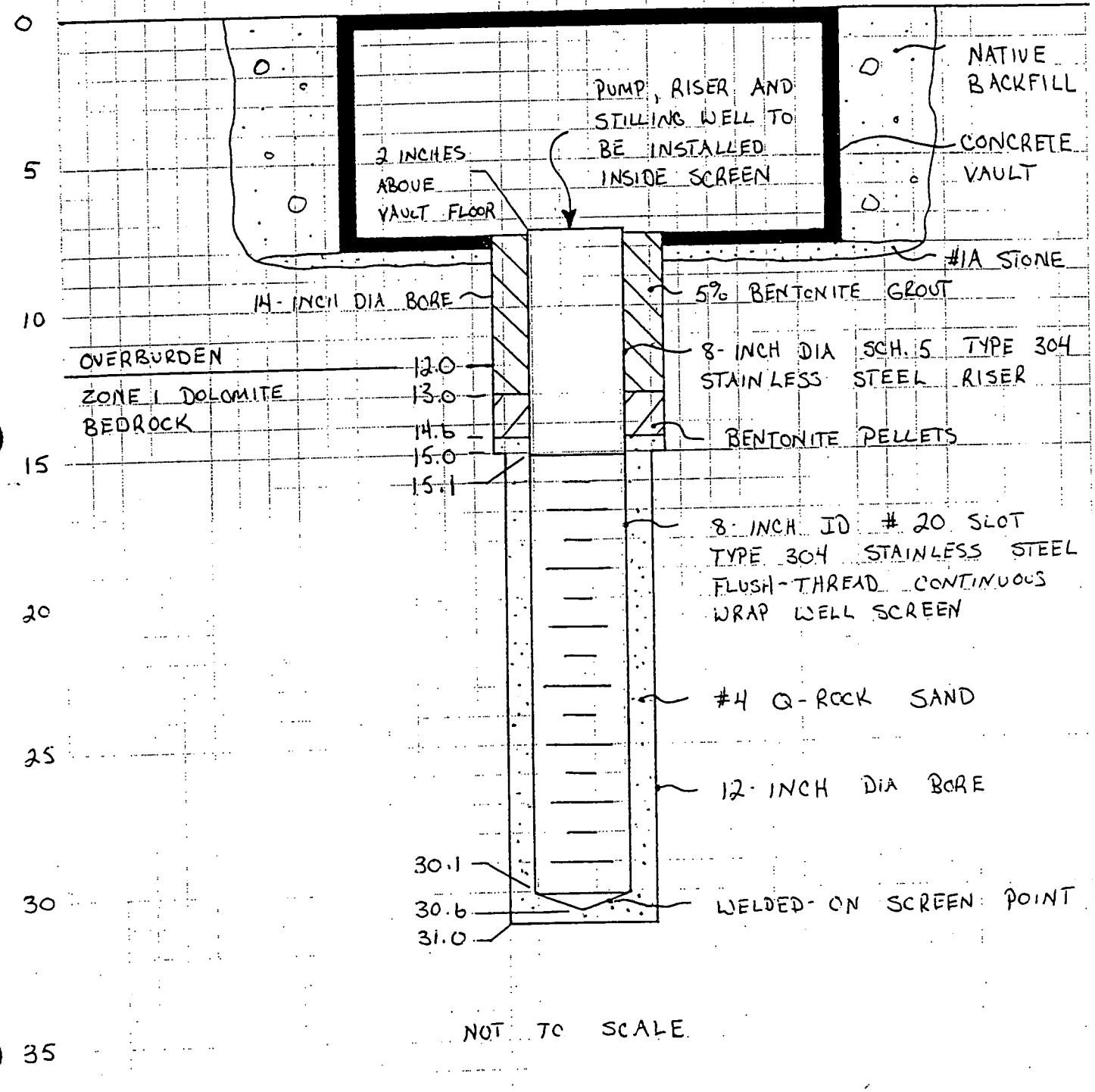
Golder Associates

SUBJECT	DW-9 WELL CONSTRUCTION DIAGRAM		
Job No. 933-9068	Made by DCW	Date 3/18/94	
Ref.	Checked	Sheet 1 of 1	
	Reviewed		

BELL AEROSPACE TEXTRON

DW-9 WELL MODIFICATION CONSTRUCTION DIAGRAM

(ATTACHMENT 1)



NOT TO SCALE

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 8

LOCATION / REFERENCE OF MODIFICATION: All PVC conduit exterior to the treatment building, excluding that leading from the BAT plant proper to the treatment building.

MODIFICATION MADE: All conduit specified above shall have the cable pulled from it and shall be abandoned. The vault entry points shall have the conduit removed, the holes sealed, and new entry points drilled. New conduit shall be installed a minimum of 24 inches below grade with a minimum of 6 inches (after compaction) of New York State Department of Transportation #1A stone above and below the conduit. Acceptable compaction of the stone will be verified by proofrolling, as determined by Owner's representative. Schedule 80 conduit shall be used. A flush-mount handhole shall be used at the "tee" between DW-12, DW-11, and DW-10. If natural fill is to be placed over the #1A stone, geotextile shall separate the two materials. Adjacent to or across driveways, only #1A stone shall be used to backfill trench.

APPROVED BY DESIGNER: Russell Healey (NAME) | Conserva-Tech Engineering (COMPANY) | 04/12/94 (DATE)

OWNER NOTIFIED OF MODIFICATION:
[X] YES
[ ] NO

Brian Smith (NAME) | Textron Defense Systems (COMPANY) | 04/12/94 (DATE)

REMARKS: Original conduit leading to all vaults did not meet specifications for watertightness after several attempts to seal it. Schedule 80 conduit will be used instead of Schedule 40 because of the shallow burial depth.

ATTACHMENTS:
See manufacturer product data sheet for handhole.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Al Marzelli - Laidlaw
Robert McNamara - Wendel

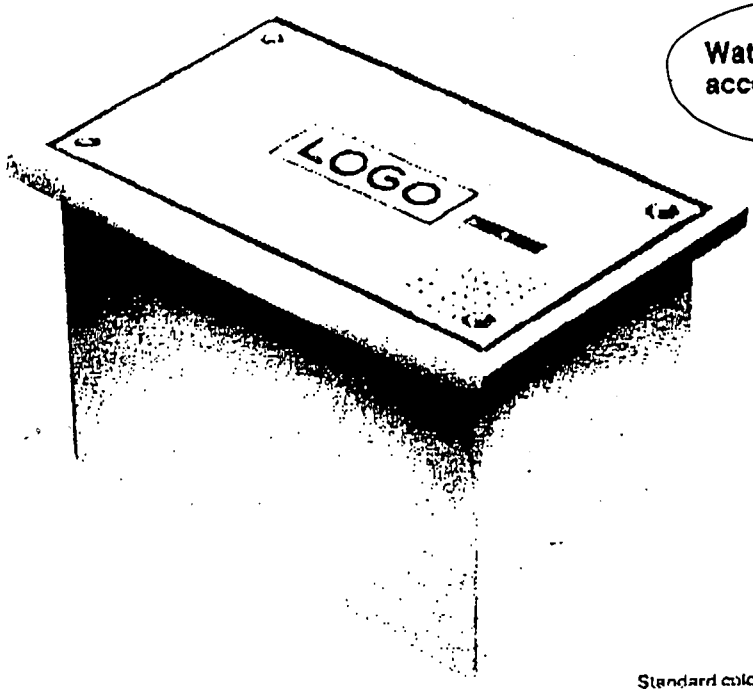
Quazite COMPOSOLITE

"PC" Style Gasketed Boxes

12" x 12", 8" x 18" & 11" x 18"

For use as a **Splice Box** or **Pull Box**

Watertight, tested in accordance with NEMA 4.



BOX WITH COVER

Standard color is gray–other colors available

- Lightweight, easy to handle for lower installed cost
- High strength
- Exceptional resistance to sunlight exposure, weathering and chemicals unaffected by freeze/thaw cycles
- Fits flush with sidewalk or grass area
- No grounding required
- Stainless steel inserts and bolts
- Light and heavy traffic designs available

Applications

Standard Cover

Service Load: 8000# over a 10" square

Design is for sidewalk applications with a safety factor for occasional light vehicular traffic.

Heavy Duty Covers

Service Load: 15,000# over a 10" square

Design is for driveways, parking lots and off roadway applications where subject to occasional heavy vehicles. (See Quazite® Instruction Sheet 102.)

Due to the variation in installations, and applications, this information should be used as a basis for recommendation and not a guarantee of performance.

Value Engineered Construction

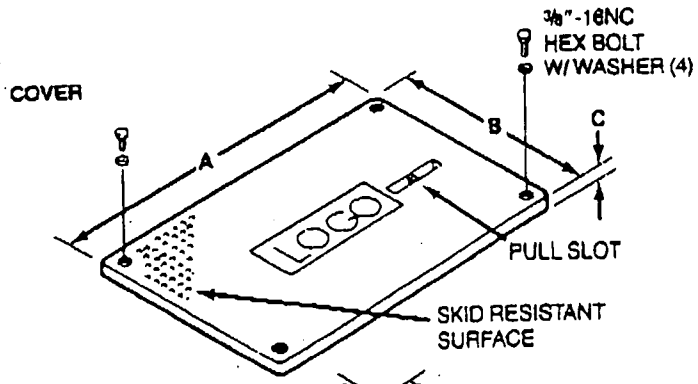
Composolite® Service Boxes are constructed of polymer concrete and reinforced by a heavy-weave fiberglass. The results are exceptional strength and rigidity combined with minimal weight.

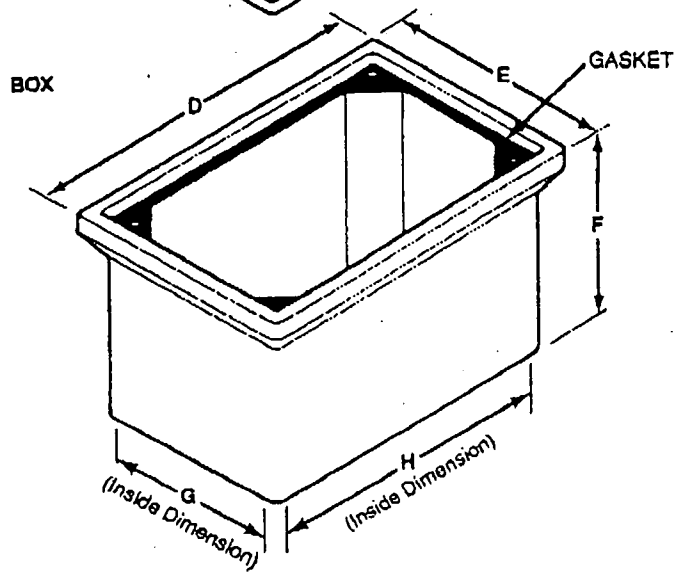
Standard Cover Logos

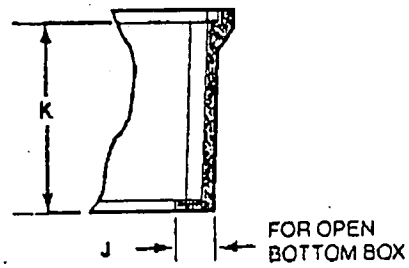
09 Blank	46 Traffic Signal
17 Electric	14 Controls
26 High Voltage	23 Gas
41 Street Lighting	43 Telephone
29 Lighting	12 Communications
24 Ground	21 Fiber Optics
44 Traffic	10 C.A.T.V.

SPECIFICATIONS/DATA

12" x 12", 8" x 18" & 11" x 18" PC Style Gasketed Boxes







Options

1. Stainless steel Penta-head bolt
2. Specific cover logo
3. Green or other colors
4. Special holes

Covers (Blank unless logo is specified)

DESCRIPTION	PART NO.	DIMENSIONS (IN.) A	B	C	WT.LBS.
Standard Cover 4 bolts	PC0818CG00	19 5/8	9 5/8	3/4	11
	PC1118CG00	18 1/2	11 1/2	3/4	18
	PC1212CG00	12 7/8	12 7/8	3/4	8
Heavy Duty Steel Locking Cover	PC0818SG00	19 5/8	9 5/8	3/4	25
	PC1118SG00	18 1/2	11 1/2	3/4	40
	PC1212SG00	12 7/8	12 7/8	3/4	25

Boxes (Gasketed)

DESCRIPTION	PART NO.	DIMENSIONS (IN.) D	E	F	G	H	J	K	WT. LBS.
Box W/Solid Base	PC0818DG08	21 5/8	11 5/8	8 1/2	8	18	N/A	7 3/4	29
	PC1118DG12	20 1/2	13 1/2	12	10 3/4	17 1/4	N/A	11 1/4	49
	PC1212DG12	14	14	12 3/4	11 3/4	11 3/4	N/A	12	32
Box W/Open Base	PC0818BG08	21 5/8	11 5/8	8 1/2	8	18	1	7 3/4	20
	PC1118BG12	20 1/2	13 1/2	12	10 3/4	17 1/4	3/8	11 1/4	42
	PC1212BG12	14	14	12 3/4	10 1/2	10 1/2	1	12	27

Suggested Specifications
Underground enclosures shall be Composolite® as manufactured by Quazite® Corporation or approved equal. Enclosures and covers shall be concrete gray color and rated for no less than 8,000 lbs. over a 10" x 10" area and be designed and tested to temperatures of -60°F. Material compressive strength should be no less than 11,000 psi. Covers shall have a minimum coefficient of friction of .5. Boxes shall be stackable for extra depth.

Quazite® COMPOSOLITE®
A Division of MMFG
304 Industrial Blvd. • Lenoir City, Tennessee 37771
800/346-3062 • 615/986-9726 (In TN)

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 8R

LOCATION / REFERENCE OF MODIFICATION: All PVC conduit exterior to the treatment building, excluding that leading from the BAT plant proper to the treatment building.

MODIFICATION MADE: All conduit specified above shall have the cable pulled from it and shall be abandoned. The vault entry points shall have the conduit removed, the holes sealed, and new entry points drilled. The general fill in the trench shall be removed to the top of the New York State Department of Transportation #1A stone in the trench. New conduit shall be installed on the top of the #1A stone and a minimum of 6 inches (after compaction) of #1A stone shall be installed above the conduit. Compaction of the #1A stone will be field verified by the Owner's representative. Place geotextile above the #1A stone and backfill the trench with general fill in accordance with the specifications (see page 25). A flush-mount handhole shall be used at the "tee" between DW-12, DW-11, and DW-10.

APPROVED BY DESIGNER:	NAME	COMPANY	DATE
	Anthony Grasso	Golder Associates Inc.	04/21/94
	Russell Healey	Conserva-Tech Engineering	04/21/94

OWNER NOTIFIED OF MODIFICATION: [X] YES [ ] NO

	NAME	COMPANY	DATE
	Brian Smith	Textron Defense Systems	04/21/94

REMARKS: Original conduit leading to all vaults did not meet specifications for watertightness after several attempts to seal it. This specification/design modification replaces specification/design modification no. 8.

ATTACHMENTS:
See manufacturer product data sheet for handhole.

DISTRIBUTION:
Brian Smith - Textron Defense Systems
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Mark Noack - Laidlaw
Robert McNamara - Wendel

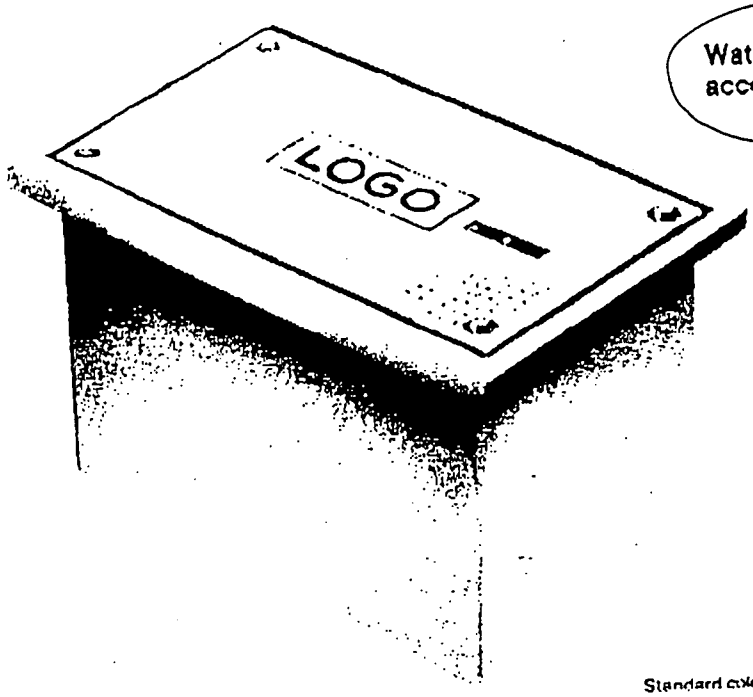
Quazite COMPOSOLITE

"PC" Style Gasketed Boxes

12" x 12", 8" x 18" & 11" x 18"

For use as a Splice Box or Pull Box

Watertight, tested in accordance with NEMA 4.



Standard color is gray–other colors available

BOX WITH COVER

- Lightweight, easy to handle for lower installed cost
- High strength
- Exceptional resistance to sunlight exposure, weathering and chemicals · unaffected by freeze/thaw cycles
- Fits flush with sidewalk or grass area
- No grounding required
- Stainless steel inserts and bolts
- Light and heavy traffic designs available

Applications

Standard Cover

Service Load: 8000# over a 10" square

Design is for sidewalk applications with a safety factor for occasional light vehicular traffic.

Heavy Duty Covers

Service Load: 15,000# over a 10" square

Design is for driveways, parking lots and off roadway applications where subject to occasional heavy vehicles. (See Quazite® Instruction Sheet 102.)

Due to the variation in installations, and applications, this information should be used as a basis for recommendation and not a guarantee of performance.

Value Engineered Construction

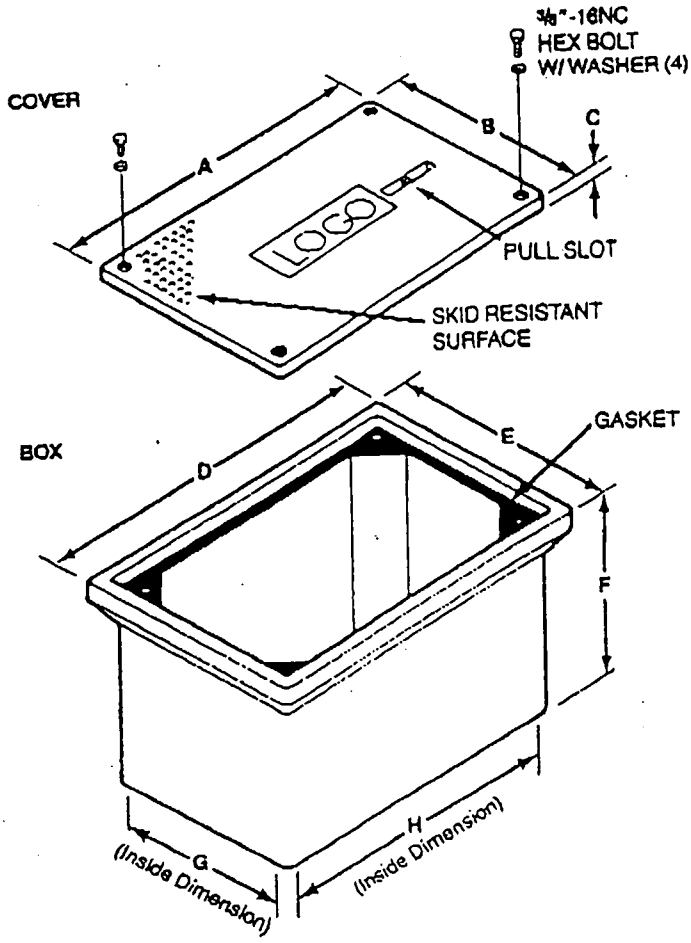
Composolite® Service Boxes are constructed of polymer concrete and reinforced by a heavy-weave fiberglass. The results are exceptional strength and rigidity combined with minimal weight.

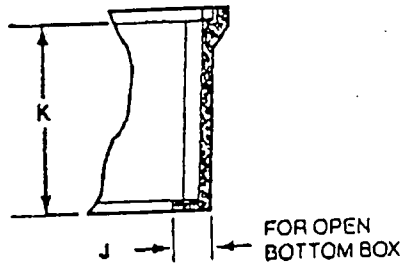
Standard Cover Logos

09 Blank	46 Traffic Signal
17 Electric	14 Controls
26 High Voltage	23 Gas
41 Street Lighting	43 Telephone
29 Lighting	12 Communications
24 Ground	21 Fiber Optics
44 Traffic	10 C.A.T.V.

SPECIFICATIONS/DATA

12" x 12", 8" x 18" & 11" x 18" PC Style Gasketed Boxes





Options

1. Stainless steel Penta-head bolt
2. Specific cover logo
3. Green or other colors
4. Special holes

Covers (Blank unless logo is specified)

DESCRIPTION	PART NO.	DIMENSIONS (IN.) A	B	C	WT.LBS.
Standard Cover 4 bolts	PC0818CG00	19⅞	9⅞	¼	11
	PC1118CG00	18½	11½	¼	18
	PC1212CG00	12⅛	12⅛	¼	8
Heavy Duty Steel Locking Cover	PC0818SG00	19⅞	9⅞	¼	25
	PC1118SG00	18½	11½	¼	40
	PC1212SG00	12⅛	12⅛	¼	25

Boxes (Gasketed)

DESCRIPTION	PART NO.	DIMENSIONS (IN.) D	E	F	G	H	J	K	WT. LBS.
Box W/Solid Base	PC0818DG06	21⅛	11⅝	8½	8	18	N/A	7¾	29
	PC1118DG12	20½	13½	12	10¾	17¼	N/A	11¼	43
	PC1212DG12	14	14	12¾	11¾	11¾	N/A	12	32
Box W/Open Base	PC0818BG06	21⅛	11⅝	8½	8	18	1	7¾	30
	PC1118BG12	20½	13½	12	10¾	17¼	⅞	11¼	42
	PC1212BG12	14	14	12¾	10½	10½	1	12	27

Suggested Specifications
Underground enclosures shall be Composolite® as manufactured by Quazite® Corporation or approved equal. Enclosures and covers shall be concrete gray color and rated for no less than 8,000 lbs. over a 10" x 10" area and be designed and tested to temperatures of -50°F. Material compressive strength should be no less than 11,000 psi. Covers shall have a minimum coefficient of friction of.5. Boxes shall be stackable for extra depth.

Quazite® COMPOSOLITE®
A division of MMFG
304 Industrial Blvd. • Lenoir City, Tennessee 37771
800/346-3062 • 615/986-9720 (In TN)

SPECIFICATION / DESIGN MODIFICATION FORM

PROJECT NUMBER: 933-9068
OWNER: Textron Defense Systems
LOCATION: Bell Aerospace Textron
Wheatfield, New York Facility

PROJECT TITLE: TDS/CQA On-Site/NY
CONTRACTOR: Laidlaw

FORM NUMBER 9

LOCATION / REFERENCE OF MODIFICATION: DW-9

MODIFICATION MADE: The pump, stilling well and transducer in DW-9 are to be raised 0.6 feet to allow additional room for silt collection below the pump. All measurements are in feet below top of 8-inch diameter steel casing (BTOC). Pump control settings are unchanged.

	Old Level	New Level
Transducer	20.2 Feet BTOC	19.6 Feet BTOC
Pump Sleeve Bottom	22.5 Feet BTOC	21.9 Feet BTOC

APPROVED BY DESIGNER: Anthony L. Grasso (NAME) Golder Associates Inc. (COMPANY) 04/24/95 (DATE)

OWNER NOTIFIED OF MODIFICATION: [X] YES [ ] NO

John Devic (NAME) Bell Aerospace Textron (COMPANY) 4/24/95 (DATE)

REMARKS: Well displays a tendency to silt.

ATTACHMENTS:
None.

DISTRIBUTION:
Bruce Mills - Laidlaw
John Devic - Bell Aerospace Textron
Russell Healey - Conserva-Tech Engineering
Robert McNamara - Wendel